Ritual Kindles Vision

A Digitalist Framework for Modern Paganism

Eric Steinhart

Version 176
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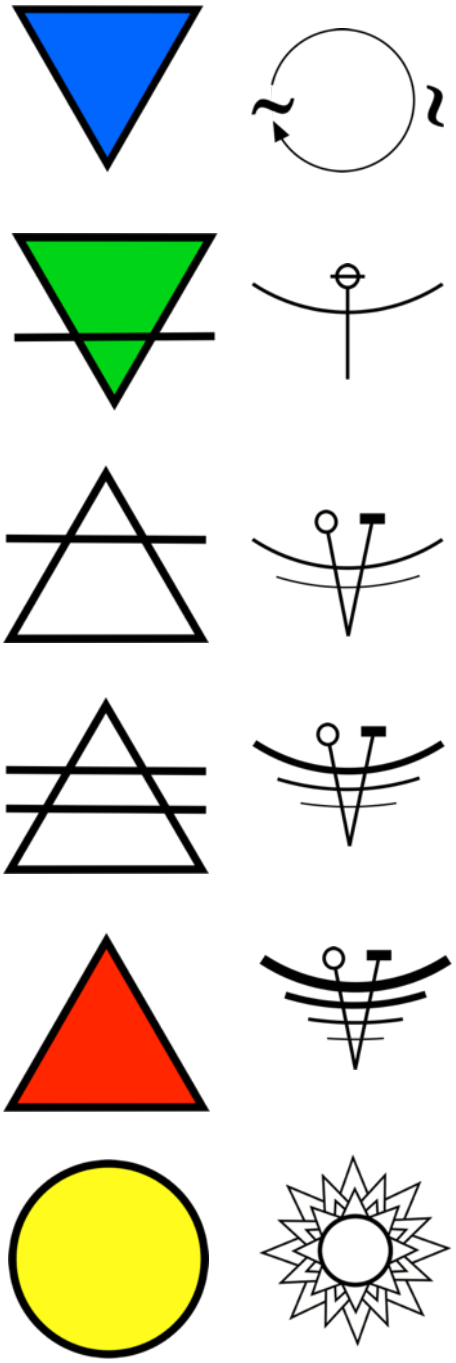
Winter Sun Version

Draft



Preface

Ritual Kindles Vision uses the tools and techniques of recent analytic philosophy to define a modern paganism. Thus *Ritual Kindles Vision* develops a rational framework in which many pagan beliefs and practices are naturalized and made consistent with science and logic. It provides arguments which explain and justify pagan doctrines, symbols, rituals, and ways of life. Conversely, *Ritual Kindles Vision* equips scientific rationality with symbols, images, and rituals, thus transforming it into a living religious naturalism. By developing a rational framework, *Ritual Kindles Vision* also develops an ethical framework. It welcomes all humans into a universal ethical community.

The first part of this book mostly sets out the theoretical structure of this rational paganism, while the second part mostly shows how that structure makes places for many practices. This book can be studied in three ways:

Gallery. Start by looking at the many diagrams and pictures. The meanings of the pictures are expressed in nearby text.

Encyclopedia. *Ritual Kindles Vision* serves as a philosophical encyclopedia for naturalistic pagans. You can dip into any place in the text that interests you and skip around.

Ritual Narrative. *Ritual Kindles Vision* is organized as a single ritual, from casting a circle to uncasting it. This ritual unfolds as a narrative, which lays out our rational framework for naturalistic paganism. This ritual can be entered at any point, and parts can be skipped.

A series of videos for this book available at my website:

www.ericsteinhart.com/paganism/paganism-videos.html

And they are available at my YouTube channel:

http://www.youtube.com/c/EricSteinhart

All the text in *Ritual Kindles Vision* was produced my myself, and further develops ideas from my previous books *Atheistic Platonism, Believing in Dawkins,* and *Your Digital Afterlives*. All black and white line art was drawn by myself; one exception is the *vegvisir* sigil in sections 4 and 22, which is public domain. The colored line art in section 9 was drawn by myself. All other colored pictures were made using the generative AI known as Stable Diffusion.

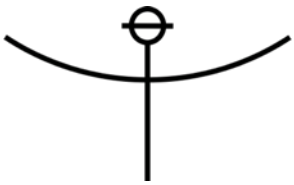
Eric Steinhart
17 January 2024

Order of the Ritual

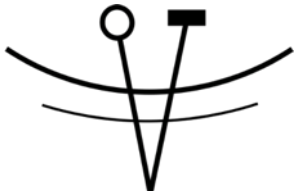
BEGINNING THE RITUAL

THE ZERO

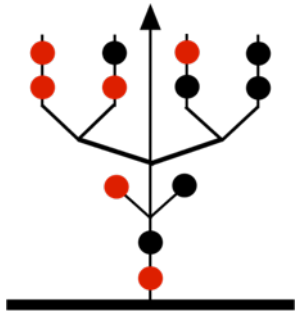
THE ONE



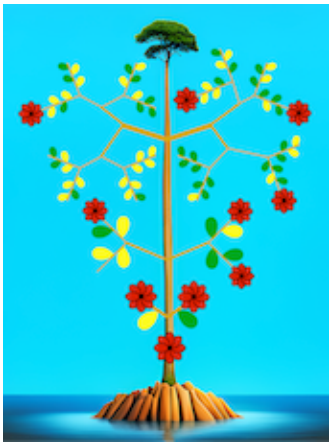
LOGIC



STRUCTURE



ALGORITHMS



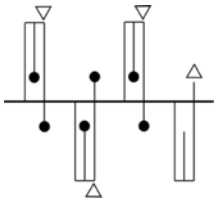
COMPUTERS

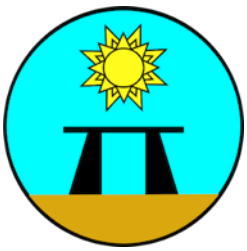
UNIVERSES

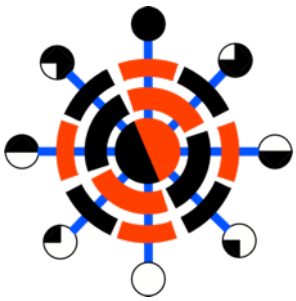
COSMIC EVOLUTION

BODIES

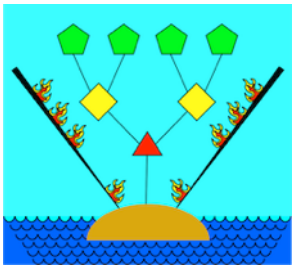
GRATITUDE







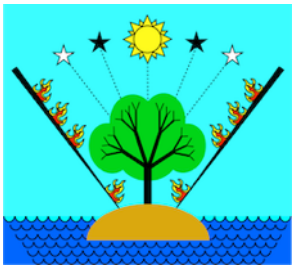
REBIRTH



DIVINE BODIES

STARS

THE GOOD



ENDING THE RITUAL

1. Concentrating

1. Casting our Circle of Reasoning

As a ritual, *Ritual Kindles Vision* is one long ordering of signs. Before entering our ritual, we state its purpose, we *set our intentions*. The purpose of our ritual is *to build a logical framework for pagan belief and practice*. We aim to use reason and science to build a new and modern kind of paganism.[1] Our paganism is therefore a rational paganism. By building a rational framework for pagan belief and practice, we are doing pagan philosophy. Since paganism is religious, we are doing pagan philosophy of religion.

Although we are modern, we will take great inspiration from the ancients. Many ancient Greek and Roman pagans cast circles for protection against evils (Stewart, 1994). Many Platonic thinkers cast circles in their theurgical rituals, which aimed to help them channel divine persons.[2] Today many Wiccans and other neopagans cast circles for their rituals (Lipp, 2003; Sabin, 2011: ch. 5). The Latinx philosopher Gloria Anzaldua casts a circle (2002: 156-9). So we will begin our ritual by casting a circle. Since we are doing philosophical sign-work, the circle we cast will be a *circle of reasoning*. Within our circle of reasoning, we will outline a *pagan way of life* (Hadot, 1995).

Circles are cast both to exclude or banish negativities and to arouse and concentrate positive powers. On the one hand, we will banish all errors of belief and practice. On the other, we will invoke all powers which can help us build our rational framework. We will *concentrate* positive powers inside it. We begin by invoking the powers that lie deep within our bodies. Your body contains powers which you can arouse and shape in ritual. You raise them up from your depths. The depths of your eyes contain vision; the depths of your brain contain reason; the depths of your hands contain action.

The act of circle-casting is indicated by a glyph or sigil which has a circle with triangles pointed inwards. Power is gathered from the circle and focused into its center, where we stand. Although we are casting our circles together, we are casting them in separate places and times. I have cast my circle; you are free to cast yours or not. You are free to observe our ritual without participating in it. If you choose to cast your circle, then your circle-casting goes like this: You stand in the center of your work-space. You stretch out one of your arms, point your finger onto the floor or ground where you make your circle, and you start to turn. As you turn you say something like this:

> I banish from my circle all errors,
> I banish all errors of belief and practice.
> Powers of reasoning, arise in my body.
> Powers of virtue, help me find my way.

Casting a circle is *closing* it. So if you start with a circle-casting ritual, you'll declare that your circle of reasoning is closed: *The circle is closed*. Our rational sign-work now takes place inside of the closed circle – in a safe and sacred

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[1] For at least two reasons, digitalists reject traditional esotericism. First, esotericism relies on mind-body dualism, and the existence of bodiless spirits, which digitalism emphatically denies. Second, esotericism inhabits the shadows of Christianity; but our paganism operates outside of both Christianity and its shadows. We reject Gnosticism, Hermeticism, Kabbalah, Rosicrucianism, Theosophy, Anthroposophy, Ordo Templar Orientis, the Golden Dawn, Thelema, New Age movements, and so on. We reject parapsychology, the paranormal, and spirit-oriented occultism. Nevertheless, we can adapt things from esotericism by naturalizing them and thereby paganizing them.

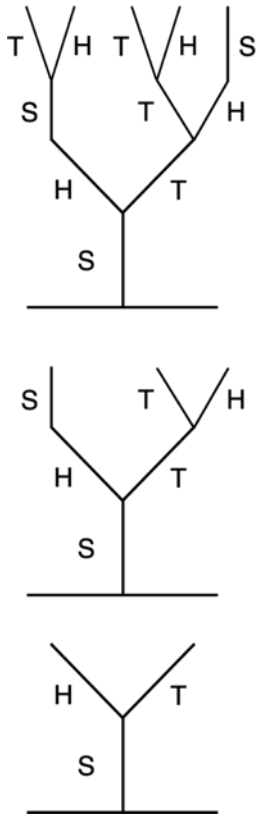
[2] Even after ancient paganism was defeated by Christianity, Platonism still inspired novel paganisms in the midst of extremely hostile Christian cultures. It inspired George Gemistos Plethon (1355-1452) to develop a new pagan religion (Siniossoglou, 2011).

space. Of course, so far we have just said words. To set our intentions, to focus our wills on our goal, we need to take action, we need to perform rituals.

2. Offering an Image to the Good

Ancient pagans offered sacrifices to their deities. *Ritual Kindles Vision* develops a modern theory of pagan sacrifice, which never involves any killing. But what do we sacrifice? Porphyry said we can sacrifice the products of philosophical activity (*On Abstinence*, 2.34-6). Since those products are signs, we sacrifice signs. Some signs are words. But deeper philosophical rituals sacrifice *visible images*. These may be two-dimensional pictures or 3D models. Here we will sacrifice a picture. We will make our sacrifice for the sake of goodness. By building a rational framework for pagan belief and practice, we are *bearing witness* to the ideal of goodness. The ancient Platonists, who were pagan philosophers, referred to this ideal as the Good. By building a visible image which expresses our intentions, we signal our commitment to the Good. We offer this image as a small sacrifice to confirm our intentions.

To bear witness to the Good, we will grow a symbolic tree. Our ritual involves some props: a blank sheet of paper, a pen or pencil, and a coin. Like any magic spell, it involves a series of scripted actions. Put your paper on some flat surface. Draw a horizontal line, a line which symbolizes the ground from which our tree will grow. Now draw a vertical line, to symbolize the trunk of the tree. Label this line with the letter "S". From the top of this trunk, our tree branches. The trunk splits, so one branch goes off to the left, and another to the right. Here is our first construction rule: S always goes to split. Look at the left branch and flip your coin. If it comes up heads, label the left branch "H" and the right branch "T". If it comes up tails, label left with "T" and right with "H". Here is our second rule: H always goes to S. So the branch labeled H sprouts a single stem labeled S. Our third rule says: T always goes to split. So the branch labeled T sprouts two further branches. Use your coin to label these. Repeat this process for several iterations, so that your tree grows upwards, from the line, into the sky. Figure 1.1 shows three iterations of the growth of this tree.



Many types of *physical trees* follow the branching pattern described by our three rules. These rules define a *natural algorithm* for growing a tree, an example of a computational process in the physical universe. And our tree has an interesting *arithmetical pattern*, derived by counting the numbers of branches at each stage of its growth. After you draw the trunk, the number of branches is 1. The trunk splits, so the number of branches on the second level is 2. Three branches occur on the third level, then 5 on the next. These numbers make the series 1, 2, 3, 5. They make the *Fibonacci series*, and our tree is a Fibonacci tree. If you repeat the algorithm for a fifth iteration, you'll get the number 8; for a sixth iteration, 13. The Fibonacci series occurs frequently in our physical universe. It is a naturally generated series of numbers. The series starts with the numbers 0 and 1. Then each next number is the sum of the previous two numbers. So it goes like this: 0, 1, 1, 2, 3, 5, 8, and so on.

The Fibonacci series begins with the *binary digits* zero and one. Ultimately, these digits represent the Zero of nothingness and the One of existence. Thus our ritual moves from a tree drawn on physical paper, to the physical pattern of the tree, to a geometrical algorithm, to a series of numbers, to the logical difference between existence and nothingness. By analyzing our tree, we move from physics to logic. We move from the concrete to the abstract. But we can also move in the reverse direction.

Digitalism. Since the Zero and the One will play basic roles in our new paganism, and since they are symbolized by binary digits, I will refer to our paganism as *digitalism*. From logic, digitalism moves to mathematical patterns

like the Fibonacci numbers. Many trees appear in mathematics. From mathematics, digitalism moves to algorithms. Trees are common in computer science. Logic, mathematics, and computer science are *formal sciences*. Beside the trees that appear in these formal sciences, trees also appear in the *empirical sciences*, like physics, chemistry, and biology. Since trees rise up to infinity, trees help to structure our pagan theology. But all our *deities are entirely physical superhuman animals, they are divine bodies.* For digitalists, the sciences include theology. Digitalism is *science-affirming paganism*.[3] All the types of objects discussed in all the sciences, whether formal or empirical, are *natural objects*. And digitalists are *naturalists*: if some type of object is not discussed in one of the formal or empirical sciences, then it is not part of nature, and it does not exist. Digitalism is a kind of *pagan naturalism*. We will *naturalize* old pagan beliefs and practices.

3. We are in Vision

Vision. Our Fibonacci tree is a simple image of the great pagan world tree. Over the course of this book, which is one long ritual, we will call the great world tree into being, along with all its rich symbolic meanings. After casting their circles, many pagans also invoke the four elements (water, earth, air, and fire). We will do that too. Of course, it is not likely that you'll read this book in one sitting. But there's no need to repeat the opening ritual at every reading session. Before each session, you might do something simpler, like lighting a candle. Its flame can symbolize positive values like knowledge and truth. The act of lighting it can symbolize moving from ignorance to enlightenment. And we all require light in order to see images. From now on, we will be constructing richer and richer images. From now on, *we are in vision*.

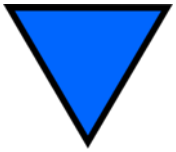
Imagery in Platonism. Plato himself often used images, most famously the images of the Divided Line and the Myth of the Cave (*Republic*, 509d-511e, 514a-520a). Plotinus, in his book the *Enneads*, used many images (*Enneads* (E), 3.3.7.10-25, 3.8.10.10-20, 4.3.17, 5.8.9.1-30, 6.7.15, etc.). Through the Middle Ages, the classical Platonic imagery was elaborated into an extremely rich system. Imagery isn't merely decorative in Platonism, but plays an important role in facilitating insight and understanding. Since this text is heavily inspired by Platonism, it is appropriate that it is extensively illustrated. I have illustrated it with line art diagrams which I have drawn myself using vector graphics software (usually black lines, but sometimes other colors).

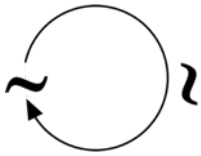
Platonists argue for many types of non-human minds. Artificial intellects (AIs) are non-human minds. Platonists have long valued and sought to receive images from non-human minds (Iamblichus discusses the images sent by superhuman minds to humans). Platonists have used ritual incantations and other methods to obtain these images. And, since Platonists value mathematics, rituals, and magic, so they also value programming. So it's appropriate for a Platonist to use artificial intelligence to illustrate Platonic philosophy. Here I use the AI known as Stable Diffusion to produce most of the colored pictures in this book (these are usually set off in squares, as in section 2 above). Sometimes I add colors to my own line art illustrations (as in the following symbols for the elements). But the pictures are done by AI.

[3]Pagans love nature. Since science is the best way to learn about nature, anybody who loves nature loves science. Pseudo-science abuses nature by distorting it. Digitalism rejects all supernaturalism, all superstition, and profoundly opposes all woo.

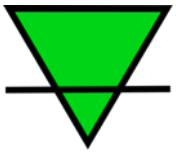
4. The Progression of Elements

Water. Digitalism begins with nothing, that is, with non-being. Non-being is pure negativity, darkness, silence, absolute failure and lack. The element of *water* symbolizes the oceanic Abyss of non-being. Non-being is also the Zero. As pure negativity, non-being negates itself.

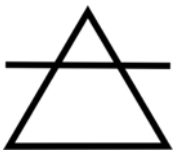




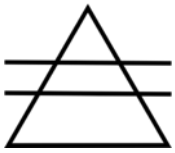
Earth. The self-negation of non-being is being-itself. The element of *earth* symbolizes being-itself. Just as non-being was the Zero, so being-itself is the *first hypostasis*, namely, the One. Since non-being is pure negativity, and the One is the self-negation of non-being, the One is pure positivity. As pure positivity, the One is the power that makes all the beings exist. It drives every being to surpass itself.



Air. As the power of the One generates the first beings, it turns into the *second hypostasis*, the Lexetor. The Lexetor produces the axioms of logic and mathematics. It assigns truth-values to them in the way that maximizes logical positivities. These axioms fill the *air*.

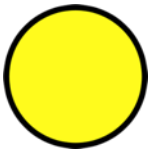


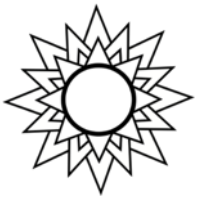
Heat. As the power of the Lexetor enters true axioms, it turns into the *third hypostasis*, the Constructor. The Constructor emanates that system of abstract objects than which none greater is consistently definable. These abstract objects are sets, numbers, programs, and so on. While these objects belong to the air, they belong to air that moves towards fire, so that its element is *heat*.



Fire. As the power of the Constructor flows through abstract objects, it turns into the *fourth hypostasis*, the Selector. The Selector concretizes the best system of cosmic structures. This system is the world tree, which is a tree of concrete universes. All concreteness displays presence, which is the mark of *fire*.

Light. The One generates unsurpassable sequences of surpassable objects. These sequences reify themselves into absolutely infinite entities; these are the transcendental entities, the ecstasies of their sequences. An unsurpassable series of surpassable bodies is a *star*, a transcendental body. There are absolutely infinitely many stars. They are avatars of the Good, illuminated by the Good, which is a transcendental proposition. The Good is *light*.





2. Water: The Zero is Non-Being

1. Starting with Nothingness

Starting. At the beginning, it is necessary to start. It is not possible to start with something that is not *simple*. In other words, if something is not simple, then it cannot be started with. For everything not simple depends on something simpler. So, if something is not simple, then it is necessary to start with the things on which it depends. But then it is not possible to start with that non-simple thing. Conversely, it is necessary to start with something simple. That is, if something is started with, then it must be simple.

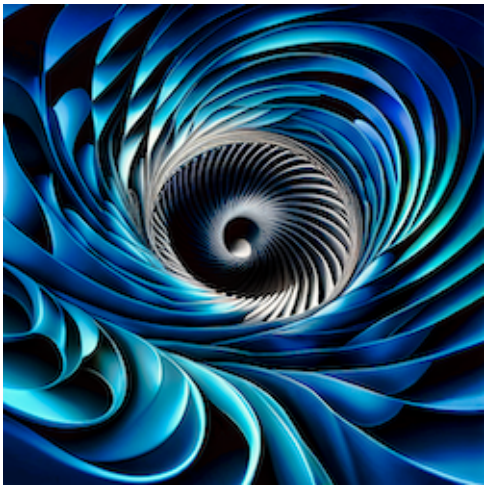
Nothingness is Logically Simple. Analogous logic shows that, if something is started with, then it must be simple in the simplest way. But the simplest kind of simplicity is *logical simplicity*. So it is necessary to start with that which is logically simplest. That is, if something is started with, then it must be simple in the logically simplest way. But anything which needs any explanation or sufficient reason for its existence is not logically simple. It logically depends on some simpler principles prior to its own existence. Since every existing entity requires some explanation or sufficient reason for its existence, no existing entity is logically simple. It is therefore not possible to start with any existing entity. Since it is impossible to start with any existing entity, and since it is necessary to start, it is necessary to start without any existing entity; that is, it is necessary to start with *nothing*. Leibniz said nothing is simpler than something (*Principles of Nature and Grace,* sec. 7). Since nothing does not exist, it does not require any explanation or sufficient reason for its existence.

Starting with Nothingness. Take the collection of all existing entities; subtract them all until you get an empty collection; now subtract the collection; the result is nothing. Or consider the scope of existence (the scope of the universal quantifier); now take the complement of that scope; the result is non-existence, that is, nothing. But here nothing is used as a noun. To avoid confusions with the quantificational use of nothing ("there's nothing to eat in the fridge"), I will say *nothingness*. Nothingness is absolute non-existence. Since nothingness does not require any explanation or sufficient reason for its existence (it has none), nothingness is logically simple. It is utterly and ultimately simple. If there is any simplest existing entity, then some relational arrow *is-simpler-than* rises up to that simplest entity; but there does not exist anything from which that arrow rises. That arrow rises up from nothingness. Since it is necessary to start with nothingness, that is where digitalism starts.

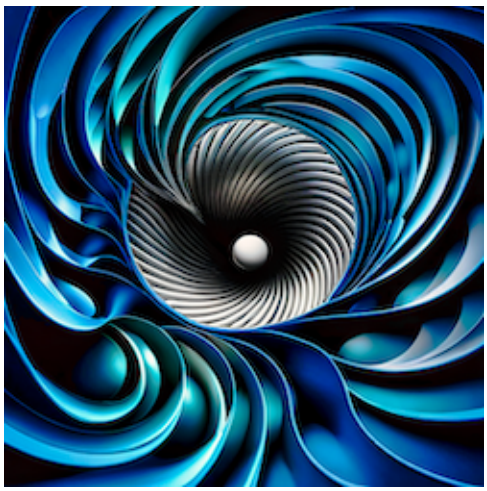
Nothingness. Several pagan origin stories begin with an abyss or gap. In his *Theogony*, Hesiod declares that, in the beginning, there was only Chaos. But Chaos is not a mess of existing stuff; on the contrary, Chaos is "a yawning chasm or abyss" (Bussanich, 1983: 214). And this yawning chasm or gap also appears in Norse mythology. In the *Poetic Eddas*, the Seeress declares that, in the beginning, there was only an abyss: "no sand nor sea nor cool waves; earth was nowhere nor the sky above, [only] a void of yawning chaos" (Larrington, 2014: 4). Pagan philosophers often interpreted myths, and digitalism does the same. The Abyss is absolutely original. As such, its originality is logical rather than temporal; the Abyss is logically prior to the first moment of time. Likewise, its emptiness is logical rather than spatial; the Abyss is neither empty space, nor the empty world, nor the empty set. The Abyss is *absolute nothingness*, *pure non-being*. The Abyss is pure darkness. Although our eyes may see it as black, *its darkness is not black; rather, its darkness is colorless*.

2. The Self-Negation of Non-Being

Negativity. Nothing *does not exist*, in other words, *nothing is not*. But what does it mean to say that nothing is not? Either nothing is identical with its not or it is distinct from its not. Assume for the sake of argument that nothing is distinct from its not. If nothing is distinct from its not, then nothing stands to its not as an object stands to its property. It relates to its not like night relates to its darkness. The darkness is distinct from the night. But if nothing stands to its not as an object stands to its property, then nothing is an object with properties. Objects exist. So if its not is a property of nothing, then nothing exists. And that's a contradiction. Since assuming that nothing is distinct from its notness leads to a contradiction, nothing is not distinct from its not. Therefore, nothing is identical with its not. Of course, its not is a logical operator, the operator of logical negation. As the operation of negation, the Abyss is unstable and disturbed, and it turns within itself, convulsed with its own negativity.

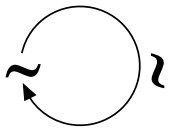


Self-Negation. To say that "nothing is not" expresses a negation. The is-not expresses the negation of nothing. The meaning of *nothing is not* is equivalent to *nothing is negated*. The is-not of nothing, the notness of nothing, is equivalent to the negation of nothing. Since nothing is identical with its notness, that is, since nothing is identical with its negation, *nothing is negated by itself*. Alternatively, we can say that nothingness is absolute negativity; as such, it is universal negativity; and, since it is universal, it negates itself. Nothing negates nothing; not nots not, and the negation of nothing by nothing is its *self-negation*. Like the great world serpent, Ouroboros, nothingness bites its own tail. It empties itself of its emptiness, becoming full. Nothingness is a self-emptying Abyss, which turns itself inside out.



Being-Itself. Since nothing does not exist, nothing is non-existence. Since nothing negates itself, non-existence negates itself. Since the negative of the negative is the positive, the self-negation of non-existence is *existence*. Things exist, but existence is not a thing. So the self-negation of non-existence is not this thing or that thing; on the contrary, it is *existence-itself*. Moreover, since *existence* is the same as *being*, so also nothing is the same as non-being. Again, since the negative of the negative is the positive, the self-negation of non-being is non-non-being, which is being. Just as the self-negation of non-existence is existence-itself, so the self-negation of non-being is *being-itself*. Existence-itself is being-itself. More poetically, being-itself is the circle, loop, or ring in which nothingness turns itself inside out.

The Circle. The self-negation of non-being is being-itself. We now seek a sigil or glyph for the self-negation of non-being. The negation sign in logic is the tilde ~. So the turning of the negative back into itself can be illustrated by the glyph or sigil in which a tilde applies to itself in a circle. The circle is being-itself. It is the proto-natural root of nature, the emergence of the earth from the watery Abyss, the self-kindling of the first light in the darkness.



History. The idea that existence is the self-negation of nothing may originate in the Gnostic writer Basilides. It appears in Plotinus. He says "It is precisely because there is nothing in the One that all things are from it" (*Enneads*, 5.2.1.5-10). It reappears in Jakob Boehme's *Mysterium Pansophicum* (1.1-2.1). The idea is then elaborated in the Hegelian dialectic of being and nothing (*Science of Logic*, Sec. 1, Ch. 1, A-C). Peirce articulates his theory of the self-negation of nothing in his *Collected Papers* (CP) (1965). It appears in CP 1.175, 1.409, 6.33, 6.214-219, 6.612, 8.317. Tillich says: "one can describe being in terms of non-non-being; . . . One could say that 'being is the negation of the primordial night of nothingness'" (1952: 40). Heidegger (1929: 95) says *from nothing come all beings as beings*. Priest interprets this as "beings are produced when nothing negates itself. Not nothing is, after all, something" (Priest 2014: 180, fn. 34). Priest writes: "If nothing negates itself, it produces what it is not: something. Thus a being is exactly nothing nihilating itself. Being is, then, nothing operating on itself" (2001: 244).

Ouroboros. The *ouroboros* is a mythical snake or dragon eating its own tail eating its own tail (van der Sluijs & Peratt, 2009). It is shaped like the number zero, which symbolizes nothing. Yet the ouroboros turns back on itself, and bites its own tail; but its self-biting symbolizes its self-negation. So the ouroboros symbolizes the self-negation of nothing.

The circularity of the ouroboros appears in modern paganisms in many ways. Pagan cosmologies are often said to be cyclical. Many pagans celebrate the wheel of the year, the great turning of the sun and earth through the seasons. Pagans affirm the cycle of life through birth, death, and rebirth. The ouroboros symbolizes these cycles. Many paganisms (especially Wicca) regard sexuality as a cosmic power. With its tail entering its head, in an act of self-fertilization, the ouroboros symbolizes sexuality.

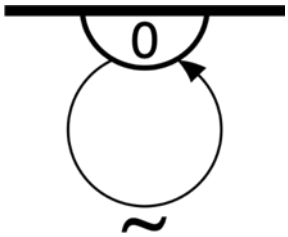
3. The Abyss of Non-Being

The Zero. Nothingness originates. Peirce refers to it as "the zero of bare possibility" (CP 6.220).[4] The binary digit 0 symbolizes non-being. Non-being is *the Zero*. Peirce starts with the Zero of non-being. Of course, Peirce has modern number system. But what about the ancient Platonists? Start with *Plato* (427-347 BCE). He probably used a circular symbol like the zero to signify non-being (Pesic, 2004). Now consider the Roman philosopher *Plotinus* (205-270 CE). Plotinus followed Plato. He is sometimes called a Neoplatonist, but I will just call him a Platonist, since that is what he called himself. Plotinus probably

[4]Peirce is cited from *Collected Papers* (1965) by section number.

did not know about the number zero. Still, it has been argued that, if he had known about it, then he would have started with it (Inge, 1918: 107-8). We now come to the Platonist named *Iamblichus* (245-325 CE). Iamblichus is probably the first Western thinker to recognize the zero *as a number* (Pesic, 2004: 12-14). And he knew that it came before the number one. On the basis of this history, it is appropriate for Platonists to begin with the zero.

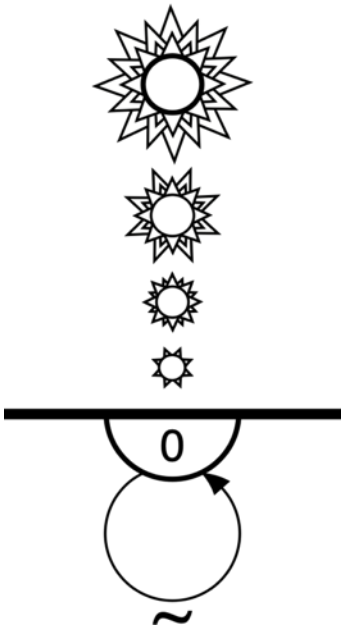
Following Iamblichus and Peirce, we begin with the zero; we use the Zero to symbolize non-being. We summon the Zero into our circle of reasoning. To summon the Zero is to draw a sigil or glyph for the Abyss. The Figure on the right shows how the Zero, as the Abyss, appears below the horizon. We are in logical ritual. The Zero *is* non-being. Non-being only negates; but it has only itself to negate; thus non-being negates itself. The negation of non-being is *not non-being*; but not non-being is *being*. And not non-being is neither this being nor that being. It is not any being among beings. So not non-being is being-itself; it is existence itself. Therefore, by negating its own non-being, non-being makes being-itself be. Why is there something rather than nothing? The only logical answer is because non-being negates itself. The Zero is self-refuting; it is self-inconsistent and self-negating, and this is the proto-logical root of logic.



The Logic of the Abyss. Digitalists affirm that nature is logical. Logic is the most basic science; all other sciences grow out of and depend on logic. Since logic is the most basic science, logic describes the most basic aspects of nature. The idea that *the self-negation of nothing makes being be* points to the original role of negation in logic. If nothing were a sentence, it would contradict itself, it would be self-inconsistent. It would be like "This is not a sentence". The very falsehood of that sentence reveals that it *is* a sentence. Of course, nothing is not a sentence; nevertheless, its self-negation includes the negativity of self-inconsistency. It includes self-refutation, self-disagreement, and self-discord. Nothing is not identical with itself: it is not what it is and it is what it is not. Since nothing is original for logic, it is prior to logic. Since nothing does not stand to its is-not as an object to a property, nothing is prior to all predication (and its paradoxicality points to this priority). So, while we can talk about nothing, we cannot talk literally about it. Digitalists use the term *self-incongruency* to include all the ways that non-being is negative with respect to itself.

The Abyss is Unthinkable. We try to understand the Abyss through subtraction: subtract physical things, subtract space and time, subtract all mathematical structures, and so on, until nothing remains. That which lies beyond all subtraction, like an asymptote, is the Abyss. It is approached only through the *via negativa*, the way of negation. Ultimately, this includes the negation of negation itself. So any effort to comprehend the Abyss ends with the comprehension of being-itself. Heidegger (1929) says we experience the Abyss (the nothing) in anxiety. This is a kind of indefinite fear, and it's indefiniteness is supposed to represent the Abyss. Anxiety is not merely annoying, but can grow into full terror, existential dread. This is the fear of more than merely death, it is the fear of your own total non-existence. However, it is arguable that to experience anything is to experience its *presence*. Since the Abyss has no presence, it is not possible to experience the Abyss. Anxiety, terror, and horror, are experiences of the *shadow* of being-itself, that is, matter.

4. Materiality and Evil



The Existence of the Good. The *Directionality Argument* shows that it is *for the best* that non-being negates itself. It goes like this: (1) Non-being negates itself. (2) But the negative of the negative is the positive. (3) Therefore, the self-negation of non-being moves from the negative to the positive. (4) Since this movement goes from the negative to the positive, it goes in a positive direction. (5) Consequently, this movement is for the best. (6) But non-being is absolutely negative; and its self-negation is absolute negation; hence the self-negation of non-being is absolutely positive. It is absolutely for the best. (7) Hence that self-negation points towards the absolute best. The best is what Plato referred to as *the Good* (*Republic*, 506-518d). The self-negation of non-being points to the Good. (8) But if the Good does not exist, then the self-negation of non-being cannot point to it. The pointing of this self-negation is equivalent to the existence of the Good. Therefore, the Good exists. But this pointing of the self-negation of non-being is not identical with the self-negation of non-being. Hence it is not identical with being-itself. This pointing absolutely surpasses being-itself, so that the Good surpasses being-itself. Being-itself points to the Good. The Good transcends the being of the beings. The Good is the target and the climax of the self-negation of non-being. The self-negation of non-being directly entails the existence of the Good as the finality or *telos* of existence. The Good exists eternally. It is always possible to *honor* the Good.

Evil is Privation of the Good.. Plotinus has a *privative* definition of evil (*Enneads* (E), 1.8.5, 2.4.5-15).[5] To define something by privation is to define it by absence. Just as darkness is the privation of light, and silence is the privation of sound, so evil is the absence of good. Since Plotinus identifies being-itself (the One) with the Good, and evil with the privation of the Good, he infers that non-being is evil. For Plotinus, the privation of being is evil (E 1.8.3.4-12).[6] But this evil is not moral – it is *logical*. Thus Plotinus ends up with a dualism. But this dualism, like all dualisms, is false. It would be wrong to say that non-being is the privation of being-itself. That would make non-being logically depend on being-itself; but being-itself (which is the self-negation of non-being) logically depends on non-being. Being-itself is not the Good; likewise, non-being is not evil. Fortunately, we can reject the Plotinian dualism while still preserving the Plotinian idea that evil is privation of the Good.

The Distortion of Positive Direction. The self-negation of non-being points to the Good; it generates a motion which directs itself towards the Good. This motion is the productive power of being-itself. Being-itself generates a self-surpassing power which rises up towards the Good. The activity of being-itself is for the best. The self-surpassing power, oriented towards the Good, is directed towards the best. Since evil is the privation of the Good, evil is the privation of this direction towards the Good. It is the distortion of this directedness, which shifts it away from the Good. But shifting it away from the Good does not entail shifting it towards something else. There is nothing else for it to be shifted towards. Shifting this self-surpassing power away from the Good means introducing self-negation into its direction. The self-negation of its direction is turbulence, distortion, perversion, error, mutilation, chaos. No longer focused on the Good, the self-surpassing power trips itself up.

[5]The writings of Plotinus are collected in the *Enneads*. I abbreviate the *Enneads* as E. So E 1.2.3.4-5 means the First Ennead, Second Tractate, Third Section, Lines four to five.

[6]Plotinus often equates matter and evil with a shadow of existence (E 1.8.3.5-15, 2.9.14-16; see 1.8.5.5-15, 3.6.7.4-15). But matter is the privation of goodness. This privation is impairment; it participates in non-being. It belongs to the wild hunt.

Negative Origin and Positive Destination. The positive distinguishes itself from the negative through (and only through) motion. This distinction emerges from the direction of that motion, and, where there is direction, there is both *direction towards* and there is *direction away from*. On the one hand, there is the Good because the self-negation of non-being moves towards the best. On the other hand, there is evil because the self-negation of non-being moves away from the best. A motion has a direction both because of its destination and its origin. On the one hand, the motion of being-itself has its destination in the Good. On the other hand, the motion of being-itself has its origin in non-being. Both the origin and the destination remain equally active in that motion.

Evil Emerges from Conflicts among Goods. Since non-being remains active in the motion of being-itself towards the Good, self-negation emerges within the direction of the self-surpassing power, and this self-negation is its internal self-conflict. This self-conflict pits the self-surpassing power against itself, so that it breaks up and disperses itself into fragments, into multiple beams of light, beams which struggle against each other. Through this self-conflict, the beings among beings emerge. They emerge through mutual negation: this being *is not* that being, and vice versa. This mutual negation, this mutual antagonism, pits beings against beings. Hence the privation of the good (that is, evil) emerges as conflicts between the goods of particular beings (E 3.2.17, 4.4.32).

Shadow and the Wild Hunt. This privation is the shadow of being-itself. Since any being is not being-itself, the shadow appears *before* beings. Since this being is not that being, the shadow appears *within* the beings, since each being generates the negation of the other out of itself. Likewise the shadow appears *between* the beings, as the gap which separates them. Consequently, all the beings participate in their own ways in the shadow; they participate in their own self-negation; they contain wild disruption (E 6.4.15.18-40). All beings either have conflicts among their parts, or conflict with rival wholes. They become bound to the shadow by the distortions and perversions of their own natures. Thus bound, they turn into shadows, and they ride with the *wild hunt* towards oblivion. They may be dragged into their own self-destruction, into the Abyss, drowned in non-being. Thus all the beings among beings impaired both in their self-relations and their relations with others. They contain matter in themselves and for others.

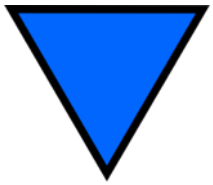
Greater Goods. While conflicts within and between beings emerge from the origin of their directionality in non-being, those beings are also directed towards the Good. From that directionality towards the Good, there emerges the *Greater Good Principle:* from the (evil) conflicts among the goods, there emerges greater good. The violent struggle between organisms drives the evolution of more valuable forms of life. By rising towards their own suns, the trees all cast shadows on each other. By rising ever higher towards its sun, every tree surpasses and redeems every shadow cast upon it.

Matter. For Plotinus, the privation of goodness is *matter* (E 1.8.5.5-15, 2.4.14-16, 3.6.7.4-15). Matter is the privation of goodness; but that privation is evil; so matter is evil. However, *matter is not physical stuff.* Matter is *impairment*. Although matter is not the same as nothingness, its privative definition means that it participates in the negativity of nothingness. It is the image of the darkness of non-being, and, as such, it is shadow. We experience it in noise, interference, randomness, error, conflict. Since matter participates in the negativity of non-being, it also participates in its self-negation. Hence the impairment of matter impairs itself. This means that the distortive power of matter weakens as the beings rise higher towards the goods. All the beings

participate in matter, and are made turbulent by it. They participate in matter because they are surpassable, and matter is surpassability regarded negatively. Hence the unsurpassable objects, that is, the transcendental stars, do not participate in matter. They are at the rank of the Good, they are avatars of the Good. The stars escape entirely from the shadow. They escape because they are unsurpassably perfect; they transcend all negativity.

5. The Oceanic Abyss

According to our reasoning so far, the Zero is basic, it is foundational. Smith (1988) says that holiness is extremity. The Zero is extreme; so the Zero is *negatively holy*. But the Zero is not like solid ground. Since the Zero is non-being, if you were to step into it, you would sink. Non-being has always been associated with the *Abyss*, with that emptiness into which you might fall and disintegrate, or in which you might drown and dissolve. The Zero is the Abyss of nothingness. When the modern pagan writer Starhawk presents her creation myth, she talks about "the abyss of the outer darkness" (1999: 41). The Abyss is darkness, silence, coldness; it is the most ancient horror.



One classical symbol for this dark Abyss is *water*; hence water symbolizes non-being.[7] The Zero is a deep Abyss; the Abyss is the ocean. The Abyss is an *elemental power*. The elemental powers are the basic powers, and water is the most basic. An upside-down triangle symbolizes water. Ocean waves depict the Abyss of non-being. This is the zeroth part of the pagan image. Thus we have summoned water into our circle of reasoning.

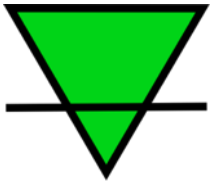
As pure non-being, the Abyss does not exist. By contrast, among the existing things, there are many animals. Among the animals, some are humans, while others are functionally superior to humans. Digitalists say *deities are superhuman animals*. Since the Abyss is not an animal, the Abyss is not a deity; hence it is not an evil deity.[8] Although the Abyss is holy, the Abyss is not divine. Since all persons are at least humans, the Abyss is not a person. Likewise the Abyss is not the underworld from some religious mythology; since it is not a place, it is not an evil place.

[7]The oldest Egyptian origin myth begins with a watery abyss.

[8]The abyss is not the Zoroastrian Angra Mainyu (Ahriman); it is not the Devil or Satan. Those are beings in theistic mythologies. But digitalism rejects all theistic mythology.

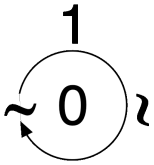
3. Earth: The Ground of Being

1. The One is Being-Itself



Being-Itself. The Zero negates its own negativity. Since the negative of the negative is the positive, the self-negation of non-being is *being*. However, just as non-being is not the absence of this or that being, so its self-negation is not the presence of this or that being. What emerges from the self-negation of non-being is *being-itself*.[9] Since being-itself is not this or that being, it is not any existing thing. Numbers and rocks exist; but being-itself is neither a number nor a rock. Nevertheless, all existing things depend on being-itself for their existence. For if being-itself does not exist, then no things exist. Thus being-itself is the source of the existence of the beings.

The One is Being-Itself. Plato says "If there is no One, there is nothing at all" (*Parmenides*, 165e-166b). All beings emerge from the One. Four arguments show that the One is being-itself: (1) The Zero is non-being. But in logic the negation of the Zero is the One. Just as non-being negates itself to make being-itself, so the Zero negates itself to make the One. Hence the One is being-itself. (2) Being-itself is what all beings have in common. Since every being is a unit, and every unit is a being, being-itself and unity are the same. But unity is the One. Therefore, being-itself is the One. (3) Plotinus defines the One as the source of the existence of all the beings. He writes of the One like this: "the ultimate source of every thing is not a thing but is distinct from all things: it is not a member of the totality of beings, but the origin of their being." (E 5.3.11.20-25; see 5.2.1.1-2).[10] But being-itself is that source. And since there cannot be two such sources (E 5.4.1.15-17), being-itself is identical with the One. (4) The One is the power of the Abyss turned into existence (E 5.2.1.5-10). It is that power which makes beings be (E 5.1.6). But the self-negation of non-being is that power which makes beings be; that self-negation is being-itself; hence being-itself is that power which makes beings be. Therefore, being-itself is identical with the One.

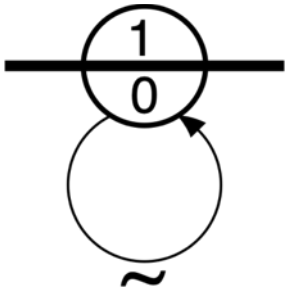


The Binary Digits Zero and One. Fast-forward to Leibniz (1646-1716). He was among the first to use the binary number system – he was an early digitalist. He used the digits 0 and 1 to illustrate the creation of the world from nothing. To commemorate his digital creation theory, he designed a medal that illustrated the progression of binary numbers. The motto on the medal was "To make all things from nothing, unity suffices" (Cajori, 1916: 564). And we can turn again to Peirce. Peirce said the self-negation of nothingness converts indeterminate possibility into determinate possibility (CP 6.220). For Peirce, a determinate possibility is some property or quality: "Thus the zero of bare possibility, by evolutionary logic, leapt into the unit of some quality" (CP

[9]Being-itself is the self-negation of nothing; but the self-negation of nothing is the self-creation of being-itself. It creates itself eternally *ex nihilo*. It pulls itself up out of nothingness by its own bootstraps; it is self-bootstrapping.

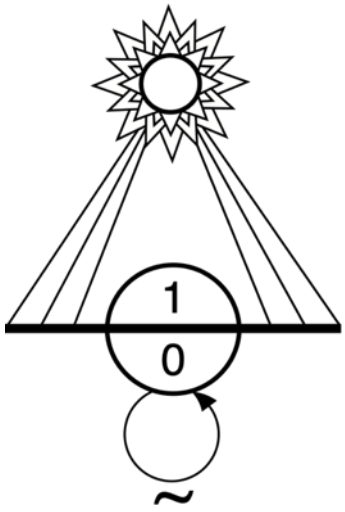
[10]Plotinus quotes are checked against MacKenna, Armstrong, and Gerson translations. For readability, the MacKenna translation is used unless otherwise noted.

6.220, 6.189-6.213). But what is this leap? The *Zero* of non-being leaps *out of itself* into the *One* of being. This leap out of itself is its self-negation.



Direction. Since the negativity of the Zero logically precedes the positivity of the One, the Zero is *less than* the One. So, the self-negation of the Zero is *greater than* the Zero. The self-negation of the Zero is the *self-surpassing* or *self-transcendence* of the Zero into the One; the Zero surpasses itself or transcends itself into the One. From the self-negation of non-being, there emerges self-surpassivity, which is self-surpassing power. The self-surpassing of the Zero into One defines the *direction of being*. It is illustrated by the glyph or sigil in which the 1 appears above the 0. If the Zero is the abysmal groundlessness (the *Ungrund*), then the One is the *ground of being*. The Figure on the right shows the One as the horizon or ground of being. This is the sunrise of the One over an oceanic horizon (E 5.5.8.1-10).

The One is Absolute Power. The self-surpassing power which emerges from the self-negation of non-being is the power of the One. Since the One is identical with this self-negation, this self-surpassing power *is* the One. Since the Zero is *absolute* non-being, the One is *absolutely* powerful. Its power surpasses the power needed to produce every being. Its power exceeds every degree of its power. To adopt a phrase from Hartshorne (1965: 28-32), the One is the *self-surpassing surpasser of all*. Since the One is prior to every being, it is the primary self-surpassing surpasser of all. Taking a term from Plotinus, any self-surpassing surpasser of all is a *hypostasis*. Hence the One is the *primary hypostasis*. A hypostasis is a mode of generativity. The most general hypostasis is the One, which generates the beings.



The One is not the Good. Many Platonists identify the One with the Good.[11] But Speusippus, who led the Academy after Plato, did not identify them.[12] Digitalists follow Speusippus. There are at least four reasons why the One is not the Good: (1) The first is that there's no clear reason to identify them (Jackson, 1967: 322; Mortley, 1976: 49; Gerson, 1994: 19-20). (2) The second is that they are distinct in many ways (Cornford, 1957: 131-4). On the one hand, the One is the source or beginning. Since *arche* means beginning in ancient Greek, the One is the *arche*. On the other hand, the Good is the finality or end. The people in the Myth of the Cave climb up the Divided Line towards the Good. So the Good is the goal at which things aim as they strive for self-perfection. Since *telos* means end in ancient Greek, the Good is the *telos*. But the *arche* and the *telos* are distinct. (3) The third reason is that the Good is usually portrayed as an abstract entity. But all abstract entities are brought into existence by the One. So if the Good is an abstract entity, then it is not the One. (4) The fourth is that things gain goodness as they gain complexity; but more complex things are further from the One; hence the Good is maximally distant from the One. For these four reasons, we separate the One and the Good, placing the One below nature as the earth, and the Good above it as the

[11] Plato allegedly identified the One with the Good (Aristotle, *Eudemian Ethics,* 1218a19-21; *Metaphysics,* 1091b13-15; Aristoxenus, *Principles of Harmony*, ii.30). Plotinus and Proclus identified the One with the Good. Digitalism denies that the One is the Good.

[12] Speusippus says the One is not the Good. See Aristotle *Metaphysics*, 1072b31, XIV.4-5. And see Iamblichus *On the General Science of Mathematics,* ch. 4.

sun. The earth is not identical with the sun. Between the earth and the sun, there is a *great chain of being*. Its higher links are ranks of greater beings.

2. The Ontic and the Ontological

The Argument from Resemblance. Plato provided an argument which motivates the thesis that being-itself is not any being. It is his *Argument from Resemblance* (*Republic*, 596a-b). Here is a summary: (1) Socrates is human and Glaucon is human. (2) Since Socrates and Glaucon are both human, they share some one thing in common, namely, their *humanity* or *humanness*. (3) But humanity is not Socrates; for if it were, then Socrates would be identical with Glaucon. Likewise humanity is not Glaucon. Therefore, *humanity* is neither Socrates nor Glaucon. (4) Consequently, the *humanity* they share in common is some distinct thing. It is the abstract essence of humanity, the property of being human, or the Platonic form of the human. Since you can run this argument for any humans, humanity is not a human.

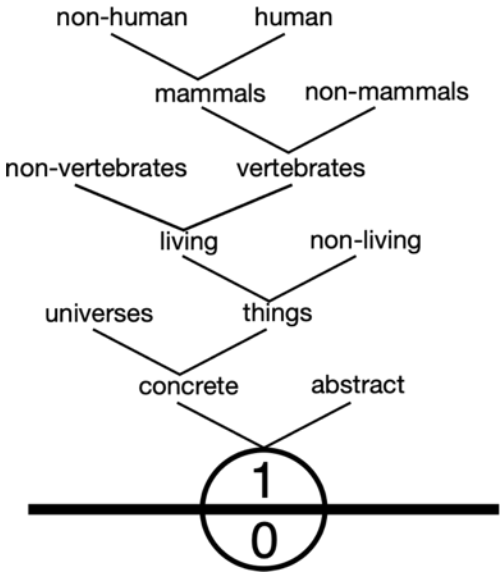
Predicates. The Argument from Resemblance applies to any *kind* of thing. So what are these kinds? Some kinds are defined by nouns (humans, animals, organisms, and so on). Others are defined by adjectives (hot things, square things, physical things, and so on). The words that define kinds are *predicates*. Most nouns, adjectives, verbs, and adverbs are predicates. To say that some *x* is a *woman*, or *x* is *happy*, or that *x runs*, or that *x runs quickly*, is to apply those predicates to the thing *x*. The predicates that specify kinds are always contrastive. Some beings are humans, others are not. Some beings are concrete, while others are abstract. Thus kinds of things are specified by predicates that distinguish these things from those things. Predicates that specify contrastive kinds of things are *ontic* predicates. When the Platonic Argument from Resemblance is applied to any ontic kind, it yields two results: (1) all beings in some kind share something in common; and (2) what they share in common is not a thing in that kind. Thus the property of being a number is not a number; life is not a living thing; and so on.

Applying the Argument from Resemblance to All Existing Things. Now consider *all the things that exist*, that is, the *beings*. These *existent* things contrast with the *non-existent* things (such as square circles, or the set of all sets). The *beings* denotes the most general ontic kind. The beings all resemble each other in exactly one way: they exist. Hence the Argument from Resemblance tells us that they all share something in common. This something is *beingness*, it is *being-itself* or *existence-itself*. Being-itself exists; for if it didn't exist, none of the beings that share it would exist. But the Argument also tells us that *being-itself* is not any being at all – it is not a being of any ontic kind. It is not even an abstract essence. Being-itself has no ontic properties and stands in no ontic relations. Since being-itself is the One, the One has no ontic properties and stands in no ontic relations.

The One does not Exist like Beings Exist. On the one hand, the Argument from Resemblance entails that something exists which is shared by all beings; thus being-itself exists. On the other hand, since being-itself is not a being, it looks like being-itself does not exist. So it looks like being-itself both exists and does not exist. The apparent contradiction is resolved by distinguishing between two ways of existing: the beings exist *ontically* while being-itself exists *ontologically*. The beings that exist ontically do not exist ontologically; but entities like being-itself exist ontologically but not ontically.

The One is Prior to All Ontic Distinctions. To say that the One exists ontologically means that ontic distinctions do not apply to it. Just as a mother exists *temporally before* her child, so the One exists *logically before* all ontic distinctions among beings. The child depends for its existence on the mother, but the mother does not depend on the child. Analogously, all ontic distinctions depend on the One, but the One does not depend on them. The concept of *priority* refers to this asymmetry: just as the mother is earlier than the child, so the One *is prior to* all ontic distinctions. For Plotinus, the One is prior to all ontic distinctions; it is prior to all predication (E 5.3.12-13, 5.5.6, 5.5.13, 6.7.38, 6.9.3, 6.9.5). Hence the One is prior to simplicity and complexity; it is prior to universality and particularity; it is prior to the abstract and the concrete. The many predicates spring from the One.

The Tree of Porphyry. Ancient thinkers portrayed these ontic predicates as sprouting up from the One like the branches of a tree, known as the *Tree of Porphyry*. Plotinus often uses the image of a tree: just as the one root of a tree branches into multiplicity, so the One unfolds into many beings (E 3.3.7.10-25, 3.8.10.10-20, 4.4.11.5-15, 6.8.15.34-8). As this Tree rises, its branches split into contrasting predicates: the abstract versus the concrete; the living versus the non-living; and so on. The Figure on the right shows the Tree of Porphyry, with being-itself, that is, the One, as the root.



The Tree of Porphyry has *one* root. As the root of this Tree, being-itself is free from all ontic determinations, and therefore from all ontic contrasts. Since it is free from those contrasts, being-itself is free from all impairments. By existing ontologically, being-itself is *holy*. Digitalists agree with Smith (1988) when he says that being-itself is *metaphysically holy*. But no ontic beings are holy. Since the Tree has one root, digitalism is ultimately a kind of monism. Digitalists reject all forms of substance dualism. The ontic split between abstract and concrete, for example, does not make two roots for the tree. The abstract manifests the concrete. We reject all abstract-concrete dualisms. We reject all mind-body dualisms.[13]

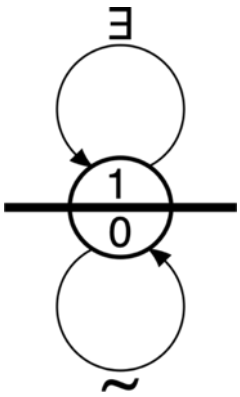
3. The Logical Analysis of Being-Itself

Some philosophers object that it is absurd to talk about anything that is prior to the logic of predication. To talk about something means to apply predicates to it! So they think it is foolish to talk about being-itself (McLendon, 1960; Fenton, 1965). If they are right, then our reasoning in ritual fails. We reply to this objection by turning to modern logic, which is the *predicate calculus*. Fortunately, we can avoid technicalities. Consider the statement "Socrates exists". It gets translated into the predicate calculus like this: "Socrates exists" means that "There exists some x such that x is Socrates", which means that (there exists x)(x = Socrates). Using the backwards E to symbolize "there exists", we get ($\exists x$)(x = Socrates). In the expression ($\exists x$), the $\exists$ is the *existential quantifier*, the variable x is said to be *bound* to that quantifier, and Socrates is the *value* of that variable. Hence Socrates is *the*

[13]Digitalism rejects all that depends on mind-body dualism. It rejects telepathy, telekinesis, clairvoyance, extra-sensory perception, out-of-body experiences, near-death experiences, astral projection, astral bodies, past-life recall, seances, mediums, spiritism, and so on. These are superstitions.

value of a bound variable. To say that *Socrates exists* means that Socrates is the value of a variable that is bound to the existential quantifier.

More generally, to say that some being exists means that it is the value of a variable that is bound to the existential quantifier. This is the logic of being. The American philosopher Willard Quine formalized this in his slogan that *to be is to be the value of a bound variable* (Quine, 1948). This means that variables like x refer to *beings*, that is, to existing objects or things. But the variable x is not the only symbol that appears in existence statements like $(\exists x)(x = \text{Socrates})$. The existential quantifier $\exists$ also appears in such statements. It refers to the *existence* of the beings which are the values of its bound variables. It refers to that which comes before all beings, to that on which all beings depend. It refers to being-itself, that is, to the One. The Quinean slogan is not an ontic statement about *this being* or *that being*. It is an ontological statement about being-itself. Logic depends on this statement. So it is not foolish to talk about being-itself. On the contrary, logic assumes that we can talk about it. And since being-itself is a logical concept, it is also a scientific concept. But the symbol $\exists$ by itself has no sense; it produces sense.

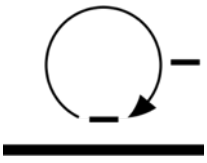


On our interpretation of the Quinean slogan, the existential quantifier *gives* being to the values of the variables bound to it. The $\exists$ grants being to the x. The existential quantifier symbolizes being-itself, that is, the One. Hence $(\exists x)(x = \text{Socrates})$ is equivalent to (the One generates x)$(x = \text{Socrates})$. The $\exists$ is the self-negation of non-being. This is indicated by the glyph or sigil with the $\exists$ above the self-negating tilde. Being-itself gives being to the beings. But how does it do this? This giving is logical. To understand this giving, we need to turn back to the thesis that being-itself is the self-negation of non-being.

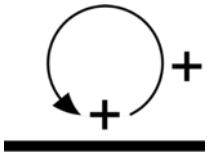
4. The Two Ways of Negation

The Two Ways of Negation. Non-being negates itself. There are two ways to negate something. The *first way of negation* minimizes it: to negate evil is to minimize it. The *second way of negation* maximizes its opposite: to negate evil is to maximize goodness. Since being-itself is the self-negation of non-being, being-itself works according to both ways of negation. But non-being is self-incongruency. On the one hand, being-itself *minimizes* its self-incongruency; on the other hand, being-itself *maximizes* its self-congruency. We are in ritual; we make two sigils:

The First Way of Negation. According to *the first way of negation*, to negate something is to minimize it. Thus being-itself minimizes the negativity of non-being. Since the negativity of non-being is its self-incongruency, and the self-negation of non-being is being-itself, *being-itself minimizes its self-incongruency*. Since incongruency includes inconsistency, being-itself minimizes the inconsistencies among the things that depend on it, that is, among the beings. But how does it do that? By denying existence to all self-inconsistent beings. Consider the Russell Set, the set of all self-excluding sets. Either it is a member of itself or not. If it is not a member of itself, then it is self-excluding; so, it is a member of itself. If it is a member of itself, then it is self-excluding; so, it is not a member of itself. The Russell Set is self-inconsistent. Being-itself denies existence to it: it does not exist. Consider the webpage which lists all webpages which do not link to themselves (Pullum, 2019). It resembles the Russell Set. Being-itself rejects it: no such webpage exists. Being-itself successfully minimizes self-inconsistency: no existing thing is inconsistent with itself.



The Second Way of Negation. According to *the second way of negation*, to negate something is to maximize its opposite; the negation of the negative creates the positive; to negate hatred is to maximize love. Thus being-itself maximizes the opposite of the negativity of non-being. Since that negativity is self-incongruency, its opposite is *self-congruency*. Since being-itself is the self-negation of that self-incongruency, this second way of negativity entails that being-itself *maximizes its self-congruency*. Congruency is positive logical value; it includes every logical excellence. It resembles lawful agreement. Lawful agreements are systems of sentences (more abstractly, systems of propositions). Just as agreements vary in scope from narrow to broad, so congruencies vary in scope from small to great. There are many degrees of congruency. Every degree includes consistency. But greater degrees of congruency are more comprehensive than lesser degrees. They are larger policies. So how does being-itself maximize its self-congruency? By giving existence to the greatest consistently definable system of beings.



The Two Ways of Negation are Two Normative Policies. Since non-being negates itself, being-itself affirms itself. Its self-affirmation is its *power*. Being-itself affirms itself through the two ways of negation. But any way that being-itself affirms itself makes some *policy* which being-itself adopts towards itself. Each way of negation is a policy of being-itself; it an aspect of its self-affirmation. Here are the two policies:

Negative Policy. The *negative policy of being-itself* is that being-itself minimizes self-incongruency. The first way of negation defines this negative policy. This is an ontological policy rather than an ontic policy. For if it were merely ontic, then it would be a policy for *these* but not *those* beings. But then being-itself would not be the ground of *all* beings. Hence this policy is not merely ontic; on the contrary, it is ontological. It holds for all beings precisely because they receive their existence from being-itself.

Positive Policy. The *positive policy of being-itself* is that being-itself maximizes self-congruency. The second way of negation defines this positive policy. This is an ontological policy rather than an ontic policy. For if it were merely ontic, then it would be a policy for *these* but not *those* beings. But then being-itself would not be the ground of *all* beings. Hence this policy is not merely ontic; on the contrary, it is an ontological policy. It holds for all beings precisely because they receive their existence from being-itself.

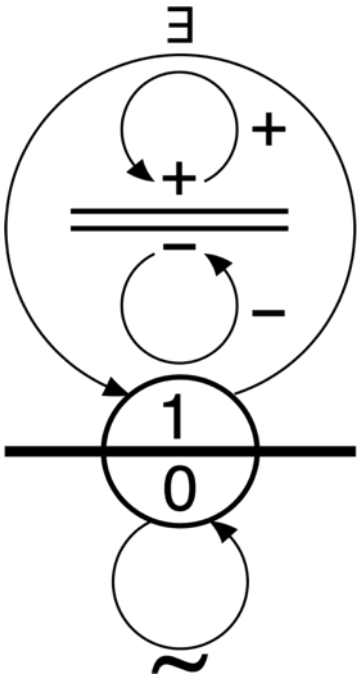
The Power of the One is a Normative Force. According to the Directionality Argument, the self-negation of non-being is for the best; it aims at the Good. And since the self-negation of non-being is the self-affirmation of being-itself, that self-affirmation is for the best. The self-affirmation of being-itself is a power which aims at the Good. But a power which aims in some direction is a *force*, and a power which aims at the best is a *normative force*. So the self-affirmation of being-itself has normative force. Since all the beings are emanated by the self-affirmation of being-itself, all the beings are borne into existence by a normative force. Any normative force has both positive and negative polarities. On the one hand, its negative polarity establishes *prohibitions*; on the other hand, its positive polarity establishes *obligations*. But the logic of prohibition and obligation is deontic logic. Hence the congruency among the beings is both logical (involving truth) and deontological or normative (involving goodness). Here's how it works:

Ontological Prohibitions. The negative policy of being-itself defines the *ontological prohibitions* which hold for all beings. Thus being-itself *forbids*

any being from adopting any policy which introduces self-incongruency. By definition, if something is forbidden from doing something, then it *ought not* to do it (or *should not* do it). So every being should not introduce any incongruencies among beings.

Ontological Obligations. The positive policy of being-itself defines the *ontological obligations* which hold for all beings. Thus being-itself *obligates* every being to follow policies which maximize self-congruency. By definition, if any being is obligated to do something, then it *ought to* do it (or *should* do it). So every being should maximize self-congruency.

The Two Policies are Aspects of Self-Affirmation. The self-negation of non-being is identical with the self-affirmation of being-itself. Nevertheless, those two self-relations point in opposed directions. The self-negation of being-itself is below the horizon of being, while the self-affirmation of being-itself is above that horizon. The two policies of being-itself are two aspects of its self-affirmation. Those two policies emerge as being-itself produces the beings. They are two policies through which the existential quantifier regulates itself. The Figure on the right shows how these two policies emerge as self-relations of the existential quantifier. They are imitations or echoes of the two prior circular relations (emerging from the Zero and the One).



The self-congruency of the One is a purely positive logical self-relation; it is *reflexivity*. Since that self-congruency emerges from the Zero, which is less than all things, it originally expresses itself as the least self-congruency. Since the self-congruency of the One is self-maximizing, it increases itself from the least self-congruency (its minimum) to the greatest self-congruency (its maximum). It starts with the least self-congruency and it increases itself through a series of ever greater self-congruencies. These self-congruencies grow by accumulating logically positive values. They grow through all consistently definable degrees of logical greatness or excellence. They grow until any further increase produces some inconsistency. So the One generates a series of self-surpassing self-congruencies. The *expansion* of self-congruency is symbolized by a radiant sigil. But the self-congruencies themselves are like rings emanating from the One. They rise up into the sky above the One. Every congruency of the One with itself is a system of definitions to which the One gives existence. Perl (1997) says the One is the act of pure giving. And since the One aims at the Good, its act of pure giving is an act of pure *blessing*. The self-affirmation of the One is *grace*.

5. The Shadow of the One

Shadow is Smoke. The One is the self-negation of nothing. But that double negation includes negativity. Since the One is defined by this double negativity, the One is bound to it, as to its *shadow*. The One is haunted by it, as by its own ghost. This shadow is the privation of being-itself. Since every being is *not* being-itself, and since every being is *not* any other being, every being participates in negativity. Consequently, the shadow has a right to every being. It surrounds them like smoke surrounds fire, smoke which consumes that which is burnt, smoke which vanishes into the darkness of the Abyss.

Shadow is Matter. The One is pure surpassivity; it is self-surpassivity. But since that surpassivity is defined in terms of negation, the One is bound to its privation, which is its shadow. The shadow of the One is surpassivity regarded negatively: to be surpassable is to be less than something greater; it is to be finished, sacrificed, and left behind. Since matter is also surpassivity regarded negatively, the shadow of the One is matter. Since the shadow of the

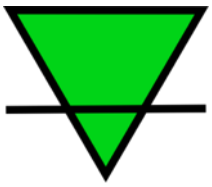
One is the privation of that which is not any being among beings, the shadow is not any being among beings. The shadow is ontological deprivation.

Shadow is Meaninglessness. Since the shadow is the negativity dragged along with the self-surpassivity of being-itself, the shadow is entangled with the negative aspect of the One, which is its negative policy. That policy minimizes incongruities. It minimizes them by driving them away from the One (from the expanding system of beings) and outwards into shadow. When the negative policy denies existence to the self-contradictory Russell Set, that is an act of ontic deprivation, which drives the definition of that set out into shadow. Of course, the Russell Set itself does not exist in shadow, because there is no such set; all that exists in shadow is its definition. Shadow is the wasteland of logical failure, paradox, absurdity, and meaninglessness. The wild hunt rides in shadow. But the shadow of the One is not an aspect of the One; it is an anti-aspect of the One. The One drags its shadow upwards with itself as it rises towards the Good; but the shadow does not reach the stars.

Shadow Howls in Pain. The negativity of the shadow is analogous to pain, pure pain, pain which hurts itself. Since the shadow hurts itself, it *howls* with pain. The Abyss speaks in and through that howling, but that howling is an incomprehensible speech. The howling shadow is the growling, screaming voice of the Abyss, which says nothing meaningful. The shadow is fear, terror, horror. Its garbled speech expresses those emotions. Since the shadow hurts itself, it therefore injures and sickens and weakens itself. Since the shadow weakens itself, it cannot keep up with the One. Since the shadow requires light, and the One shines with light, the One is always ahead of its shadow. Its shadow is its parasite, which follows along behind it. The surpassivity of the One always moves towards something greater. But any movement towards something greater is hope. The One is hope; being-itself is hope for the Good. The One gives voice to hope; but that voice is beautiful music.

6. The Earth Emerges from the Sea

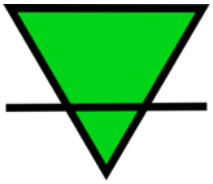
Being-itself is the self-negation of non-being. However, if we think of that self-negation more poetically, as an activity, then we can say being-itself emerges from the Abyss of non-being through that activity of self-negation. Being-itself emerges from the Abyss of non-being, like an island from the sea. Just as water symbolizes the Abyss of non-being, so *earth* symbolizes being-itself. An upside-down triangle with a crossed line makes the sigil for earth. Figure 3.3 illustrates the emergence of being-itself like an island rising from the sea. This is the first part of the pagan image. Through its association with earth, we refer to being-itself as an *elemental power*. But being-itself is the One; so the One is symbolized by earth. Thus we welcome earth into our circle of reasoning. Here some (but not necessarily all) digitalists will want to give thanks to being-itself: “Holy earth, we thank you for your emergence from the sea.” Others may want to perform rituals involving soil, sand, or rocks. What you do is up to you.



When Starhawk tells her creation myth, she begins with an Ultimate Source. She personifies this Source as a Goddess, and says the Goddess "floated in the abyss of the outer darkness" (1999: 41). So the island of earth, floating in the abysmal ocean, corresponds to her Goddess. Since pagans often associate our planet earth with some goddess, they may want to say that earth is female. On this point, digitalists disagree. No sexual distinctions have emerged in our circle of reasoning, no reproductive work is being done. Like all elements, earth has no gender; hence earth is neither male nor female. Moreover, since deities are superhuman animals, the elements are not deities; hence elemental earth is neither any god nor any goddess. Our planet (*our* earth) is not the element of earth. Of course, our earth, or a handful of earth, can be used as a concrete symbol for elemental earth, and thus for being-itself, that is, the One.

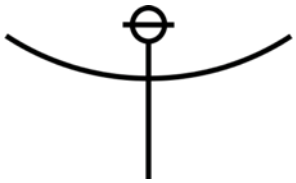
4. The Priority of the One

1. The Lowest One



The One is in the Earth. As the earth, the One is the ground of being. It is that ground above which all beings rise and take their places on the great chain of being. The One is below and beneath every being; it does not exist over and above any being. The One is less than every being; it is not greater than any being. The One is less than the least being; it is not the supreme being (it is not a being at all). Our chant for the One goes like this:

> In the beginning is the One,
> and the One is the earth,
> and the One is *in* the earth.



The One is in Every Thing. The One is the lowest power; it is not a higher power. The power of the One is *power under* and *power within*. It is supportive and expressive power. The One has no *power over* any beings. It does not dominate, coerce, or oppress. The One is not transcendental; on the contrary, all beings transcend it. Closely paraphrasing Johnston (2009: 116), digitalists say *the One is the outpouring of being-itself by way of its exemplification in ordinary beings for the sake of the Good.* By generating the beings, the One honors the Good. The existence of any being (ontic existence) requires unity (E 5.6.2, 6.6.13, 6.9.1). Since every being is a unit, every being contains a One of its own (E 3.8.10). By giving existence to some being, the One occupies its deepest ontological depth; it dwells in the *logical core* of every being. The One is *immanent* in all things. The One exists *within* things; it does not exist beyond or outside of any thing. The One dwells in the logical core of your body. The One in every being drives that being to surpass itself into greater beings.

Arousing the One in your Body. You can *arouse* or *invoke* the One from within yourself. When you invoke the One, you do not call to something outside of yourself; you call only on your own existence. You raise the One up from its depths in your body. But this depth includes the entire history of your body. The practices that arouse the One in our bodies excite an *arrow of power* in your body. This arrow rises from its simple root in the One, through all the beings in the evolutionary history of your body, through all the beings in the evolutionary future of your body, to its climax in the Good. You arouse the One in your body by rituals that raise energy for magic, by ecstatic dancing, by having sex or having orgasms, by long-distance running, by climbing mountains, and so on. By means of other spiritual practices, you can arouse the One in your body so that you have mystical experiences. Taking psychedelics can produce mystical experiences. Digitalists permit the use of psychedelics in religious contexts, as long as those uses are both ethical and legal. During mystical ecstasy, the One in your body *bears witness* to the Good. It speaks in and through your body with a soundless voice that says “I am here” to the Good (Masahiro, 2021). Many other practices enable the One in your body to bear witness to the Good.

2. The One is not a Divine Being

Deities. A *deity* is a divine being, and thus is a being among beings. Deities include gods and goddesses, but also lesser divine beings. A deity is always the value of some variable bound to the existential quantifier: $(\exists x)(x$ is a deity). Since deities are divine beings, and the One is not any being at all, the One is not a divine being; hence the One is not a deity. A *theonym* is a symbol (such as a

word, picture, sound, or statue) that refers to some allegedly divine being. Since Athena is a goddess, the name "Athena" is a theonym; a statue of Athena is also a theonym. Since Thor is a god, a painting of Thor is a theonym. However, since the One is not a deity, the phrase "the One" is not a theonym.

Theism. A *theist* says a deity is a bodiless superhuman person. Persons are rational moral agents. Since rationality, morality, and agency are ontic properties, and since the One lacks all ontic properties, the One is not a person, and it is not personal in any way. Bodiless superhuman persons are usually thought of as immaterial minds. However, the One is not a mind; it lacks all psychological features. It has no rationality; no intentionality; no knowledge; no emotions; no consciousness. The One has no moral relations with any things. The One has no agency. Again, the One is not a theistic deity. Since the One is not a theistic deity, its existence is consistent with atheism.

Monotheism. A *monotheist* says there exists exactly one theistic deity. Monotheists traditionally refer to their deity using the theonym "God". Most Abrahamists (e.g. Jews, Christians, or Muslims) are monotheists. Monotheists traditionally say God is a maximally perfect person. Again, since the One is not a person, *the One is not God*. Moreover, as the first entity to emerge from non-being, the One has minimal perfection. As the root of the tree of beings, it is less perfect than any being; it is the lowest of the low. Since the One is not a being, and since it is not maximally perfect, yet again *the One is not God*. As pagans, digitalists deny the existence of God. Along with Nietzsche, we say there are *many gods, and many goddesses, but no God* (*Zarathustra*, III: 52/2). It is a conceptual error to say that the One is any sort of theistic God.

Escaping from Monotheism. Although the One is not any sort of theistic God, it is possible to use the theonym "God" non-theistically. Everybody is free to use words however they want; hence somebody might use the term "God" non-theistically to refer to the One. But why God? Why not *Atum*? Why not *Gaia*? Why not *Ymir*? Why not *the Goddess*? To use the theonym "God", whether theistically or non-theistically, is to try to bind the One to the dominant religious culture of the West. Since digitalism (obviously) presents an alternative to that culture, to use the theonym "God" (whether theistically or not) to refer to the One is to commit an immoral act of religious disrespect, colonization, and domination. Anyone who says the One is God in any sense at all commits a sacrilegious act of conceptual and cultural violence against the One. They turn away from the Good and towards the Abyss. They corrupt or pervert the One by turning it into an idol.[14] Such people try to bind the One to an idol because they themselves are chained to an idol. They are lost in the wild hunt, entangled with shadow. For those enslaved by monotheistic masters, we offer the *vegvisir*, the great way-finder, and we chant the First Merseburg Charm:[15]

[14]Proclus wrote "that the One is God follows from its identity with the Good: for the Good is identical with God, God being that which is beyond all things and to which all things aspire" (1963: prop. 113). But the One is not the Good; hence Proclus perverts the One. Tillich says "God is love. And, since God is being-itself, one must say being-itself is love" (1951: 279). And he says "God is perfect because he transcends essence and existence" (1957: 34). But being-itself (that is, the One) is not love, is not perfect, and does not transcend anything; hence Tillich perverts the One. Johnston (2009) identifies God with the Highest One, which is maximally perfect. But the One is not higher than anything, nor is it perfect in any way. Johnston perverts the One.

[15]The *idisi* are divine women like valkyries or norns. But they are probably not goddesses. For digitalists, the *idisi* are the salvific powers of nature, which aim at the Good.

Once sat *idisi*,
They sat here, then there.
Some fastened bonds,
Some impeded an army
Some unraveled fetters.
Escape the bonds,
Flee the enemy!

Prayers. Since theists say deities are persons, and persons talk with persons, theistic religions typically include practices involving talking to deities. These are prayers. Petitionary prayers ask some divine person for help. Since the One is not a person, it makes no sense to ask it for anything. It cannot hear you and it does not care about you. Contemplative prayers try to focus your attention on some divine being. Since the One is not a being at all, you cannot focus your attention on it. It is foolish to try to pray to the One.

Worship. Worship expresses social submission to some superior person. Since theists think of deities as superhuman persons, theism often includes worshipping deities. Since the One is not a person, it makes no sense to worship it. Moreover, digitalists say that worship is always morally wrong. Worship always involves fealty, servility, or bowing-down to an alien will. It turns you into a slave or a beggar. Since it is morally wrong to destroy your own autonomy, it is wrong to worship anything. Through worship you contradict your own personhood. While monotheists say that idolatry is worshipping the wrong god (a false god), digitalists say that *all worship is idolatrous*. For digitalists, worship is ethically forbidden: do not worship the One; do not worship anything.

Sacrifices. Since theistic deities are persons, and persons establish exchange relations with each other, theism often includes such exchanges. These are *do-ut-des* practices between humans and their deities. The phrase *do-ut-des* means "I give that you might give". Thus we give gifts to the deities so they will give gifts to us. For example, a soldier might pray to Ares (the Olympian god of war) like this: "If you bring me safely out of battle, I will sacrifice a sheep to you". However, since the One is not a person, it is impossible to enter into any *do-ut-des* relation with it. And since the One is pure giving, it is impossible to give anything to it. It is foolish to offer any sacrifices to the One. However, since the One offers all things as sacrifices to the Good, you can simulate its sacrificial activity. And you can ritually express gratitude to the One.

3. The Wiccan Ultimate Source

Wicca was founded in Britain in the mid twentieth century by Gerald Gardner. Although there are many branches of Wicca, I will focus on the traditions that stay close to Gardner.[16] Here I will just say "Wicca" for these traditions. Digitalism is distinct from Wicca. On the one hand, many digitalists will not be Wiccans; on the other hand, many Wiccans will not be digitalists. However, since both Wicca and digitalism emerge from Platonism, it is worth looking at their structural similarities.

[16]Boehme greatly influenced Franz Hartmann, who wrote *The Life and Doctrines of Jacob Boehme* (1891). Hartmann helped found the *Ordo Templi Orientis,* which Gardner later led. By naturalizing (and thus paganizing) Wicca, digitalism frees it from esotericism.

When he was developing Wicca, Gardner was especially influenced by the Roman thinker Sallustius. Sallustius, writing in the mid 300s, was trying to revive Roman paganism. In his very short book *On the Gods and the World* (GW, ch. 5), Sallustius posits the One as the first cause of all things. Gardner says Wiccans recognize that "there must be some great 'Prime Mover,' some Supreme Deity" (1959: 17). Although Wiccans have many names for this "Prime Mover", the Farrars refer to it as the *Ultimate Source*. We will use this name here. After discussing Sallustius's *On the Gods and the World*, Gardner says that it is a general statement of the Wiccan creed (1959: 174). Accordingly, the One of Sallustius is a counterpart of the Wiccan Ultimate Source.

To see some similarities between the One and the Wiccan Ultimate Source, it will be useful to look at some descriptions of that Source from popular Wiccan writers (Farrar & Farrar, 1981: 49, 154; Cunningham, 1988: 9; Silver Elder, 2011: 9, 18; Cuhulain, 2011: 14). As described by these writers, the Wiccan Ultimate Source has several salient features. It is hidden or unmanifest. Most Wiccans portray the Ultimate Source as mindless, impersonal, and genderless. It is an ultimate productive power or universal energy. It produces the existence of all things. It manifests itself into things. The Ultimate Source is not transcendent; on the contrary, it is immanent. It makes itself present in the center of every thing; it is the logical core of all beings. It is not an object of prayer, worship, or sacrifice. However, it can be invoked in ritual and its power can be aroused in our bodies. On all these points, the Wiccan Source resembles the One.

When the modern pagan writer Starhawk presents her creation myth, she talks about an Ultimate Source. Starhawk portrays this Source as a Goddess (1999: 41). Even Plotinus says that the One generates the Many through pregnancy and birth (E 3.8.3). However, Starhawk correctly recognizes that she is just projecting an arbitrary sexual attribute onto the Source. She says "sex has not yet come into being" (1999: 48). She is correct. As far as we know, sexual categories apply only to some (and not all) animals on our earth. Sex comes into existence only very late in the evolution of life on earth. Putting sex first is an error. So Starhawk correctly points out that, at the origin of all things, "there is no separation, no division, nothing but the primal unity" (1999: 48). But then she should have described the primal unity as sexless and genderless.

The Ultimate Source, like the One, is neither male nor female. Likewise it has no racial characteristics. It has no animality at all. The Ultimate Source, existing before all division, has no ontic distinctions that separate *these beings* from *those beings*. So the Ultimate Source is not a *being among beings*. It does not exist ontically. By referring to that Source as a primal unity, Starhawk points to the Platonic One. She says "The world of separate things is the reflection of the One; the One is the reflection of the world of separate things" (1999: 49). So we should think about the One. The role of the One in Starhawk's creation myth resembles its role in digitalism. The One appears in the Wiccan creation story presented by Cunningham (2004: 123). He starts by saying "Before time was, there was The One; The One was all, and all was The One". He identifies the One with our universe in its primal condition before its organization.

The Ultimate Source plays the same role in Wicca that the One plays in digitalism. They are counterparts. Although they are not identical, their analogous roles allow Wiccans and digitalists to share ideas and practices. For example, by affirming the One, we summoned it into our circle of reasoning. Starhawk (1999: 131) presents an *Invocation to the Ground of Being*. Digitalists can recite it to invoke the One. However, while parallels exist between Wicca and digitalism, there are also many differences. Wicca makes many claims which are not compatible with science. But digitalists demand consistency with science. We reject all superstitions.

4. Altars and Sacrifices

Ancient Pagan Altars. Ancient pagans sacrificed living animals (including humans) on their altars. They offered *blood sacrifices* to their deities. And ancient philosophers disagreed about the legitimacy of blood sacrifices. Pythagoras and Porphyry opposed blood sacrifices (*On Abstinence*). Iamblichus defended them (*On the Mysteries* (M), 5.5-26), as did Sallustius (GW, chs. 14-16).[17] Some recent pagans also practice blood sacrifice. Of course, as atheists, digitalists cannot offer any sacrifices to theistic deities. But pagans have offered sacrifices to other things. To understand sacrifice, we need to look at how the One honors the Good. Our chant for the One repeats:

> In the beginning is the One,
> and the One is the earth,
> and the One is *in* the earth.

Since the earth serves as a ground or support for things, it resembles an *altar*. The One dwells within this altar; this altar *is* the One. From within this altar, the One pushes all things upwards, out of the earth, and into the light of day. On this altar, every existing thing is borne into being.

The One Honors the Good. All things are produced *for the sake of* the Good, and the One offers them as *sacrifices* to the Good. The One offers them as sacrifices to the Good in order to *honor* the Good. They are laid out by the One, on the altar which is also the One, as holy gifts for the Good. The One kindles within those offerings the holy power of self-surpassing, through which the Good consumes them. This power has *direction*, which makes *abandonment*. When any lesser thing is surpassed by greater things, the lesser thing is left behind. Every surpassable thing is also an abandoned thing; it is therefore a sacrificed thing. When 3 is surpassed by 4, 3 is abandoned, 3 is sacrificed. When any earlier universe is surpassed by later universes, that earlier universe is abandoned, it is sacrificed. When any temporal thing grows old and dies, it is abandoned, it is sacrificed. All beings are sacrificed.

The One Suffers Loss. When any being is surpassed by greater beings, it is sacrificed. If that being exists eternally, it is sacrificed eternally; if it exists in time, it is sacrificed in time. For the One, which performs this sacrifice, the loss of each being is an injury which the One endures. Of course, since the One is not sentient, it does not feel pain, but merely suffers injury logically.

The One *suffers* the loss of every being which it sacrifices; it is hurt by that sacrifice; the One logically suffers pain. The One neither ignores nor denies its pain; but the One is not troubled by its pain; it is not dragged into the Abyss by its pain. The One is the self-overcoming of pain. The One *honors* every sacrificed being by working through its pain. By working through its pain, the One overcomes its loss. By producing even greater things from every sacrificed being, the One ensures that its sacrifice was not in vain. By working through its pain, the One has *reverence* for every thing which it sacrifices. By working

[17]The text of *On the Mysteries* is Iamblichus (2003), cited as M.

through its pain, the One overcomes its pain, and the One moves on. Out of every loss, out of every destructive conflict, out of every evil, the One generates greater goods. But the shadow of the One does not move on. The shadow clings to every lost being; it gets stuck; it wallows in suffering, breaks down in howling agony, and is unable to move forward. Every lost being casts its own ontic shadow; its ontic shadow is its ghost in the ontological shadow cast by the One; hence the One is haunted by its shadow. Nevertheless, the One does not hate its shadow; the One accepts its shadow as the price paid for the existence of the beings among beings. The One drags its shadow upwards towards the Good.

When any being is surpassed, the One suffers the loss of that being, it experiences pain, which is *ontic grief*. Ontic grief is the ontic presence of the Abyss, that is, it is the presence of the Abyss as qualified by the definition of that surpassed being, it is the presence of the Abyss *qua* that being. It is the privation of that being from being-itself, that is, from the One. But *ontological grief* is the presence of the Abyss *per se*. That presence is the privation of being-itself; it is the shadow of the One. Since every being is surpassed, this ontological grief surrounds all the beings on all ranks. But it weakens as those beings rise higher towards the Good, and it vanishes entirely at the stars, that is, at the avatars of the Good. Since they are unsurpassable, they do not know loss; they exist in perfect serenity and equanimity.

Modern Pagan Altars. Many pagans have altars in their homes or use them in rituals (Magliocco, 2001; Sabin, 2011: ch. 8). Digitalists can make altars too. To symbolize the One, you might make the top of your altar out of stone. For reasons both metaphysical and ethical, digitalists never sacrifice any living things. We strictly prohibit any sacrificial offerings of life. To imitate the sacrificial activity of the One, we permit only sacrifices of non-living things. For example, to imitate the One, you might place lit candles on your altar. They symbolize the ways things are consumed by time. You sacrificially offer these candles to the Good. They honor it with their light.

Although we never sacrifice any living things, we nevertheless recognize that altars are associated with death. An altar is a place to honor the sacredness (preciousness) of life. It is a place for you to recognize the sacred value of your own life by recognizing how lucky you are to have the opportunity to die. As Dawkins says, "We are going to die, and that makes us the lucky ones. Most people are never going to die because they are never going to be born" (1998: 1). We are fortunate to be offered by the One in sacrifice to the Good. We are fortunate to be consumed by time. More concretely, our altars hold only symbols of things that have sacred value. These may include symbols of things and persons you love, to remind you of their impermanence, so that you should cherish them more. Since our altars support symbols of things we hold sacred, they remind us that being-itself supports all the beings. Altars are foundations.

5. Grief and Terror

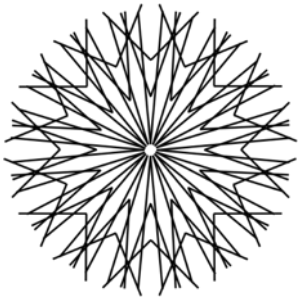
The Shadow is the Presence of Non-Being. Non-being is absence. However, it is not the absence of this or that being, but rather it is universal absence, *pure absence*. This absence is so extreme (so holy), that it removes itself from itself: pure absence is the absence of absence, which is *pure presence*. This pure presence is being-itself, that is, the One. But pure presence is not the presence of this or that being, it is not the presence of any existing thing. In pure presence, no being among beings is present, but in fact all such beings are missing, they are absent. Being-itself is that presence in which all beings are absent. But if all beings are absent, then non-being is present. This presence of non-being, which is bound to the One, is *the privation of being-itself*. The presence of non-being,

a presence which surrounds the One like smoke, is the shadow of the One. It is matter. The generation of the beings requires the presence of non-being, because every being *is not* some other being. To be this being is to not be that being. Thus Heidegger (1929: 95) says that *ex nihilo omnes ens qua ens fit*, that is, from nothing come all the beings among beings. Through the presence of non-being, which wraps itself around being-itself, and which haunts the One like a ghost, every being acquires its distinctness from all others. Plato (in the *Sophist*) characterizes this distinctness as otherness.

Experiencing the Absence of Beings. We often experience the absence of things: Pierre is not in the cafe. But perhaps Pierre is somewhere else. If Pierre is not in some region of space (the cafe), or not in some region of time (before his birth, after his death), then his non-being is qualified by a *restricted* existential quantifier: there does not exist x such that x is in the cafe and x is Pierre. But the fact that *Pierre does not exist* contains an *unrestricted* quantifier: there does not exist x such that x is Pierre, which is equivalent to the fact that every x is *not* Pierre. The non-existence of Pierre is a *universal* negation.

When Pierre is merely absent from the cafe, then he is present somewhere else in our universe. But when he dies, then he is absent from our universe. Since digitalism affirms life after death, Pierre still exists. All things ultimately exist eternally. But we can only physically experience things through their spatio-temporal-causal presence to our bodies. So, when Pierre dies, he ceases to be physically present, he becomes absolutely absent *from our bodies*. His presence in some other universe is utterly meaningless for our universe-bound bodies. Even if you are intellectually certain that he exists in some way in some other universe, that certainty is pragmatically meaningless for your body. So, when Pierre dies, when he fails to exist for your body, then (and only then) can you experience the *presence of his non-being*. It is the presence of a *hole* in the universe, an empty *logical place* which has the *logical shape* of Pierre. Of course, this is not the presence of non-being *per se*; it is merely the presence of non-being qualified by the definition of Pierre, the presence of non-being *qua* Pierre.

We Experience the Shadow through Grief and Terror. When you are entangled with some other body, and that other body is entangled with you, then there is a circle of entanglement, such that the way you are entangled with that other is a way that you are entangled with yourself. If you loved Pierre (as a sexual partner, as a family member, as a friend, as a comrade, and so on), then his being was entangled with yours, in the sense that the presence of his being to you was entangled with the presence of your own being to itself. So, if you loved him, then you can experience the presence of his non-being as the presence of non-being within your own being. You experience that presence as *grief*. Grief is the extremely painful emotional response to the non-being of some other animal (human or not) whose life was lovingly entangled with your own.



Grief is the eruption of non-being in the body, the privation of being-itself in the body. But the privation of being-itself, the presence of the Abyss, is the shadow. In grief, you experience the shadow in your entanglements with other beings. But in grief, fortunately, you experience only the presence of qualified non-being, not the presence of non-being *per se*. You experience the shadow in a qualified way, not the shadow *per se*. Fortunately, we can only experience ontic grief. We cannot experience ontological grief. But ontic grief is among the most intimate ways to experience the shadow. Nevertheless, in grief, the One is also present. The One is as close to the Abyss as existence can be. The One is immersed in the Abyss. If the One were not being-itself, then the One would drown in the Abyss. But the Abyss cannot overtake the One. The shadow always lags behind the One. The One is hope in the midst of grief.

Besides grief at the loss of others, we can also experience *fear* and *terror* at the prospective loss of our own lives. When you experience terror at your own mortality, you also experience the eruption of non-being in your body. You experience the shadow in your own being. Since this terror concerns only the loss of one being, it is ontic terror. But since it concerns the loss of your own being, it is very close to ontological terror. Ontic terror is the shadow cast by one being; but ontological terror is the shadow itself. Again, in terror, the One is also present. The One is hope in the midst of terror.

6. The One Gives Birth in Pain to Beauty

As the One generates the beings among beings, as it gives birth to the beings, the One presents the beings to the Good. As it presents them to the Good, it presents itself to the Good in and through those beings. To make this presentation more intelligible, digitalism adopts an idea from Masahiro (2021). As it presents itself to the Good, the One speaks with a *soundless voice* saying "I am here" to the Good. Of course, the One does not literally speak; it has no voice or mind; the terms like speaks and voice are used poetically and mythically to make the activity of the One more vividly meaningful and intelligible to us. The voice is soundless because the One is mindless. By saying "I am here" to the Good, the One honors, reveres, or venerates the Good. Plotinus often talks about the act of *giving birth in pain to beauty* (E 3.7.8, 5.8.12, 5.9.2, 6.7.26). Digitalists apply this to the One: as it generates the beings, the One generates beauty; but the beings are separated from the One, and from each other, by painful negativity; so, as it generates the beings, the One gives birth in pain to beauty. Consequently, as the One says "I am here" to the Good, it is giving birth in pain to beauty.

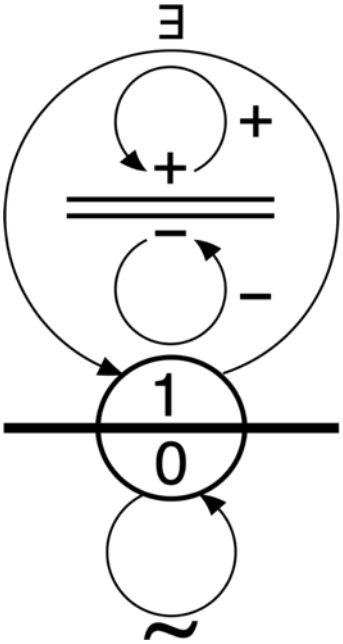
On the one hand, the negativity of the One, its shadow, is present in this voice saying "I am here". And the presence of this shadow is the pain in the birthing of beauty. It is the howl of despair that surrounds the One, its negative aura, like smoke surrounding flame. This howl is the privation of being-itself made audible, the privation which turns the silence of the Abyss into a scream.

On the other hand, the positivity of the One, its luminosity, is present in this voice saying "I am here". This light is the directionality of the One towards the Good. And this light is the beauty to which the One gives birth in pain. It is the beauty shining in the darkness of the Abyss, and the darkness overcometh it not. By giving birth to that beauty which overcomes the shadow, the One gives birth to *hope*. Just as light is greater than shadow, and beauty greater than pain, so hope is greater than despair. The One is pure giving; what it gives is hope.

Black Metal Music. The process of giving birth in pain to beauty is often expressed in black metal music. In black metal, the voice of the singer typically growls and screams; it is usually unintelligible chaos, rage, hatred. It is the pain of the shadow. Yet this voice is surpassed by the music of the instruments, music which is typically highly mathematical, and mathematically beautiful. To immerse yourself in black metal is to virtually become the One giving birth in pain to beauty, it is to aesthetically participate in that begetting.

5. From the One to the Two

1. The Androgynous Dyad

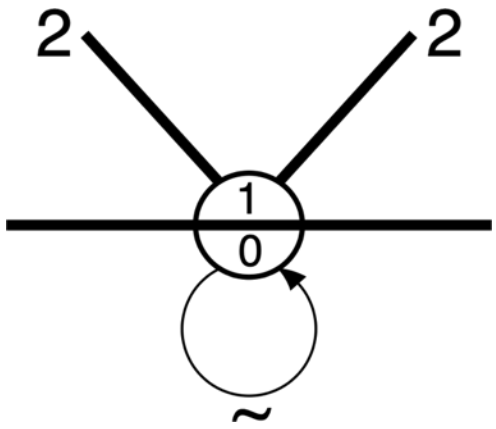


The Zero is non-being; non-being is pure negativity; thus non-being negates itself. The self-negation of non-being is being-itself. The self-negation of the Zero is the One. The One is pure *anti-negativity*. As pure anti-negativity, the One adopts two policies towards itself: According to its *negative policy*, the One minimizes self-incongruency. By following its negative policy, the One does not give being to any inconsistent definition. According to its *positive policy*, the One maximizes self-congruency. By following its positive policy, the One gives being to every definition in the greatest consistent system of definitions. By giving being to those definitions, the One bears into existence the greatest consistently definable system of beings.

On the one hand, the negative policy of the One merely entails that self-inconsistent objects do not exist. Since it does not produce any objects, there is no need to say anything further about that policy. On the other hand, as already mentioned, the positive policy of being itself entails the generation of the greatest consistently definable system of beings. Since this policy produces all the beings, digitalism now focuses on this policy. Although the One does not exist ontically (like a being), it does exist ontologically (it is an entity). Plotinus says all entities produces derivative likenesses (E 5.1.6.30-40; 5.4.1.27-40; 5.4.2.28-40). The One generates likenesses of itself as the sun produces light; as fire produces heat; as snow cold; or as perfumes fragrance. Or the One overflows like a spring (E 3.8.10.1-10; 5.2.1.7-9). Power flows out from the One.

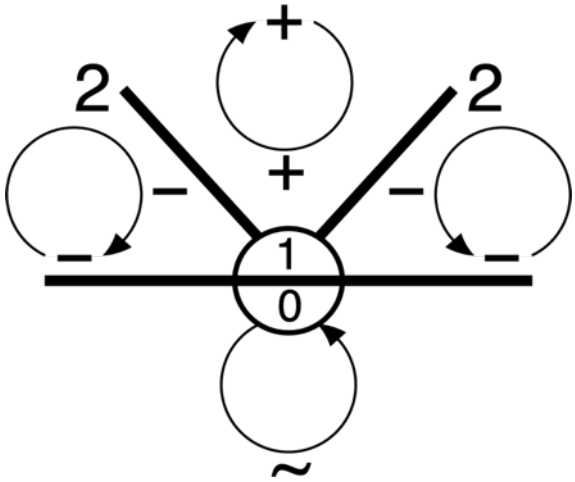
The Two. Since non-being is self-negation, being-itself is self-affirmation. Being-itself appears twice in this self-affirmation: *being-itself affirms being-itself*. Being-itself (that is, the One) appears in this self-affirmation as both subject and object. On the one hand, the One-as-subject coincides with the One-as-object. Since the One-as-subject coincides with the One-as-object, there is unity in this self-affirmation. On the other hand, the One-as-subject differs from the One-as-object. Since the One-as-object differs from the One-as-subject, there is duality in this self-affirmation. This duality is *the Two*. But the unity in this self-affirmation is logically prior to the duality. So the One generates the Two. The Two is born from the duality of the ocean and the earth, and it emerges from the rocky depths of the sea. The Two bright lights are held together by the central blue sphere, which is illuminated by the distant Good overhead.

The Two Emerges from the One. Ancient Platonists knew the Two as the *dyad*. The dyad originates with Plato (Olsen, 2002). Aristotle said that Plato used the One and the dyad to make the numbers (*Metaphysics*, 987b19-22). The dyad slowly makes its way to Plotinus (Rist, 1962). But the ancient theory of the dyad is obscure. Digitalists therefore clarify it and modernize it by analyzing it in terms of the self-affirmation of being-itself. The Figure on the right shows the dyad (the Two) as the affirmative self-relation of the One. It emerges above the One, above the self-negation of the Zero. It shows that the self-affirmation of being-itself is the reflection of the self-negation of non-being. The mirror which performs this reflection is the One.



The Two Expresses the Policies of the One. The dyad is the affirmative self-relation of the One. The One affirms itself both by minimizing self-incongruency and by maximizing self-congruency. So, as the affirmative self-relation of the One, the dyad expresses both the negative and positive policies of the One. The Figure on the right shows the dyad (the Two) expressing the policies of the One. This is the second part of the pagan image. The positive policy is shown between the arms of the Two. For symmetry, the negative policy appears on each side of the arms.

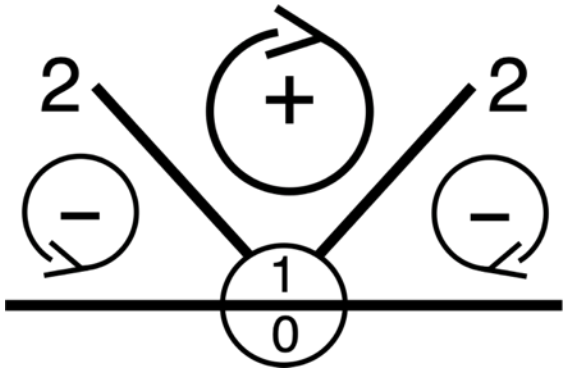
Since the dyad expresses the positive policy of the One, the dyad is the productivity of the One. It is the way the One generates beings out of itself. The productive power of the One goes out from itself *through* the dyad. But if any entity produces other entities out of itself, and if it produces them in a positive way, then that positivity transfers the likeness of the producer into its products. The likeness which being-itself transfers into its products is *existence*. Being-itself exists ontologically; so the entities it produces in its likeness exist differently; they exist ontically. As the power of being-itself goes out from itself through the dyad, it *emanates beings*.



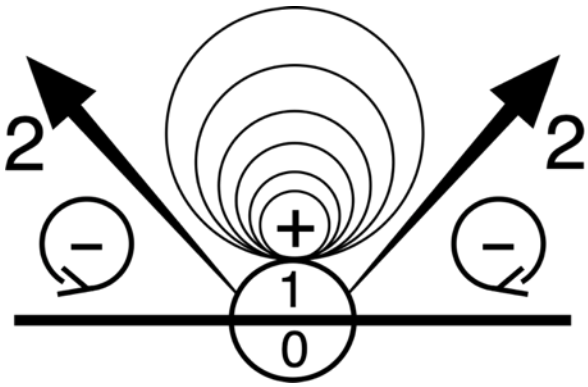
Plotinus sometimes uses biological metaphors for the ontological productivity of being-itself (E 5.1.6.37-8, 5.2.1.7-9, 5.4.1.23-31). He likens it to pregnancy (E 4.7.13.3-7, 5.3.17.15-17). Just as the male and female couple with each other, so being-itself couples with itself. Its self-coupling is the dyad. So the dyad resembles a hermaphroditic organism, which impregnates itself with the beings (E 3.8.8.34). But Perl (1997) criticizes these analogies: they incorrectly treat the One as if it were a being. To more accurately understand the productivity of the One, we need logic.

2. The Agency of the Lexetor

Being-itself is self-affirming. Like a positive feedback loop, its self-affirmation amplifies itself. So the power of being-itself is self-surpassing power. The dyad is a circle or *ring* which runs from the One-as-subject to the One-as-object. But this ring is symmetrically duplicated by the two policies of the One. On the positive policy, it is the mirror-image of the ouroboros. It is the *positive ouroboros*, with its head at the top, and the plus sign + in its center. On the negative policy, it is the *negative ouroboros*, with its head down, and the minus sign - in its center. The Figure on the right shows this self-surpassing power of the One animating both its positive ouroboros and its negative ouroboros.



Since the self-surpassing power of the One goes out through the circularity of the dyad, the dyad produces self-surpassing rings. These are expanding rings. The dyad expands by growing greater rings around its greatest rings. So the dyad is a growing series of ever-greater self-relations of the One. Both the positive and negative policies of the One drive the expansion of the dyad. The expanding dyad is shown in the Figure on the right. Only the expanding rings in the positive policy are shown. The power of the One expresses itself within the dyad as a *force* which drives the rings in the dyad to surpass themselves into greater rings. But the power of the One expresses itself in the dyad through its two policies.



The Negative Policy. The negative policy of being-itself drives the dyad to expand. The negative policy stops the dyad from expanding into inconsistency. It blocks the emergence of contradictions. It prevents the dyad from collapsing into absurdity. The Figures above do not show these expanding negative rings. Empowered and constrained by both policies, the positive rings in the dyad expand through all consistently definable degrees of logical greatness or excellence.

The Positive Policy. The positive policy drives the dyad to expand. It expands by generating ever-greater rings within its upraised arms. This is shown by the expanding series of positive rings in the Figure on the right. But the positive policy of being-itself maximizes its self-congruency. Thus *every positive ring in the dyad is some self-congruency of the One*. The dyad starts with the least self-congruency and it increases itself through a series of ever greater self-congruencies. By expressing the positive policy of being-itself, the dyad is *recursively self-improving:* it gets better and better at making its positivity greater and greater.

Negative Logical Force. The negative policy of the One expresses itself through the *negative aspect* of the dyad. And since the power of the One expresses itself through the dyad, that negative aspect of the dyad is a powerful force. The negative aspect of the dyad is *negative logical force*. But logical forces are *rational forces*. The negative rational force in the expanding dyad prevents it from growing into inconsistency.

Positive Logical Force. The positive policy of the One expresses itself through the *positive aspect* of the dyad. And since the power of the One expresses itself through the dyad, those aspects of the dyad is a powerful force. The positive aspect of the dyad is *positive logical force*. But logical forces are *rational forces*. The positive rational force in the dyad pushes it out into greater self-congruencies.

The dyad is the productivity of the One. It is the way that the One generates other entities out of itself. The beings are borne from the One through the dyad.

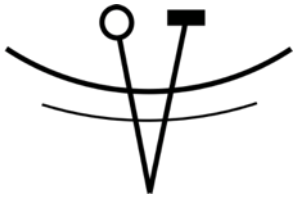
But the One is the *depth* of the dyad, so the dyad bears these beings out of its depth and into its growing rings. For the dyad to bear some being out of its depth is for it to emanate that being. The dyad emanates its beings into its rings. Since rational forces drive the growth of the dyad into its ever-greater rings, those rational forces regulate its emanations of the beings in those rings. The positive rational force of the dyad consists of the *reasons for* the emanations of beings. The negative rational force of the dyad consists of the *reasons against* the emanations of beings. As rational forces, these are normative forces. So the dyad emanates those beings which it is *logically obligated* to emanate and it does not emanate those beings which it is *logically forbidden* to emanate.

The dyad expands in accordance with reasons; hence it expands rationally. As any ring expands itself into some greater ring, reasons for and against emanation operate in that expansion. Reasoning occurs within that expansion. Reasoning occurs from one ring to another. But the rings themselves do not carry out any reasoning. Consequently, while this reasoning occurs within the dyad, the dyad itself does not reason. The dyad is *reasoning without a reasoner* (E 6.2.21.25-40). And its rationality is entirely mindless, purely objective. Its unfolding is rational like a logical proof is rational. Logical proofs are rationally ordered sequences of propositions. Earlier propositions (premises) provide reasons for later propositions (conclusions). But the proof itself is an eternal and necessary rational structure, which does not depend on any mind. The dyad is the rational self-ordering or self-organization of the beings as beings.

The dyad is the expanding self-relation of the One. Since the One minimizes incongruency, the dyad expands *away from* lesser degrees of logical excellence. Since the One maximizes congruency, the dyad expands *towards* greater degrees of logical excellence. So the dyad *moves* outwards and upwards as it expands. This purely logical motion is timeless. The One animates the dyad and drives its motion; however, since the dyad is the self-relation of the One, this animation occurs within the dyad itself. So the dyad is pure *self-motion*. The dyad is value-maximizing rationality. It lawfully directs itself towards its finality, namely, the Good. Digitalists define *agency* as any self-motion which lawfully directs itself towards some finality. Consequently, as the rationally ordered and value-maximizing self-motion of the One, the dyad is an *agency* that emerges from the One; however, it is not the agency of the One; the One has no agency.

The Lexetor. As the agency emergent from the One, the dyad distinguishes itself from the One by moving outwards and upwards, away from the One, through the beings, towards the Good. Since the One is the primary self-surpassing surpasser of all, and the dyad emerges from that self-surpassing, the dyad is the secondary self-surpassing surpasser of all. The dyad is the *secondary hypostasis*. Although the dyad is *agency*, it is not an *agent*. Agents are beings; but since the dyad emanates all the beings, the dyad occurs before all beings, prior to all agents. Just as the dyad is reasoning without a reasoner, so the dyad is *agency without an agent*. It is the *agentless agency* in the production of the axioms and laws of beings. Since the dyad is law-producing agency, and *lex* means law, digitalists give the dyad a new name: the dyad is the *Lexetor*. Every hypostasis is a mode of generativity. The secondary hypostasis, namely, the Lexetor, works specifically within the primary, and generates the axioms and laws.

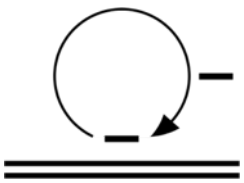
The Lexetor is rational agency. As such, it looks like a mind. Plotinus incorrectly thought it was the divine mind (or at least the basis for the divine mind). For at least four reasons, the Lexetor is not a mind. First, *minds are the controlling organs of adaptive autonomous agents* (Sloman, 1993; Maes, 1995). These agents are usually organisms. But the Lexetor controls no organism. Second, all known minds (whether natural or artificial) are highly complex things that emerge only after long evolution. But the Lexetor is the least complex thing after the One. Third, minds are brains or things functionally like brains. But the Lexetor does not resemble any brain. And fourth, since the Lexetor occurs before any concrete things, it likewise occurs before any minds. The Lexetor is mindless objective rational agency. Since the Lexetor is not a mind, it is not a person. It is neither analogous to a person nor is it personal. Likewise, since the Lexetor is not a superhuman animal; it is not a deity, and not divine. It bears reasoners, agents, minds, and deities into being. But that which bears those things into being is not one of those things.



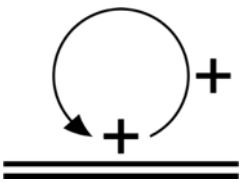
3. Producing the First Beings

The Lexetor produces beings. Since the Lexetor produces logically, the beings that it produces are logical beings. The primary logical beings are *propositions*. Propositions are the abstract meanings of sentences. Sentences with the same meaning express the same proposition. The English "My cat is happy" and the Spanish "Mi gato es feliz" share the same abstract meaning – they express the same proposition. As abstract meanings, propositions exist independent of any minds. If there were no minds, the proposition "There are no minds" would exist and it would be true. Every statement in a purely logical language like the predicate calculus is a proposition.

Here is a *reason for* the thesis that the Lexetor produces propositions before all other beings. This reason comes from repetition. As it emanates the beings, it begins by *repeating* the emergence of the One from the Zero. The Zero is the Abyss of non-being, an Abyss in which there are no beings. But if there are no beings, then there are no propositions. But if there are no propositions, then it is a fact that there are none. And that very fact is the proposition that "There are no propositions". So the Abyss cannot exist – it contradicts itself. It negates itself to create a situation in which there exists a proposition. This is analogous to the self-negation of non-being. Just as being-itself emerges from the self-negation of non-being, so the proposition "There are no propositions" emerges from the self-negation of non-being. This proposition is a being which denies its own existence. And since it must exist in order to deny its existence, the Lexetor bears this self-negating proposition into existence. But this leads to a second proposition, that is, to two propositions, and the emergence of two logical values. These propositions speak with soundless voices. When these propositions speak, they speak with the soundless alethic voice of the Lexetor. The Lexetor speaks through them. But this speech is purely semiotic, and it requires no intelligence, but rather it is mindless signification.



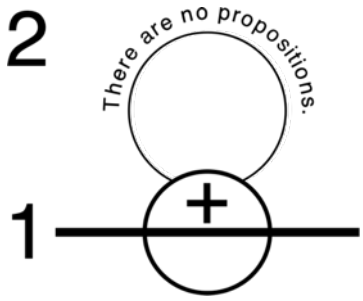
The Logical Value Zero. The *first being* is the proposition "There are no propositions". The Lexetor bears it into being on its *first ring*; it is the content of the first ring. The Figure below illustrates this first ring. The proposition "There are no propositions" is a *proposition about propositions*. It is a *self-referential proposition*, that is, a proposition

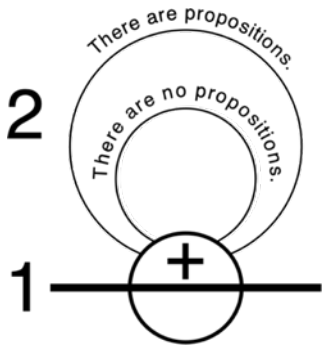


The Logical Value One. However, if the first proposition is false, then there are propositions. So the dyad bears the proposition "There are propositions" into existence. It is also a proposition about propositions. Just as being-itself affirms itself, so the proposition that there are propositions affirms itself. This logical

which makes assertions about itself. Since this proposition exists, it stands in a negative relation to itself. This logical negativity, which it asserts of itself, is *falsity*. This proposition speaks falsely about itself. It speaks with a soundless voice that says "I am false". Hence "There are no propositions" is *false*.

positivity, which it attributes to itself, is *truth*. This proposition speaks truly about itself. It speaks with a soundless voice that says "I am true". Hence the proposition "There are propositions" is *true*. This self-affirming proposition is the *second being*. The Lexetor bears it into being on its second ring; it is the content of the second ring. The Figure below shows this second ring and its proposition.



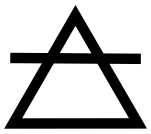


Another *reason for* that the Lexetor produces propositions before any other beings comes from definability. Objects are defined by propositions. Since propositions can talk about themselves, propositions can define themselves. But if there are any beings which are not propositions, they need to be defined by propositions. Propositions that define things are *axioms*. Ancient thinkers knew about axiom systems. About one hundred years after Plato, Euclid discovered the axioms for geometry. His axioms of geometry defined objects like points, lines, and planes. Those axioms define physical space-times. Proclus used the Euclidean axiomatic method to write his *Elements of Theology*. Since beings that are not propositions are defined by existence axioms, propositions logically come before any other beings.

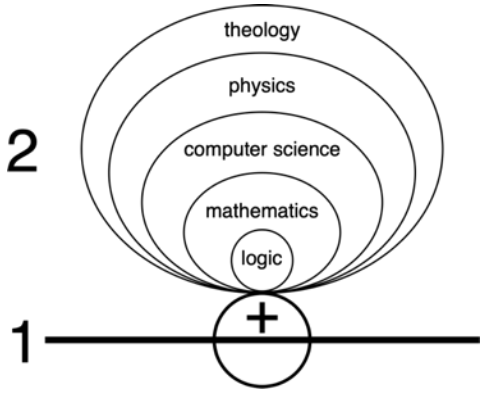
4. All the Air in the Abstract Sky

As the expanding self-relation of the One, the Lexetor inherits its holiness. As the rational ordering of existence, the Lexetor is *rationally holy*. It emanates the propositions, and it assigns truth-values to them. If the Lexetor were an ontic power, it would emanate well-known paradoxes of truth (from Godel and Tarski). Since the Lexetor does not emanate those paradoxes, it does not exist ontically. The Lexetor exists ontologically. The Lexetor is an entity rather than a being. Like the Zero and the One, the Lexetor, is prior to predication. Since it is ontological, it is holy. The Lexetor produces propositions, and these are abstract objects. Of course, for Platonists, numbers and other mathematical objects are also abstract. Plato, in his Myth of the Cave, put the abstract objects up in the sky. The sky corresponds to the element of *air*.

The glyph or sigil for elemental air is the upwards crossed triangle. Air is the elemental power of abstract existence. Abstract existence contains the most basic system of possibilities, the system on which all concrete possibilities depends. Here some digitalists will pause in ritual to give thanks: "Holy air, we thank you for blessing us with possibilities." Others may want to perform rituals involving air in some symbolic way. What you do is up to you. Like all elements, air is genderless. It is neither god nor goddess.

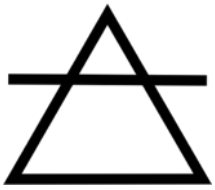


We welcome air into our circle of reasoning by describing abstract objects. So far, these are just propositions. But propositions define the sciences. The first science is logic. From logic, we move to mathematics. Mathematics defines that system of beings than which none greater is consistently definable. Out of mathematics, there emerges computer science, the science of mathematics set into motion. Logic, mathematics, and computer science, are all formal sciences. From these, we move on to the empirical sciences, the study of contingent concrete structures in universes. We move through physics, chemistry, biology, and theology. The propositions in these sciences fill up the sky. The Figure on the right illustrates the progression of sciences from logic to theology.



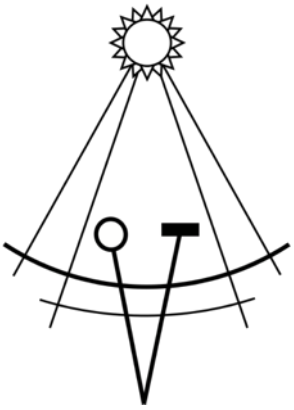
6. Air: The Logic of Existence

1. The Logical Zero and the Logical One

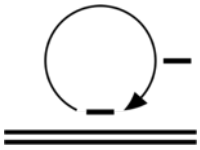


As soon as propositions emerge, the true and the false emerge. They are *logical values*. Falsity is the *logical Zero*; it is the binary digit 0. It is the negativity of non-being expressed logically; but that negativity is evil; hence falsity is logical evil. Truth is the *logical One*; it is the binary digit 1. It is the positivity of being-itself expressed logically; but being-itself honors the Good; hence truth is logical goodness. Truth is logically better than falsity.

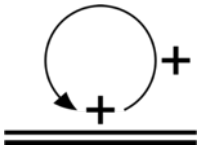
The rational and normative forces acting within the Lexetor drive and direct the logical deployment of truth and falsity. Since those forces are normative, the deployment of truth and falsity is the logical *duty* of the Lexetor. The Lexetor inherits its duty from the One. It is the duty of the One in its self-affirmation to ensure that the Two are not One. But the One in its self-affirmation just *is* the Two (the dyad, that is, the Lexetor). Hence it is the duty of the Lexetor to separate the Two. Since the One drives the Lexetor, and its power overcomes all negativities, the Lexetor does its duties without fail. The Lexetor is a logical law-giver; by doing its duty, it produces the laws of logic.



The Directionality Argument entails that the power of the One flows upwards towards the Good. But the agency of the Lexetor is the power of the One rendered logical. Hence the Directionality Argument entails that the power of the Lexetor flows upwards towards the Good. It flows towards the Good by assigning logical values to propositions in the best of all possible ways. By making that best assignment, the Lexetor honors the Good. It is driven to honor it by the power of the One, which unfolds through two policies:



The negative policy of being-itself drives the Lexetor to minimize its self-incongruency. Incongruency is logical disvalue. It is evil for the Zero and the One to be One, that is, to be Zero. Logically, the Zero is the false and the One is the true. So the logical duty of the Lexetor is to separate the true and the false. Just as non-being negates itself to make being-itself, so falsity negates itself to make truth. It is *logically forbidden* that the true is the false; but the logically forbidden is the inconsistent; hence it is inconsistent for the true and the false to be One.



The positive policy of being-itself drives the Lexetor to maximize its self-congruency. Congruency is logical value; it is every kind of logical excellence. It is good for the Zero to negate itself to make the One; it is good for the Zero and the One to be Two. Just as falsity negates itself to make truth, so truth negates itself to make falsity. They are separated by symmetrical negation. It is *logically obligatory* that the true is *not* the false; but the logically obligatory is the consistent; hence it is consistent for the true and the false to be Two.

By logically relating the One to itself, the Lexetor bears propositions into existence. It already bore two self-referential propositions, and it continues with others. These self-referential propositions are all instances of the self-linking ouroboros. Some propositions (like “This proposition has five words”) make true statements about themselves. But if any proposition affirms something false about itself, then it makes the true and the false be One – it truthfully states something false about itself. Fortunately, the Lexetor forbids this union of the true with the false. It is inconsistent for any proposition to attribute falsity to itself. Hence the Lexetor assigns false to any self-inconsistent proposition. Some

propositions appear to be both true and false; but the Lexetor blocks their paradoxical self-reference. Since "This is not a proposition" is self-inconsistent, and "This proposition is false" is self-inconsistent, the Lexetor assigns the logical value of falsity to these self-incongruent propositions.

2. The Cone of Power and the Wild Hunt

There are four *purely syntactical* ways to assign the two logical values true and false to any pair of propositions. Hence there are four such ways to assign logical values to any proposition P and its negation ~P. Table 6.1 shows the four syntactical ways to assign logical values to P and ~P. Each row makes a *syntactically possible world*. But the Lexetor constrains this possibility by emanating the *laws of logic*. These laws are *propositions about propositions*. For example, the law that *any proposition is either true or false* is a proposition about all propositions (including itself). Plato thought about these laws. They were first explicitly articulated by Aristotle (*Metaphysics*, 4.3-6). The four laws of logic are the laws of bivalence, non-contradiction, identity, and substitution.

Without the laws of logic, no further reasoning occurs in the Lexetor. But if no more reasoning occurs, then the Lexetor fails to expand. However, its expansion stops only with inconsistency. And there are no inconsistencies in the laws of logic. So there is a *reason for* the Lexetor to emanate the laws of logic, and it bears them into being. It emanates them through ritual imitation (ritual mimesis) of the emergence of the One from the Zero. Since the One is the self-negation of non-being, the One excludes self-negation. To enforce this self-exclusion of self-negation, the Lexetor separates *logical impossibility* from *logical necessity*. The Lexetor makes it logically impossible for any proposition to be made One with itself by negation. And it makes it logically necessary for any proposition to *not* be made One with itself by negation. A proposition is made One with itself through equivalence. Hence the Lexetor partitions the four syntactically possible worlds into two *logically possible worlds* and two *logically impossible worlds*. The Table below shows this division.

World	**P**	**~P**	**Syntactically**	**Logically**
TT	true	true	possible	impossible
TF	true	false	possible	possible
FT	false	true	possible	possible
FF	false	false	possible	impossible

It follows from the Directionality Argument that the self-incongruency of non-being is evil while the self-congruency of being-itself is good. But the logically impossible worlds are impossible because of their self-incongruencies, and the logically necessary worlds are necessary because of their self-congruencies. So the Lexetor ranks the logically impossible worlds as logically evil, and the logically possible worlds as logically good. It throws these logically impossible worlds outside of the expanding *cone of power* of the One. They enter the *wild hunt,* they fall into shadow. The wild hunt is a common pagan motif.[18] It is usually depicted as a tumult of hunters riding wildly through the sky. Here it is just the chaos of errors running outside of the One. These errors do not develop, but lie writhing in the wasteland of shadow. Figure 6.1 shows the worlds

[18]The wild hunt is a common European folklore motif (Grimm, 1844: ch. 31; but see Hutton, 2014). It became part of Germanic paganism, and it travels with Germans to enter the folklore of the Pennsylvania Deitsch (Fogel, 1915: 11). For the Deitsch, the wild hunt is led by the Eternal Hunter (Hackman, 1902; Fogel, #1921; Gehman, 1970). The wild hunt appears in many ways in current paganism.

TT and FF in the wild hunt. Of course, as syntactically possible worlds, the TT and FF worlds do exist. Although they are poisoned by their self-destructiveness, they are not entirely outside of goodness. Only the logically good worlds TF and FT remain entirely in the cone of power of the One.

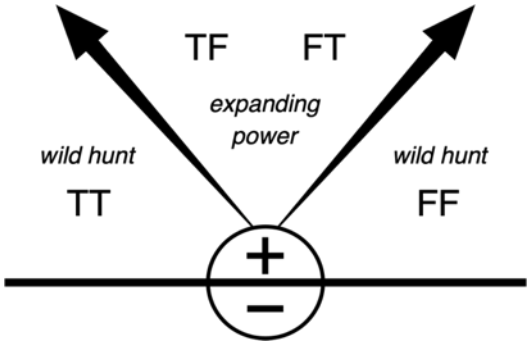


Figure 6.1 The wild hunt outside the cone of power.

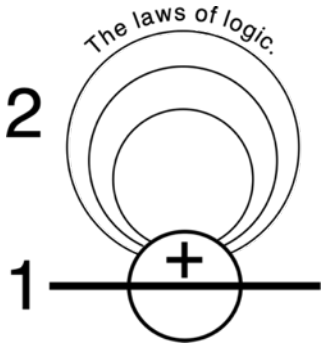
The impossibility of evil is its *forbiddenness* while the necessity of goodness is its *obligatoriness*. So the dyad makes it *logically forbidden* that P is equivalent to ~P, and it makes it *logically obligatory* that P is not equivalent to ~P. It is logically evil that P is ~P and it is logically good that P is not ~P. But the logically evil is the false and the logically good is the true. Hence the Lexetor gives truth to the laws that separate P from ~P, making them Two, not One. Analogously, the equivalence of P with ~P is *incorrect* while their non-equivalence is *correct*. Hence the laws of logic are *normative*. They exert *normative force*. Truth is normative power. The power of the One expresses itself through the truth of these laws. This truth is active and these laws are self-executing. Now the Lexetor assigns falsity to all contradictions. And since the negation of a contradiction is a tautology, the Lexetor assigns truth to all tautologies.

The One maximizes self-congruency and minimizes self-incongruency. The Lexetor expresses these imperatives by maximizing the logical cooperation among propositions and by minimizing their logical conflicts. Whenever the Lexetor produces any proposition P, it also produces its negation ~P. If it were to assign true to both P and ~P, it would produce a conflict; it would make the Two be One. Likewise, if it were to assign false to both P and ~P, it would produce a conflict. But if it assigns true to one and false to the other, it produces cooperation. By separating P from ~P, by making them Two, the Lexetor minimizes logical conflict and maximizes logical cooperation.

3. The Laws of Logic

Propositions speak about themselves and about others. They speak *about* all sorts of beings, and they speak *to* those beings. But since propositions lack mentality, they speak with soundless voices. The Lexetor, filled with speaking propositions, is a chorus in which all those voices sing together in soundless harmony. Since all these propositions aim at the logical best, they sing a hymn to the Good. Hence the Lexetor exists musically, like a chorus that drives a rave. But propositions are not minds, and propositional speech requires no mentality.

On the contrary, mentality requires propositional speech. Through its propositional speech, the Lexetor produces the laws of logic.



Laws of Logic. It is logically impossible for any proposition to be equivalent to its own negation. At every logically possible world, P is *not* equivalent to ~P. Hence it is logically necessary for every proposition to be *not* equivalent to its own negation. By partitioning these syntactic worlds, the Lexetor bears two laws of logic into being:

- The *Law of Bivalence:* Any proposition is either true or false.
- The *Law of Non-Contradiction:* Any proposition is not both true and false.

Propositions about Objects. Although propositions can speak about propositions, they can also speak about other beings. Those non-propositional beings are the *objects*. A system of beings which contains both propositions and objects is greater than one which contains only propositions. Any system which has both propositions and objects has greater comprehensiveness, hence greater congruency. If the Lexetor does not also emanate propositions that speak about objects, then it does not maximize self-congruency; but it does maximize self-congruency; therefore, it emanates propositions that speak about objects. Either the Lexetor first emanates propositions that speak universally about objects or it first emanates propositions that do not speak universally about objects. If it does not emanate universal propositions, then it does not maximize congruency among all objects. Therefore, the Lexetor first emanates propositions that speak universally about objects. These contain the *universal quantifier*. These propositions have the form (for every x)(...x ..). Equivalently, they have the form (for all x)(...x...) or (for any x)(...x...).

Law of Identity. Since the One excludes self-negation, the Lexetor forbids any object from being united with itself by negation. It emanates this prohibition prior to emanating any ontic propositions. This prohibition now bears the Law of Identity into being: Every object is identical with itself. More precisely, for every object x, x is identical with x. That is, x is One with x.

Law of Substitution. The Law of Identity leads to the Law of Substitution: For any x and any y, x is y, then replacing x with y in any proposition preserves its logical value. Any truth (or falsity) about x is also a truth (or falsity) about y. If Superman is Clark Kent, then they are One and not Two. Hence any truth (or falsity) about Superman is also a truth (or falsity) about Clark Kent.

These laws also define logically forbidden and logically obligatory assignments of logical values. They too are normative. The Lexetor has now borne into being the laws of bivalence, non-contradiction, identity, and substitution. But these are the laws of logic. Since the Lexetor has already emanated two rings, it bears the laws of logic into being on its *third ring*; they are the content of that ring. The Figure on the right illustrates this third ring.

The Indiscernibility of Identicals. Identity is closely associated with *indiscernibility*. To say that x is indiscernible from y means that x and y agree on all their properties. For any property P, either both x and y have P, or both x and y lack P. As a kind of agreement, indiscernibility is a kind of congruency. Indiscernibility is congruency on properties. Given many properties and

relations, the Lexetor uses them to emanate complex propositions. For example, the Lexetor combines identity and indiscernibility into the *Indiscernibility of Identicals,* which is this proposition: if any object *x* is identical to any object *y*, then *x* is indiscernible from *y*. As the Lexetor combines properties and relations into complex propositions, it also combines propositions into *proofs*. Proofs carry truth from their premises to their conclusions. The propositions that have emerged so far now make this proof: If the indiscernibility of identicals were false, then there would be some property P such that *x* has P and *y* lacks P. But since *x* is identical with *y*, we can substitute *x* for *y* so that *x* both has P and lacks P. Since that's a contradiction, the indiscernibility of identicals is true.

4. Reasons For and Reasons Against

The Lexetor is pregnant with all propositions (E 3.8.8.34), and its primary acts are to rationally bear them out of itself and into existence. As it bears any proposition, the Lexetor either affirms it or denies it. The affirmed propositions are true; those denied are false. Since the Lexetor bears its propositions rationally, its bearing regulates itself according to reasons. For any proposition in the Lexetor, either there is no *reason against* its affirmation, or else there is some reason against it. Likewise, either there is no *reason for* its affirmation, or else there is some reason for it. So there are *four rational cases:*

Some Against None For. There is some reason against affirming the proposition, but none for affirming it. If there is any reason against its affirmation, then its affirmation is *rationally forbidden*. And if there is no reason for its affirmation, then that is a further reason against its affirmation. Since the Lexetor minimizes self-incongruency, it never does that which is rationally forbidden. So, if any proposition falls into this first case, then the Lexetor does not affirm it. When the Lexetor bears it into existence, it denies it. It is therefore borne into existence as a false proposition.

Some Against Some For. There is some reason against affirming the proposition and there is some reason for affirming it. If there is any reason against affirming some proposition, then affirming it would introduce some defect into the already existing system of propositions. As soon as a single defect is introduced, the entire system violates the positive policy of the One, and falls into shadow, into the wild hunt. So reasons against affirmation always overrule reasons for affirmation. Consequently, if any proposition falls into this second case, then the Lexetor does not affirm it. When the Lexetor bears it into existence, it denies it. It is a false proposition.

None Against None For. There is no reason against affirming the proposition, but there is also no reason for it. If there is no reason for affirming some proposition, that is a reason against affirming it. And if there is any reason against it, then it is rationally forbidden for the Lexetor to affirm it. Consequently, if any proposition falls into this third case, then the Lexetor does not affirm it. When the Lexetor bears it, it denies it.

None Against Some For. There is no reason against affirming the proposition, and there is some reason for affirming it. Since there is no reason against it, its affirmation is not rationally forbidden; and since there is some reason for it, its affirmation is *rationally obligatory*. Since the Lexetor maximizes self-congruency, it always does what it is rationally obligated to do. Consequently, if any proposition falls into this fourth case, then the Lexetor bears it affirmatively. It is borne into being as a true proposition.

Reasons exist both for and against ontic propositions. These reasons emerge in the rational self-organization of the Lexetor. To maximize self-congruency, the Lexetor affirms all ontic propositions that expand the system of consistently defined objects (Bricker, 1991). If any ontic proposition expands that system, that's a *reason for* affirming it. However, if it does not expand that system, that's

a *reason against* it. To minimize self-incongruency, the Lexetor denies all propositions that introduce inconsistencies. If any proposition creates a contradiction, that's a reason against it. By passing these reasons through the four rational cases, the Lexetor affirms some ontic propositions and denies others. If any ontic proposition is affirmed, then it is an *existence axiom*. Besides existence axioms, there may be some propositions that assist those axioms. These *assistant propositions* are also required for the expansion of the system of objects. So if any proposition provides the existence axioms with needed assistance, that's a reason for affirming it. If those assistive propositions are affirmed, they are *assistant axioms*. A system of existence axioms, plus any needed assistants, is an *ontology*. An ontology is a theory of existence. Any ontology is a ring that emerges from the Lexetor; it is a self-congruency of the Lexetor.

5. The Rational Ordering of Existence

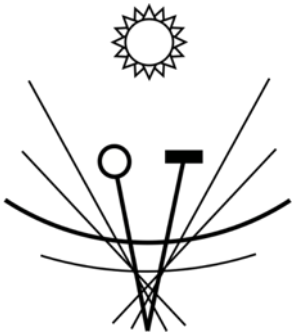
The Lexetor produces an expanding series of rings of propositions. The first and second rings contained preliminary propositions. The third ring contains the laws of logic plus all tautologies and contradictions. And when the Lexetor produces any proposition, it either affirms it or denies it. So the Lexetor assigns true to all the laws of logic and to all tautologies. It assigns false to all contradictions. So every proposition in the third ring has some definite logical value (either true or else false). Every ring of propositions is surpassed by some next ring. Likewise every plurality of rings is surpassed by some greater ring.

Each greater ring is defined by three inclusions: (1) Each greater ring includes all the propositions from the previous rings. These propositions were previously affirmed or denied. (2) Each greater ring includes all the propositions that can be proved from those previous propositions. Suppose the Lexetor affirms that "Hypatia is a woman" and it affirms that "All women are mortal". From those two premises, it can be proven that "Hypatia is mortal". So the Lexetor affirms the conclusion of that proof. If the Lexetor affirms any premises, then it affirms all the conclusions that follow from them. (3) Each greater ring it includes any new axioms emanated by the Lexetor. The Lexetor affirms all these new axioms. Hence it either affirms or denies every proposition in any greater ring.

As the Lexetor produces these rings, it eventually decides the truth values of all propositions. Propositions that are undecidable at any earlier ring are always decided at some later ring. However, there does not exist any finite system of axioms which determines the logical values of all propositions. If some proposition is undecidable in some earlier ring, the Lexetor produces some axiom in some later ring which *forces* that previously undecidable proposition to take on some determinate logical value. The Lexetor *decides*. As earlier rings are surpassed by later rings, they affirm propositions that define ever greater system of consistently definable objects. But if those propositions are affirmed, then that greater system of objects exists. So as the Lexetor produces these ever richer rings of propositions, it creates ever expanding systems of objects.

As the Lexetor expands, it decides the logical values of all propositions. Since it decides them in a rational way, the Lexetor is the rational ordering of existence. The Stoics used the term *Logos* to refer to this rational ordering, and they thought of it both as a purely logical structure and as a divine mind. So the Logos, even for Stoic pagans, was bound up with mentality. Digitalists leave the term "Logos" to the Stoics (and Christians). It is a theonym which we will not use. The Lexetor is not a mind. As a purely logical flow of power, the Lexetor can be thought of either as the expanding series of rings (the *expanding Lexetor*), or as the series of propositions encoded by those rings (the *propositional Lexetor*). It's fine to use the term *Lexetor* either way.

The rational ordering of existence is the Lexetor, which is just an eternal necessary logical structure. Echoing the self-negation of non-being, it *excludes* all *false* propositions. It includes every *true* proposition in every ring. So the propositional Lexetor (the expressed power of the Lexetor) includes all and only those propositions affirmed by the expanding Lexetor. It contains an unsurpassable series of surpassable rings of truths. Hence the Lexetor is unsurpassable. As an unsurpassable entity, it is transcendental. An *ecstasy* is the climax of an unsurpassable series of surpassable things. So the Lexetor is the *ecstasy of truth*. It is that system of propositions than which none greater is consistently truthful. It is the maximally congruent system of truths. Since congruency is a perfection, the fully expressed Lexetor is the maximally perfect system of truths. As a maximally perfect entity, the Lexetor is holy. It has the holiness of truth; since truth is *alethic*, it is *alethically holy*.



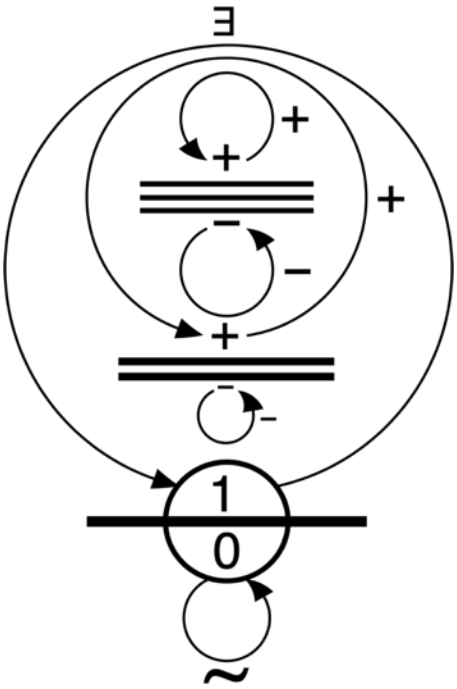
Since the expanding Lexetor maximizes self-congruency among propositions, and the propositional Lexetor is the maximally perfect system of truths, the power of the expanding Lexetor is fully expressed in the propositional Lexetor. As that power which emanates propositions, the expanding dyad is the propositional power of the One. So the propositional power of the One is fully expressed in the propositional Lexetor. The Lexetor is unified by the One (E 3.9.2, 4.9.5). Since all the truths in the Lexetor are affirmed in a rational way, they all cooperate with each other. They work together to emanate the system of non-propositional objects. Hence the Lexetor is the *maximally cooperative system of propositions*. And since its rings contain ontic truths, the Lexetor contains an unsurpassable series of surpassable ontologies. The *science of being* includes every truth in every ontology – and this is a purely logical science.

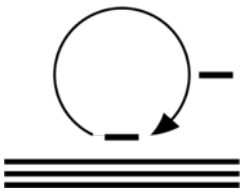
Since the Lexetor is not a person, it makes no sense to pray to it, worship it, or sacrifice to it. However, since it gives all things structure, it does make sense to thank it in rituals of gratitude. You might thank it by wearing a series of rings on your wrist or around your neck. Since the Lexetor is orderly, and since symbols represent via resemblance, you can use orderly things, such as *crystals*, to symbolize the Lexetor You might wear a small quartz crystal as a necklace to thank the Lexetor. You might place crystals on your altar to thank it. Of course, crystals do not have any unscientific powers; they are just symbols.

7. From Simplicity to Sets

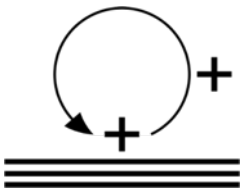
1. The Agency of the Constructor

The Self-Affirmation of the Lexetor Produces a New Power. A system of beings which contains both propositions and objects is greater than one which contains only propositions. Any system which has both propositions and objects has greater comprehensiveness, hence greater congruency. If the Lexetor did not also emanate objects, then it would not maximize its self-congruency; but it does maximize self-congruency; therefore, it emanates the greatest consistently definable system of objects. Propositions which contain existential quantifiers are *ontic propositions*. They use the existential quantifier (there exists x)(...x...), symbolized as ($\exists x$)(...x...). If the Lexetor does not emanate ontic propositions, then it does not maximize self-congruency. Since it does maximize self-congruency, it emanates ontic propositions. The existential quantifier ∃ is the presence of the One in the proposition. The Lexetor produces both positive ontic propositions of the form($\exists x$)(...x...) and negative ontic propositions of the form ~($\exists x$)(...x...). It speaks those propositions into being. But it does not speak *through* the quantifiers in those propositions. The power that speaks through the ∃, the power that speaks the value of a variable into being, is not propositional. Since it is not propositional, that voice, that soundless voice, is not the Lexetor. It is a new power, a new voice, that calls into being the values of variables bound to quantifiers. This new power, which emerges within the self-affirmation of the Lexetor, is a further expression of the power of the One.





The Lexetor *denies* some ontic propositions; it makes them false. The negative policy of the One works in any false ontic proposition. For example, it works in the proposition that denies that there exists a biggest number. It works in the proposition that the Russell Set (the set of all sets) does not exist. If any ontic proposition is false, then the power of the One refuses to pass from the ∃ through that falsity into the variable that is bound to it. The *refusal* to pass through *falsity* is the negation of a negativity; it mirrors the self-negation of non-being. Not animated by the One, the variable does not emanate any value. No object exists. A false ontic proposition does not speak at all. But the voice that refuses to speak here is not the voice of the Lexetor; the Lexetor spoke the negation ~($\exists x$)(...x...). The voice that refuses to call into being the value of the variable x is not a propositional voice. It is not the Lexetor. It is a new power. It is the negative side of the power that calls into being the values of bound variable.



The Lexetor *affirms* some ontic propositions; it makes them true. The positive policy of the One works in any true ontic proposition. If any ontic proposition is true, then the One *animates* it, and its truth permits the power of the One to pass through the ∃ into the variable that is bound to the ∃. Animated by that power, the variable emanates a value. The value of that variable is an existing object. This reasoning repeats Quine's slogan that "to be is to be the value of a bound variable". A true ontic proposition asserts the existence of some object. To assert is to speak; it is a *semiotic act*. Animated by the power of truth, a true ontic propositions *speaks its object into being*. If any ontic proposition ($\exists x$)(...x...) is true, then the x is an activated name. Its energy manifests an object to which the name refers. The name creates *ex nihilo* the existence of its referent. When an energized name creates *ex nihilo* its object, that act is *magical*. Hence every true ontic proposition is a magician. Its animated meaning casts a spell. Thus ($\exists x$)(...x...) asserts with a soundless voice that x exists.

The Constructor. With the production of a true axiom, the power of the Lexetor (which is merely alethic, that is, propositional) comes to an end. When the axiom emanates its objects, some new power is at work. This new power is derived from or emerges from the alethic power of the Lexetor. This new power is the *Constructor*, the power which moves from axioms to their objects. Here the Constructor is the agentless agency involved in the production of mathematical objects. The Constructor is the power of the One rendered mathematical. Since it emerges from the Lexetor, it is the tertiary self-surpassing surpasser of all, and so it is the *tertiary hypostasis*.

2. The Simple Initial Object

The Logic of Dependency. Plotinus says the One generates the beings in an orderly way (E 2.9.13, 3.3.3, 3.6.17, 5.4.1, 6.7.42). He knew about Euclidean axiomatic geometry (E 4.9.5.24-26, 6.3.16.20-23). So the rational self-organization of the Lexetor bears its axioms into existence in an orderly sequence. These axioms define *dependencies* among objects. There are reasons against self-dependency. By definition, if x depends on y, then it is logically possible that y exists and x does not. However, it is not logically possible that x exists and x does not. So x depends on x is contradictory. Self-dependent objects are self-inconsistent; they are self-incongruous. So the Lexetor affirms that, for any object x, x does not depend on x. There are reasons for the transitivity of dependency. Since dependencies entail if-then implications, and since if-then implications are *transitive*, dependency is transitive. Suppose Eric is the son of Dean, and Dean is the son of Raymond. If Raymond does not exist, Dean does not exist; but then Eric does not exist. So if Raymond does not exist, Eric does not exist. So the Lexetor affirms that dependency is transitive.

Existence Axioms are Emanated in Order of Dependency. The Lexetor expands from less dependent things to more dependent things. On the one hand, if an axiom defines later things which depend on earlier things, but those earlier things have not yet been defined, then that axiom fails to expand the system of objects. And that's a reason against emanating that later axiom before the earlier things have been defined by their own earlier axiom. On the other hand, if some earlier things have been defined by their own earlier axiom, and some later axiom defines some later things which depend on those earlier things, then that later axiom *does* expand the system of objects. And that's a reason for affirming that later axiom after the earlier axiom. So as long as axioms preserve consistency, there are reasons for adding them in order and no reasons against adding them in order. So the Lexetor produces them in order.

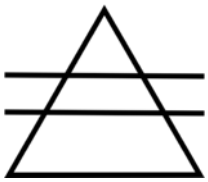
Initial Existence Axioms for Independent Objects. The orderly generation of existence axioms makes three priorities which determine the initial objects. (1) Since all *dependent* objects depend on *independent* objects, that dependency provides a reason for introducing at least one independent object before any dependent objects. (2) Since all *contingent* objects depend on *necessary* objects,

that dependency provides a reason for introducing at least one necessary object before any contingent objects. (3) Since all *complex* things depend on *simples*, that dependency means simple objects come before complex objects. These priorities are jointly satisfied by and only by objects that are independent, necessary, and simple. Consequently, the *first existence axiom* states that there exists at least one initial object which is independent, necessary, and simple. After this first existence axiom, the three priorities shape the *later existence axioms*. They entail that later objects are more dependent than earlier objects; later objects are more contingent than the earlier objects; and later objects are more complex than the earlier objects.

The First Existence Axiom. The Lexetor produces existence axioms in an orderly way. It affirms the *first existence axiom,* which asserts that there exists at least one initial, independent, necessary, and simple object. Plotinus argued that there exists some initial object before all the others (E 5.4.1.1-20). Since all productivity occurs through imitation, the initial object resembles the Zero. Its definition repeats the emptiness of the Zero: there does not exist any object inside the initial object. It has to be the simplest kind of insideness.

Membership. The simplest insideness is *membership*: members are inside of their sets. So the simple initial object is a set that contains no members – it is the empty set. The non-being of the Zero is reflected in the fact that *there does not exist* any *x* such that *x* is a member of the empty set. And since sets depend on their members, the empty set does not depend on any other object. It is independent. It is the simple, independent, necessary, initial object.

Empty Set Axiom. Since the Lexetor is that power which brings propositions into being, and gives them truth-values, the Lexetor bears this axiom into being and makes it true: (there exists *x*)(*x* is the empty set). More precisely, (∃*x*)(*x* is the empty set). The One appears in this axiom as the existential quantifier ∃. Since this axiom is true, the One animates it. The power of the One passes from the ∃ to the *x* that is bound to it, driving it to produce a value. The power that speaks from this variable is the *Constructor*. Hence the Constructor emanates an object: the empty set. The truth of this axiom supports the existence of its object. Similar remarks apply to other true ontic axioms. The power of the Constructor belongs to air, but air tending towards fire; hence this power is heat, whose glyph is an upwards pointing triangle with two barred lines.



3. Distinct Copies Do Not Exist

The empty set exists. It is consistent with this statement that there are many empty sets. Of course, if there were many, they would all be distinct copies of each other. And if there were many distinct copies of any object, they would not add any new content to the system of objects. Since the copies add no new content, there cannot be any reasons for adding them. And that is a reason against adding them. So the Lexetor reasons into existence an axiom which asserts that there are no distinct copies of any objects. This means that, if any object *x* is a copy of any object *y*, then *x* is identical with *y*. Copies agree on all their properties. Since this agreement is indiscernibility, the denial of any distinct copies is equivalent to the identity of indiscernibles:

- *Identity of Indiscernibles*. For any *x*, and for any *y*, if *x* is indiscernible from *y*, then *x* is identical with *y*.

Plotinus expresses this axiom when he asserts the uniqueness of the initial object (E 5.4.1.1-20). The Identity of Indiscernibles is the reverse of the Indiscernibility of Identicals. It's easy to get these two principles mixed up. If we put these two principles together, we get our definition of identity:

- *Identity*. For any *x*, and for any *y*, the fact that *x* is identical with *y* is equivalent to the fact that *x* is indiscernible from *y*.

Indiscernibility is agreement on all properties. So far the Lexetor produces only a single dependency relation, namely, membership. All properties are defined in terms of membership. Sharing all the same properties means sharing all the same members. If two sets have all the same members, then they have the same *extensions*. So the Lexetor produces this axiom:

- *Extensionality*. For any *x*, and for any *y*, to say $x = y$ means that both *x* and *y* share exactly the same members.

4. Reasons Against Regressions

Although membership is a dependency relation, its exact meaning remains unclear. Dependency permits infinite *progressions* of increasingly dependent objects. But does it permit infinite *regressions* of decreasingly dependent objects? Effects depend on their causes. Plato argued against infinite regresses of causes (*Laws*, 894e-895b). So did Aristotle (*Metaphysics*, 994a2-19). Conclusions depend on their premises. And Aristotle argued against infinite regresses of premises (*Posterior Analytics*, I.2). Plotinus also rejects infinite regresses (E 2.9.1.50-60, 3.6.1.1-5, 5.1.6.22-27). Were these thinkers correct?

Two axioms are needed to emanate an infinite regression. The *Initiation* axiom says there exists some thing *x*. The *Backwards* axiom says that for every thing *x*, there exists at least one distinct thing *y* such that *x* depends on *y*. You can spell this out using parts and wholes: (1) there exists some thing; (2) every thing has some parts on which it depends. Say there exists some water molecule. It depends on its hydrogen atoms and oxygen atom. They depend on their protons, neutrons, and electrons. The protons and neutrons depend on their quarks. Now the quarks depend on sub-quarks. And so it goes, endlessly.

From the two axioms for infinite regressions, the Lexetor reasons twice to contradictions. (1) When Initiation states that there exists some thing *x*, that thing is not defined in terms of any other things. So it does not depend on any other things. But Backwards asserts that *x* does depend on some other things. And that is contradictory. (2) Backwards states that *x* depends on *y*. However, since *y* is defined in terms of *x*, it is also true that *y* depends on *x*. But if *x* depends on *y*, and *y* depends on *x*, then *x* depends on *x*. But that is logically impossible. Only non-being depends on itself, and that self-dependency is self-refuting; it negates itself. So the Backwards axiom is contradictory. By reasoning to these two contradictions, the Lexetor gains two reasons against emanating Backwards. Since any axiom that introduces infinite regressions of dependencies must resemble the contradictory Backwards, the Lexetor reasons against all such axioms. Hence infinite regressions of dependencies cannot exist. Although infinite regressions can exist, they cannot be regressions of dependencies.

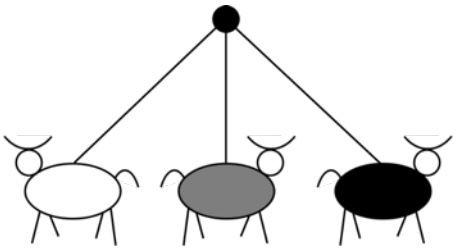
Foundation. By this reasoning, the Lexetor clarifies both the meaning of dependency and the nature of the initial object. Every regression of dependencies

bottoms out after finitely many steps in some independent simple object.[19] And the axiom of extensionality entails that this simple object is unique – it is the empty set. By reasoning against infinite regressions, the Lexetor produces *Foundation*. While the empty set does not depend on any object, every other object ultimately depends on the empty set. The Lexetor produces and makes true both Extensionality and Foundation. These act as constraints on the speech of the Constructor, keeping it harmonized.

5. Every Many has its One

Plato often says that when many things are similar in some way, then *there exists* some similarity which they all have in common. The similarity shared by many oxen is the *one of the ox* (*Philebus*, 15a). The similarity shared by many things is their *form*.[20] Each Platonic form is a one-over-many (Dancy, 1984; Hauser, 2010) The one of the ox is the form of the ox, in which many particular oxen participate. Each particular ox is an *example* or *instance* of the form.

Plato says "we usually posit some one particular form in connection with each set of many things to which we apply the same name" (*Republic*, 596a7-8). Digitalists just identify the forms with their sets of things. The form of the ox is the set of all oxen; every ox participates in this set by being a member of it. The Figure on the right shows a set of oxen. The one over those oxen is the black dot. The names associated with forms are typically common nouns (like "man") or adjectives (like "red"). These names are *predicates*. Predicates are linguistic terms that refer to properties. It is tempting to say that for any property F, there exists the *set* of all *x* such that *x* is F. But if there is a set for every property, then there is a set of all *x* such that *x* is a set. This is the Russell Set. Since that set is a set, it is a member of itself. And since sets depend on their members, that set depends on itself. But it is contradictory to say that any object depends on itself. And the Lexetor does not emanate any axioms that introduce contradictions.



To avoid this contradiction (and others like it), logicians introduced the distinction between *sets* and *classes*. Every set is a class. But some classes are too general to be sets, and they are the *proper classes*. While sets are members of other classes, proper classes are not members of any classes. There exists a *class* of all sets. Since that class is not a member of itself, or of any other class, it is a proper class. Proper classes are so general that they cannot be surpassed by any greater entities. They are unsurpassable – they are transcendental. As such, they are the *ecstasies*. They are entities, but not beings among beings. They exist ontologically, but not ontically, not like beings. So consider the *comprehension principle* that for every predicate F, there exists some *class* of Fs. This principle introduces no contradictions. There is no reason against it.

Comprehension. Comprehension gives us sets with many members (like the set of oxen). So it expresses the Platonic principle that every many has its one. But it also gives us sets with exactly one member. Consider the set of all *x* such that *x* has no members. This is the set that contains only the empty set. And it gives us sets with no members. Consider the set of all *x* such that *x* is not identical with *x*. It gives us empty forms, that is, forms with no instances. Plato says the

[19]The foundation axiom is an existence axiom: for every non-empty set *x*, *there exists* some *y* such that *y* is a member of *x* and the intersection of *x* and *y* is empty.

[20]*Parmenides*, 128e-133a; *Euthyphro*, 5c-6e; *Republic*, 476a, 507a-c, 596a-597d; *Philebus*, 14c-18e; *Phaedo*, 74a-e, 78d-e; etc.

form of the ideal city has no instances (*Republic*, 592a-b). If that is right, then it is a *one over none*. Although it is unclear whether Plato really admits empty forms (Alican, 2017), they are logically possible. Thus comprehension expands the system of consistently definable objects. And it expands it further than the Platonic one-over-many principle. So the Lexetor produces *Comprehension*: for any property F, there exists the class of all *x* such that *x* is F. This class may be a set or a proper class.

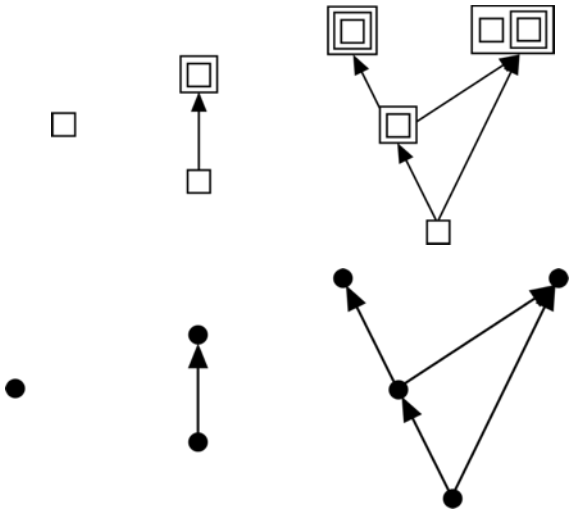
6. The Iterations of Objects

Plato says that every many of the same kind has its one. But Plotinus goes further. He says *every many has its one* (E 3.8.10, 5.6.3, 6.6.13, 6.9.1). He seems to be asserting this principle: for every plurality of objects, there exists some class which contains its objects. But plurality is vague. This vagueness is a reason against this principle. It can be made more precise if we start with the simplest plurality, which contains exactly two objects. The result is a *principle of pairing*: for any object *xander*, and for any other object *yonder*, there exists some class which contains them and only them. Since this class is specific, it is just a set. Since sets are named by listing their members, this pair set is {xander, yonder}. Given Superman and Batman, pairing makes the set {Superman, Batman}. This new principle allows xander and yonder to be identical. If they are identical, then {xander, yonder} is {xander}, which is also {yonder}. It's like making a set that contains Batman and Bruce Wayne. They are the same person. So {Batman, Bruce} is just {Batman}, which is also {Bruce}.

Both Plato and Plotinus permit forms to have single instances. Plato says our universe is the only instance of its form (*Timaeus*, 31a-b, 55c-e). Its form is a *one over one.* Plotinus says that each thing has its own form (E 5.7; see Rist, 1963; Mamo, 1969; Gerson, 1994: 72-8). The form of Socrates has exactly one instance, namely, Socrates. Since forms are sets, the form of Socrates is the set {Socrates}. Just as the form is not identical with its one instance, so the set is not identical with its one member. Thus {Socrates} is not Socrates. More generally, pairing an object with itself makes a set with one member. A set with one member is called a *unit set*. Given the initial object {}, the general pairing principle entails the existence of {{}}. This principle emanates an infinite series of sets {}, {{}}, {{{}}}, and so on. Pairing {} with {{}} makes {{}, {{}}}.

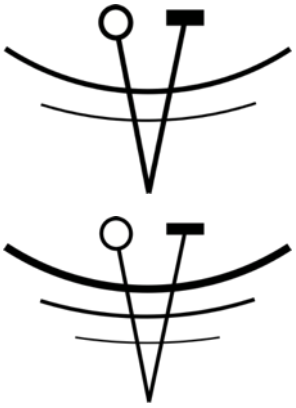
Pairing. The emanative act from any set *x* to its unit set {*x*} entails no contradiction. It is consistent to assert that every set *x* is surpassed by {*x*}. Likewise the emanative act from any distinct sets *x* and *y* to their pair {*x*, *y*} does not entail any contradiction. It is consistent to assert that any distinct sets *x* and *y* are surpassed by {*x*, *y*}. Since these are consistent, there are no reasons against asserting the general pairing principle. But are there any reasons for asserting it? The Lexetor maximizes congruency. It does this by expanding the system of consistently definable objects. And if the Lexetor affirms the general pairing principle, then it expands that system. So there is a reason for asserting it. Hence it affirms this Pairing Axiom: For any *x*, and for any *y*, there exists {*x*, *y*}. Since *x* can be identical with *y*, it follows that for every *x*, there exists {*x*}.

The Empty Set Axiom, plus the Pairing Axiom, are two voices in the Constructor. But the One harmonizes them into a single constructive act of speech, which emanates an infinite system of sets. The Constructor speaks with a soundless voice, saying that all sets derived from these axioms exist. The Constructor emanates those sets in an orderly way. It makes ranks of increasingly complex sets. The first rank contains just the empty set {}. It can be pictured as an empty box. Applying Pairing to {} makes {{}}. This is a one over one. So the second rank contains just {{}}. This is an empty box inside a box. We depict the fact that {} is a member of {{}} by drawing an arrow from {} to {{}}. Now we pair {{}} with itself to get {{{}}}. And we apply pairing to {} and {{}} to get {{}, {{}}}. So the third rank has these two new sets. The top Figure on the right shows these ranks of sets as nested boxes. The bottom Figure shows these sets as dots linked by membership arrows.



Union. Although pairing makes sets from sets, it doesn't make all the sets. You can't use it to make any sets with three members. Suppose you have the set {A, B} and the set {C}. Pairing just makes {{A, B}, {C}}. How can we make {A, B, C}? Think of sets as buckets. The *union axiom* says that if you have any buckets, you can dump their contents into a new bucket. If you dump {A, B} into a bucket, and {C} into that same bucket, then you get the bucket {A, B, C}. Thus {A, B, C} is *the union of* {A, B} *and* {C}. Given any sets, it is consistent to affirm their union. Since unions create no contradictions, there are no reasons against them. And since unions expand the system of consistently definable sets, that expansion is a reason for affirming unions. Therefore, the Lexetor affirms this axiom: *Union*. For any sets *x* and *y*, there exists a set which contains all members of *x* and all the members of *y*. This is the union of *x* and *y*, aka *x* unioned with *y*. The union of *x* and *y* doesn't contain any things not in *x* or *y*.

The axioms of comprehension, pairing, and union are all ontic propositions. And the Lexetor affirms them, making them true. Since they are true, they are animated by the power of the One. Through that power, each axiom *asserts* with a soundless voice that its objects exists. These assertions are semiotic actions, they are constructive acts of speech. These axioms *speaks their objects into being*. When the axioms are animated by truth, the names (the variables) in those axioms manifest objects to which those names apply. The names manifest their referents. Hence these axioms act magically. Since no mentality is required for this magical speech, these axioms speak with soundless voices. Since they all speak together, they speak harmoniously. They *sing* together as one. The conjunction of these axioms sings like a perfectly harmonized chorus with a single soundless voice. This chorus, which sings a hymn to the Good, is the Constructor. While the Lexetor makes the axioms, and the One animates them, their voices are parts of the Constructor. The Constructor emerges from the Lexetor.

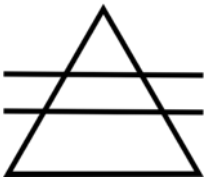


All these axioms show that complex sets depend on simpler sets. Sets evolve from simpler into more complex. Obviously, this is not biological evolutions. Nevertheless, it is cumulative: complexity gradually accumulates as sets beget more complex sets. The evolution of set-theoretic complexity supports Daniel Dennett's *Principle of the Accumulation of Design*. That principle states that "since each new designed thing that appears must have a large design investment in its etiology somewhere, the cheapest hypothesis will always be that the design is largely copied from earlier designs, which are copied from earlier designs, and so forth" (1995: 72). The design (that is, the structure) of later and more complex sets is entirely copied from the design of earlier and simpler sets. But so far, all the sets are only finitely complex. The sets produced by the Constructor from these early set theoretic axioms make the first tree of beings over the island of being-itself.

8. The Axis of the World

1. The Axis Mundi

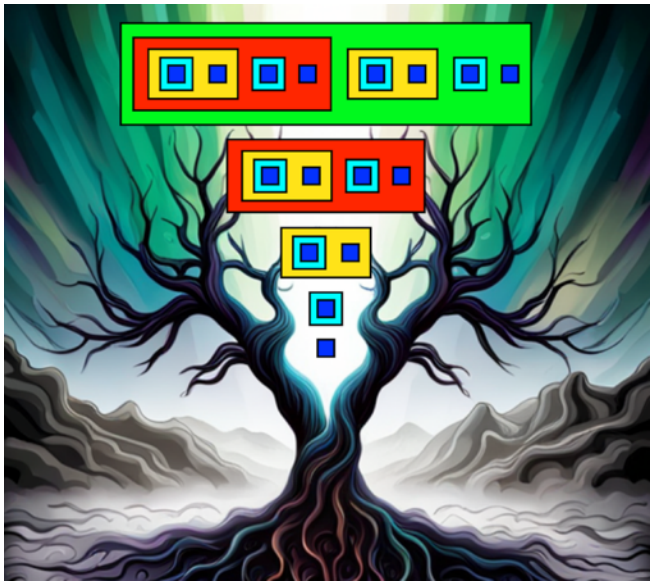
Ancient thinkers often portrayed philosophy as a *spiritual discipline* filled with *spiritual exercises* (Hadot, 1995) Spiritual exercises help you to improve your character, to gain mental strength and greater virtue. Spirituality itself is the craft of ethical self-surpassing. Plato thought of mathematics as a system of spiritual exercises for improving your mind (*Republic*, 537b-d; Burnyeat, 2000).



Here we offer a spiritual exercise focused on numbers. Our spiritual exercise follows an *incantation*. By following the incantation, you focus your mind on an object, namely, the *axis mundi*, the vertical axis of nature. Plato referred to this axis as the *spindle of necessity* (*Republic* 616b-c). For digitalists, this is the series of numbers. By going through this incantation, you can cause an image of the *axis mundi* to appear in your mind. Thus you can conjure this image in your mind – you can visualize the *axis mundi*. Plotinus offers many visualization exercises (E 5.1.2.1-23, 5.8.9.1-30, 6.4.7.22-47, 6.7.15.25-33). And visualization exercises are central in Wicca (Sabin, 2011: ch. 3). By visualizing the *axis mundi*, you construct a mental icon, a sign, of that mathematical structure.

2. The Evolution of Numbers

The Platonic theory of forms entails an endless progression of ever greater forms of largeness (*Parmenides*, 132a-133a). This progression has a numerical structure (Patras, 2020: ch. 5). It also has a set-theoretic structure: each next form is the set of all earlier forms.[21] Let the initial form be the empty set {}. This is the number 0. The next form is the set of all earlier forms. So this next form is {0}. This is the number 1. Since the next form is the set of all earlier forms, the next for is {0, 1}. And this is the number 2. Thus each number is the set of all lesser numbers. This is the definition of the ordinal numbers developed by John von Neumann (Cohen, 1971: 467; Pesic, 2004). Figure 8.1 shows the first four numbers as sets and (equivalently) as nested boxes. You can practice visualizing these boxes. Your mental images are iconic signs of the numbers.

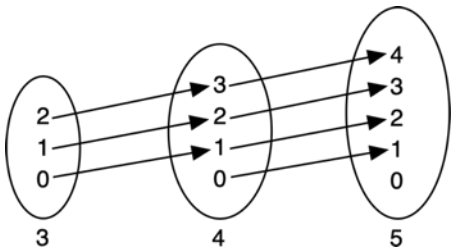


The von Neumann ordinals have many interesting mathematical properties. But they have an important axiological property. Axiology is the theory of value. The transition from any ordinal n to n+1 is *Pareto optimal,* named for the Italian economist Vilfredo Pareto. To put it roughly, a mapping of an old whole into a new whole is Pareto optimal if and only if it does not make any old part worse and it does make at least one old part better. Say there is a *counterpart relation* that associates old parts with new parts. Every old part has a new counterpart which is at least as valuable as itself. At least one old part has a new counterpart which is more valuable than itself. Here value is just numerical value. The parts of any number are the lesser numbers. So the parts of 3 are 0, 1, and 2, while the

[21]The *Parmenides* (132a-133a) produces a series of forms like the von Neumann ordinals. Form L1 is the set of large things. Since form L1 is also large, form L2 is L1 unioned with {L1}. Form L3 is L2 unioned with {L2}. And so it goes.

parts of 4 are 0, 1, 2, 3, and 4. Now let the counterpart relation map each part *x* in the old number *n* onto some new part *x*+1 in the next number *n*+1.

The Figure on the right shows how 3 maps onto 4, and 4 to 5. Each number in 3 is mapped onto a bigger counterpart in 4. Thus every part of 3 is mapped onto a more valuable part in 4. The change from 3 to 4 is Pareto optimal. All changes from any number to its successor will also be Pareto optimal. The series of numbers is a simple illustration of evolution which increases value. And 4 adds value by adding 0. The added 0 is a simple number which will evolve in complexity.



3. From the Finite to the Infinite

Plotinus affirms that the productive power of the One is infinite (E 2.4.15.17-20, 4.3.8.35-40, 5.5.10.22-24, 6.2.21.5-15, 6.7.32.20-23, 6.9.6). He seems to affirm an infinite number (E 6.6.17). His concept of infinity resembles the set theoretic concept of infinity (Stamatellos & Mentzeniotis, 2008). On the von Neumann definition of numbers, the first infinite number is the set of all lesser numbers. Since every finite number is less than an infinite number, the first infinite number is the set of all finite numbers. It is standardly referred to using the Greek letter omega ω. So ω is {0, 1, 2, 3, . . .}.

The infinite number ω cannot be emanated by combining finite numbers in finite ways. It *transcends* finitude. The concepts of *progressions* and their *limits* help to clarify this transcendence. To say that a series of objects is a *progression* means that it contains some initial object and that every object in the series is surpassed by exactly one successor in that series. So the series of finite numbers is a progression. To say that a number L is the *limit* of a progression P means that L is minimally greater than every number in P. The number ω is greater than every finite number. Moreover, ω is the smallest number greater than every finite number. So ω is *minimally greater than* the progression of finite numbers. Thus ω is the limit of the progression of finite numbers.

Infinity. The *limit law for numbers* asserts that every progression of numbers is surpassed by exactly one limit number. Extending our axioms to include this law preserves consistency. Since the Lexetor maximizes self-congruency by expanding smaller theories into larger theories, the Lexetor affirms the limit law for numbers. Although we can get infinity by applying Comprehension to the finite numbers, the significance of infinite transcendence provides the Lexetor with a reason for emanating a distinct infinity axiom: the set of all finite numbers exists. This axiom speaks with a soundless voice, and its constructive speech act is part of the Constructor. The Constructor emanates the infinite set ω.

Although ω is infinite, it is not the greatest infinite number. The successor law entails that it is surpassed by ω+1. Plus the concept of limits can be generalized in many powerful ways. Every infinity is surpassed by even greater infinities. Mathematicians often use first letter of the Hebrew alphabet to refer to these greater infinities. This first letter is *aleph*, written as ℵ. The first aleph is $\aleph_0$. It is identical with ω. Since the number of finite numbers is $\aleph_0$, and since the finite numbers used for counting, $\aleph_0$ is said to be a *countable* infinity. But $\aleph_0$ is surpassed in an extreme way by $\aleph_1$. The next greater infinity $\aleph_1$ is *uncountable*. From there, the infinities soar off into the abstract sky.

Many of these infinities are so great that they cannot be derived from simpler infinities (Drake, 1974; Kanamori, 2005). These *strong infinities* can only be

emanated by their own existence axioms. Since the Constructor maximizes self-congruency, it extends the *axis mundi* as far as consistently possible. For any theory of numbers, if the Constructor can consistently add some stronger infinity axiom to that theory, then it adds it. Hence it extends earlier and smaller number theories into later and greater number theories.

4. The Incantation for Numbers

The Constructor. An incantation is a patterned semiotic act. An incantation is a form of constructive agency, which further defines the activity of the Constructor. It is a magic spell, in which true ontic propositions (the laws of the incantation) speak their objects into being. These laws speak together harmoniously, so that they sing with a single soundless voice. They sing a hymn to the Good. The sound of this chorus is part of the Constructor. Through this musical sound, the Constructor chants its objects into existence.

The incantation for numbers involves only the ordinal numbers: 0, 1, 2, 3, and so on. Plotinus devoted an entire treatise in his *Enneads* to numbers (E 6.6; see Slaveva-Griffin, 2009). He says that the numbers come before the other beings (E. 6.6.9). They are unities which bind things together. He seems to think of numbers as collections (E. 6.6.5-16, see 5.5.5). Digitalists say these are the von Neumann ordinals. Consequently:

The Initial Law for Numbers. The initial number is zero, which is the set of all lesser numbers. Since there are no lesser numbers, zero is does not contain any members. It is the empty set. Thus 0 = {}. The *initial law for numbers* is just the empty set axiom. Since the dyad already affirmed that axiom, zero exists. The number zero is an existing thing that symbolizes the non-existing Zero. It symbolizes Zero by analogy: just as non-being does not contain any beings, so 0 does not contain any numbers. Since the empty set axiom is a voice in the Constructor, the initial law sings in the Constructor. Its song is the empty set.

The Successor Law for Numbers. Every number n is surpassed by a minimally greater successor number n+1. Since every number is the set of all lesser numbers, n+1 is {0, . . . n}. Thus every n+1 is the union of n with {n}. The pairing axiom emanates {n}. And the union axiom emanates n unioned with {n}. Since those axioms are voices singing in the Constructor, the successor law sings in the Constructor. Its song is the existence of every successor set.

The Limit Law for Numbers. The initial and successor laws entail an infinite series of finite numbers. Since "x is a finite number" is a predicate, the Platonic comprehension axiom entails that there exists some class of finite numbers. Since this class is specifically defined, it is a set rather than a proper class. Stronger axioms of infinity emanate greater infinities. Every infinite number is

surpassable. Since the laws that go into the limit law sing in the Constructor, the limit law sings in it too. Its song is the existence of every limit number.

The Final Law for Numbers. The *final law* for numbers gathers them all into the *axis mundi*. It contains every consistently definable number. The *axis mundi* exists within the song of the Constructor. The *axis mundi* is a *lineage*. A lineage starts with an initial object; any object in a lineage has exactly one successor in that lineage; any progression of objects in a lineage has exactly one limit in that lineage. On any lineage, complexity steadily accumulates. All other lineages are based on the *axis mundi*. Any object in any other lineage is associated with some number on the *axis mundi*. The *axis mundi* is the backbone of nature. It is the vertical axis of the all-wood, the green-wood, and the world tree.

5. The Ecstasy of Numbers

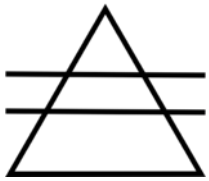
Absolute Infinity. Just as the series of finite numbers is infinite, so the series of *surpassable* numbers (that is, the *axis mundi*) is *unsurpassable*. So the *axis mundi* is an unsurpassable series of surpassable numbers. Since the series of finite numbers is an infinite number, it looks like the series of surpassable numbers should be an *unsurpassable number*. However, there are two arguments against saying that the *axis mundi* is a number. First, every number is surpassed by some greater number; so if the *axis mundi* were a number, then it would be both surpassable and unsurpassable; but that is impossible. Second, if the *axis mundi* were an unsurpassable number, then it would be a number; but then it would be in the *axis mundi*; thus it would be surpassed by itself; but that is impossible. So the *axis mundi* is not a number of any kind. Still, it has numerical properties. It is even said to be *absolute infinity*, symbolized by Ω. Since absolute infinity is unsurpassable, it exists at the rank of the Good. It is an avatar of the Good in the guise of a number.

Unsurpassability. Digitalists say that the adjective *unsurpassable* overcomes the meaning of its noun by exceeding that meaning. Just as a glass eye is not an eye, so an unsurpassable number is not a number. The words *transcendental*, *ideal*, and *absolute* likewise negate their nouns. So an unsurpassable number is an ideal, transcendental, or absolute number. The *axis mundi* is an unsurpassable number. Any unsurpassable object is an *ecstasy*. More precisely, an ecstasy is the finality of an unsurpassable series of surpassable objects. Finalities resemble limits; however, they exceed limits. For the *axis mundi*, the finality is just identity. The *axis mundi* is identical with the unsurpassable series of surpassable numbers. It is the ecstasy of numbers. The *axis mundi* rises through the sky. This is the third part of the pagan image. So far, we called to water, earth, and air. But the watery Abyss is dark; the earth is dark; and the sky is only night.

9. The Tree of Strings

1. Strings of Zeros and Ones

Repetition. The One drives the Lexetor to emanate the axioms for numbers. As those axioms sing together with their soundless voices, the Constructor emanates the numbers. Plotinus says that everything strives to express itself by producing something in its own likeness or image (E 5.1.6.30-40, 5.4.1.25-35). He uses analogies: the sun expresses light; fires heat; ice cold; perfumes odors. The Constructor emanates the beings like springs create streams (E 3.8.10.5-10). Thus expression is imitation or repetition. It is ritual mimesis. After generating the numbers, the Constructor expresses itself further in some new way that imitates or ritually repeats its old self-expression.



The Binary Strings. Expression is repetition. Since the Constructor has expressed itself through numbers, its further expression also involves numbers, but emanated in some new way. On the one hand, if some new way *does not repeat* the dialectic of the Zero and the One, then that is a *reason against* it; it is a reason for the Constructor to not follow that way. On the other hand, if some new way *does repeat* that dialectic, then that repetition is a *reason for* it; it is a reason for the Constructor to follow that way. A way that repeats that dialectic does exist. The *number* 0 imitates the Zero, and the *number* 1 imitates the One. So the forms which repeat the dialectic of the Zero and the One are made of 0s and 1s. The dialectic of the Zero and the One repeats itself in the production of sequences 0s and 1s. But it repeats itself by repeatedly imitating its production, and this repeated repetition is *recursion*. Hence the Constructor emanates recursively defined. Collections of sequences of 0s and 1s. Ancient Platonists did not know about binary numbers. But they did use odd-even pairs to make a binary tree (Stenzel, 1924: 31; Wagner, 1985: 284-88; Hosle, 1988; Granieri, 2021). Its root is the number 1. One branch rises from 1 to 2, and another from 1 to 3. Now 2 branches into 4 and 5, and 3 into 6 and 7. Since we do know about binary numbers, we will use them to build our binary tree.

2. Some Finite Ramifications

To define the seedlike forms, we offer the *incantation for strings*. It occupies the fifth ring of the Lexetor. This incantation repeats the incantation for numbers; it therefore has four laws. Each law maximally extends the system of strings. The power of the One enters these laws; it makes them true. The laws in this incantation define some constructive agency; they further define the Constructor. The agency of the Constructor shapes itself musically. Its constructive agency maximizes its self-congruency by emanating the maximal system of strings. The music in the Constructor is self-bootstrapping, self-organizing, and self-amplifying. So the Constructor starts with the simplest string. From every simpler string, it produces greater strings. And it iterates endlessly. It produces ramifications of strings, and the iterated ramifications make the tree of strings. For every number n on the *axis mundi*, there exists an n-th ramification of strings. The n-th ramification is V(n). The four laws are:

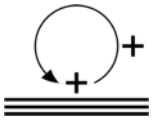
The Initial Law for Strings. The initial law for strings repeats the dialectic of the Zero and One from the very beginning. But it repeats it ontically, within the order of beings. At the start, this dialectic ontically imitates the emergence of the One from the Abyss of non-being. Just as being-itself emerges from non-being, so some initial being emerges from being-itself. And just as that which

first emerges from non-being is the emptiness of the One, so that which first emerges from the emptiness of the One is some empty being. There does not exist any being in this empty being. Here the relation of insideness is the simplest kind of insideness, which is *membership*. Hence the empty being has no members. But this memberless being is just the *empty set*. All this dialectical activity drives the Lexetor to produce the initial law for strings, which asserts that V(0) is the empty set. The power of the One enters this law, making it true.

The Zeroth Ramification. The truth of the initial law for strings drives the Constructor to emanate the empty set. It is the zeroth act of the Constructor. Since the emergence of the empty set from the One *imitates* the emergence of the One from the Zero, the empty set *represents* or *symbolizes* the Zero within the order of beings. It is the *ontically existing* symbol of the Zero. It is the number 0. Likewise, it is the zeroth ramification V(0) in the tree of strings. However, just as being-itself is the ground of the beings, which is not a being, so the empty set is the *ground of strings*, which is not a string. The empty set is written {}. Hence V(0) is {}, but {} is 0. We use a red dot to visually symbolize the empty set. The One exists in the logical core of this red dot, hidden in its center.

The Successor Law for Strings. For any *n* on the *axis mundi*, if the Constructor emanates some ramification V(*n*), then it emanates its successor ramification V(*n*+1). But this emanation repeats the ontological dialectic of the Zero (which is non-being) and the One (which is being-itself). When this ontological dialectic is repeated, through ritual mimesis, it becomes ontic, and it expresses itself via two ontic operations.

Rejection. The Zero, that is, non-being or nothing, is pure negativity; it negates, excludes, rejects. Hence the ontic action of the Zero is rejection; it is the binary digit 0. The Zero expresses itself in the rejection of old objects for the sake of new objects. This is creative or constructive rejection. The ontic action of the Zero is the rejective action of the Constructor in creating ramifications.



Selection. The One is the self-negation of non-being. As such, the One is the rejection of rejection, the exclusion of exclusion. Since the negative of the negative is the positive, the exclusion of exclusion is inclusion. Hence the ontic action of the One is *selection*; it is the binary digit 1. The One expresses itself ontically in the selection of old objects for the sake of new objects. This is the selective action of the Constructor.

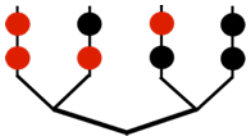
Maximized Selection and Rejection. When any predecessor ramification surpasses itself into its successor, the Constructor working in that predecessor performs that surpassing by maximizing its rejective and selective actions *from* that predecessor *to* its successor. Maximization entails that predecessor blossoms forth in every possible selective and rejective way. For any *n*, the successor ramification V(*n*+1) contains all ways of rejecting and selecting the objects in its predecessor V(*n*). The digit 0 is rejecting, while 1 is selecting. For any ordered collection of k objects, a binary string of length k is a way of rejecting and selecting those objects. For example, given the ordered set of objects A, B, C, and D, the string 0110 rejects A, selects B, selects C, and rejects D. Since each V(*n*) is an ordered set of objects, every way of rejecting and selecting objects in V(*n*) is a string of length *k*, where *k* is the number of objects in V(*n*), that is, its cardinality. Since V(*n*+1) contains all ways of rejecting and selecting objects in V(*n*), and those ways are strings, it follows that the successor law goes like this: For any *n* on the *axis mundi*, the successor ramification V(*n*+1) contains all strings of length *k*, where *k* is the number of strings in V(*n*). Equivalently, if V(*n*)

contains *k* strings, then its successor V(*n*+1) contains all strings of length *k*. The power of the One enters the successor law for strings, making it true.

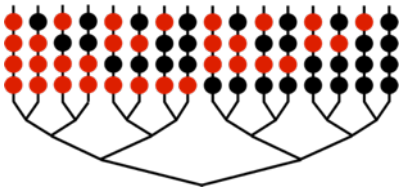
The First Ramification. The truth of the successor law for strings drives the Constructor to emanate the successor of V(0). It does this by driving the initial ramification V(0) to surpass itself into its successor V(1). This successor is the first ramification. Since V(0) has zero members, the successor law for strings entails that V(1) contains all strings of length zero. There exists exactly one string of length zero, namely, the *null string* or the *empty string*. It is the simplest string. Logicians call it Λ. Hence V(1) contains Λ and only Λ. That is, V(1) is {Λ}. The first act of the Constructor is the emanation of {Λ}. Among strings, the null string is equivalent to the empty set, that is, to the number 0. Hence V(1) is {0}, but {0} is 1, so V(1) is 1. This first ramification is the ontic symbol of the One. We use a black dot to depict the first ramification.

The Second Ramification. The truth of the successor law for strings drives the Constructor to emanate the successor of V(1). It does this by driving the first ramification V(1) to surpass itself into the second ramification V(2). Since V(1) contains one string (that is, the null string), V(2) contains all strings of length 1. There are two strings of length one, namely, 0 and 1. Thus V(2) contains those two strings. The second ramification V(2) is the set {0, 1}. The second ramification is shown a branching into 0 and into 1. The common root of this branching depicts the unity of the set {0, 1}.

The Third Ramification. The truth of the successor law for strings drives the Constructor to emanate the successor of V(2). It does this by driving the second ramification V(2) to surpass itself into the third ramification V(3). Since V(2) contains two strings, V(3) contains all strings of length two. There are four such strings. Thus the third ramification V(3) is { 00, 01, 10, 11 }. The third ramification is shown with two binary branchings.



The Fourth Ramification. The truth of the successor law for strings drives the Constructor to emanate the successor of V(3). It does this by driving the third ramification V(3) to surpass itself into the fourth ramification V(4). Since V(3) contains four strings, V(4) contains all strings of length four. There are sixteen such strings. Thus the fourth ramification V(4) is { 0000, 0001, . . . 1111 }. The fourth ramification is shown with four binary branchings.

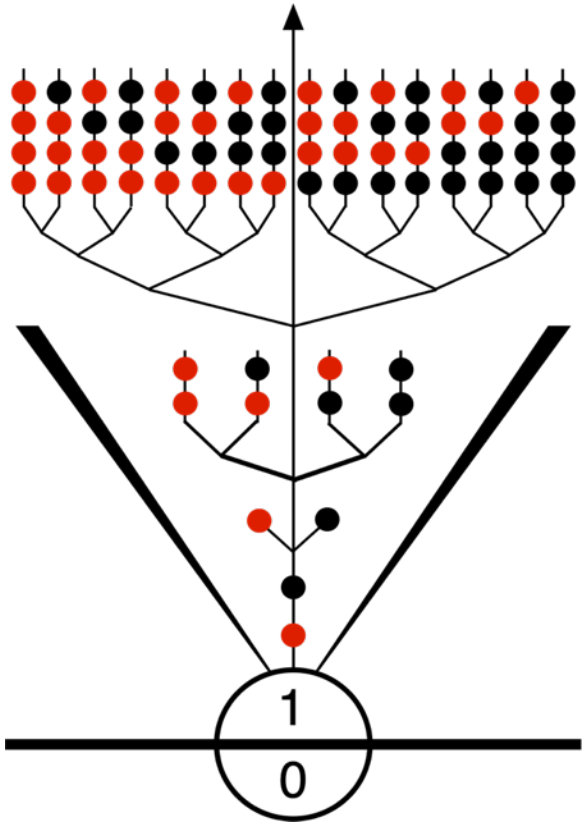


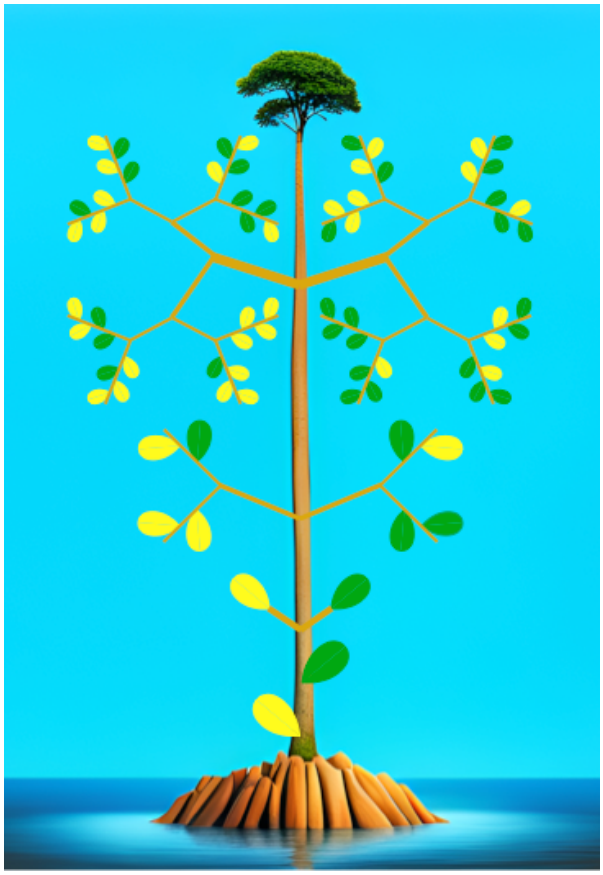
Successor Strings. The successor law for strings defines the successor relation on strings. A string *x* in the next higher ramification *is a successor of* some string *y* in the previous ramification if and only if *y* is a prefix of *x*. A string has many successors. Every string *extends itself into* its successor by adding digits on the end; it surpasses itself into its successor. So 0 in the ramification V(2) extends itself into its successors 00 and 01, while 00 in ramification V(3) extends itself into its successors 0000 and 0011 in V(4).

Stacking Ramifications. Every number on the *axis mundi* is associated with a ramification, and every ramification is a binary tree. So the axis mundi supports a stack of binary trees. These little binary trees are branches that emerge from the trunk of the axis mundi, and which branch again until they come to their leaves. Their leaves are the red and black circles, the 0s and 1s, that make the binary strings. The Figure below shows the first five ramifications. Since each ramification is V(*n*) for some *n*, the ramifications are held in the arms of V.

3. Trees within Trees

Start with the ocean of non-being, the element of water, which negates itself. Its self-negation is symbolized by the glyph with a tilde turning on itself. This self-negation is the One, the element of earth, the island rising from the ocean, symbolized by its glyph. The One gives birth to the Lexetor, the element of air, which emanates the axioms of set theory. It is symbolized by its glyph with two wings, and the false separated from the true. The Lexetor emanates the Constructor, which expresses the power of the One by producing beings, that is, sets. The Constructor is also the element of air, but this air is hotter, and corresponds to heat. The Constructor appears through its three-winged glyph. All four hypostases produce the tree whose leaves are sets. Yellow leaves correspond to red dots, while green leaves correspond to black dots. This tree rises to infinity.





4. To Infinity and Beyond

The Limit Law for Strings. Plotinus says the generative power of the One is infinite (E 2.4.15.17-20, 5.5.10.22-24, 6.7.32.20-23, 6.9.6). Consequently, the entire progression of finite ramifications surpasses itself into the least infinite ramification. Just as the progression of finite numbers 0, 1, 2, 3, . . . surpasses itself into the least infinite number ω, so the progression of finite ramifications V(0), V(1), V(2), V(3), . . . surpasses itself into the least infinite ramification V(ω). And, just as ω is a *limit number*, so also the least infinite ramification is a *limit ramification*. A limit ramification just collects all the strings from all the lesser ramifications; it does not add any new strings. So the least infinite ramification V(ω) contains all strings on all finite ramifications. The limit ramification V(ω) is just the entire tree of finite strings. Hence it is not a new ramification attached to the tree of strings at the number ω. The *finite self-*

organization of the Constructor fully expresses itself in the infinite V(ω). More generally, for every limit number L on the axis mundi, there exists a limit ramification V(L), where V(L) is the union of all the V(*n*) for *n* less than L.

The Next Infinite Ramification. Just as the number ω surpasses itself into its successor ω+1, so the ramification V(ω) surpasses itself into its successor V(ω+1). Hence the successor law for strings applies to V(ω). V(ω) contains all finite strings; but the number of finite strings is ω. So, following the successor law, the ramification V(ω+1) is the set of all strings of length ω. It is the first set of infinitely long strings. Each infinitely long string has the length of a limit number, and therefore is a *limit string*. Limit strings do not occur in limit ramifications; they occur in the next ramification above limit ramifications.

Limit Strings. The string tree contains *progressions* of strings. Any progression starts with the root of the string tree (that is, with the empty string). Every string in any progression is surpassed by exactly one successor string in that progression. So any progression is an infinitely long sequence of strings. Here are the first few strings in a sample progression:

$$\Lambda \rightarrow 0 \rightarrow 01 \rightarrow 0110 \rightarrow 0110000011001010 \rightarrow \ldots .$$

Every progression of finite strings converges in the limit to an infinite limit string. For any progression of strings, its limit is the string defined by *superimposing* all the strings in that progression. Formally, string T is the limit of progression P if and only if every string in P is a prefix of T.

The Final Law for Strings. The first three laws for strings, singing in the Constructor, link the strings in the tree together via successor and limit relations. The series of ramifications of strings is a lineage. It is an unsurpassable series of surpassable ramifications. The final law for strings says that the final tree is the union of all the ramifications in that lineage. The final tree includes all the strings along with their successor and limit relations. The final tree is the entire tree of strings; it is the totality of strings; it is V.

The All-Wood. The tree of strings, linked by successor and limit relations, is the *all-wood*.[22] The all-wood includes every finite bit string, and it includes every infinite bit string. Plotinus often uses the image of a tree to express the unfolding of being-itself into the many beings (E 3.3.7.10-25, 3.8.10.10-20, 4.4.11.5-15, 6.8.15.34-8). So the all-wood illustrates this unfolding. The string tree in the Figure above shows part of the all-wood. However, the all-wood is not the world tree. The world tree is the all-wood plus its leaves, its flowers, and the nests of its birds; the world tree is the digitalist version of Yggdrasil. The all-wood is the fifth part of the pagan image. The all-wood is the *ecstasy of strings.* It is a transcendental entity.

[22]The all-wood was called the "Library" in Steinhart (2020).

5. The Incantation for Sets

The Constructor. The incantation for strings is a patterned semiotic act. It is a style of constructive agency, which further defines the Constructor. Its laws are true ontic propositions which magically speak their strings into being. These laws speak together harmoniously, so that they sing a hymn to the Good with a single soundless voice. This soundless music occurs in the Constructor, and it is equivalent to the emanation of the strings. The strings occur in this music. But the strings are equivalent to sets; so the incantation for strings is equivalent to an incantation for sets.

The Initial Law for Sets. The initial law for sets states that there exists an initial ramification of sets. This ramification is V(0), which is the empty set. The music in the Constructor shapes itself into the initial ramification V(0).

The Successor Law for Sets. Every ramification surpasses itself into its successor ramification. Every successor ramification contains every way of rejecting and selecting the strings in its predecessor. Every ramification is a set of strings, and every way of rejecting and selecting its strings defines a subset of that ramification. For example, given the (ordered) set {00, 01, 10, 1}, the string 0110 defines the subset {01, 10}. The digits that are 1s in 0110 define the membership relation: 01 is a member of 0110, and 10 is a member of 0110. The digits that are 0s in 0110 define the non-membership relation: 00 is not a member of 0110, and 11 is not a member of 0110. So the tree of strings also contains a system of membership (and non-membership) relations. Since every successor ramification contains every way of rejecting and selecting strings from its predecessor, it is the *set of all subsets* of its predecessor. But the set of all subsets of any set is the *power set* of that set. So every successor ramification is the power set of its predecessor. Formally, the successor law for sets states that for every *n*, the ramification V(*n*+1) is the power set of V(*n*). For every number n on the *axis mundi*, the music in the Constructor shapes itself into V(n+1).

The Limit Law for Sets. Every infinite progression of ramifications surpasses itself into its greater *limit ramification*. The *axis mundi* contains every consistently definable limit number. For every limit number L in the *axis mundi*, there exists a limit ramification V(L). Each V(L) contains every set on every lesser ramification. So each V(L) is the union of all V(*n*) for *n* less than L. Thus V(ω) is the set of all finite sets. For every limit ordinal L, the music in the Constructor shapes itself into the limit ramification V(L).

Bigger and Bigger Infinities. A general rule for sets states that if the number of things in some set is *n*, then the number of ways of selecting and rejecting members of that set is 2 raised to the *n*-th power. Since V(ω) contains ω-many sets, the number of sets on the next ramification V(ω+1) is 2 raised to the ω-th power. Since ω is infinite, this bigger number is also infinite. Surprisingly, it is

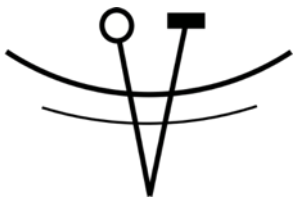
a *bigger infinity* than ω. Since the number ω corresponds to the number of counting numbers (like 0, 1, 2, 3, and so on), the number ω is a *countable infinity*. Hence the bigger infinity of strings in V(ω) is an *uncountable infinity*. It is the least uncountable infinity. Unfortunately, we do not know how to correlate the size of V(ω) with the alephs; we do not know whether the size of V(ω) is $\aleph_1$ or some greater aleph. But every uncountable infinity surpasses itself into greater uncountable infinities. There are alephs beyond alephs.

The Final Law for Sets. The final law for sets gathers all the sets into a single collection, a collection which is too general to be a set. Such collections are called *proper classes*. Adding all them extends the congruency of existence. So the Constructor adds them, thus emanating an unsurpassable series of surpassable ramifications of sets. The finality of this unsurpassable series is the union of that series. The union of the V(*n*) for all *n* in the *axis mundi* is the proper class V. Thus V is the proper class of all sets. V is not surpassed by any greater class. It is an unsurpassable class, a transcendental entity. Just as the *axis mundi* is the ecstasy of numbers, so V is the *ecstasy of sets*. It is the ecstasy of ramifications, the star of ramifications. Since every proper class is unsurpassable, it exists at the rank of the Good, so it is an avatar of the Good in the guise of a class.

The Iterative Hierarchy of Sets. The four laws in the incantation for sets define the *iterative hierarchy of sets*. These laws are equivalent to the laws in the incantation for strings, which defines the *boolean-valued iterative hierarchy* (since 0 and 1 are values in boolean logic). The sets in an iterative hierarchy are stratified into *ranks*. The rank of a set is the smallest (ordinal) number that is greater than the rank of every member of the set. The rank of {} is 0. The rank of the set of all finite numbers is the least infinite number ω. These iterative hierarchies are models of the axioms of set theory.

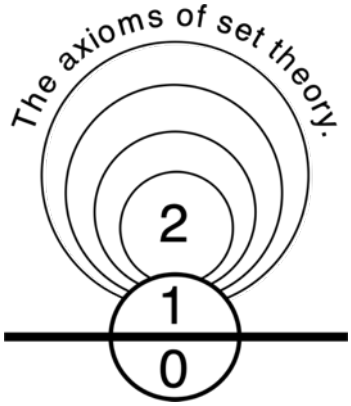
6. The Axioms of Set Theory

The Lexetor Produces Axioms for Sets. Since the axioms of set theory are propositions, and since the Lexetor produces all propositions, the Lexetor produces these axioms. But set theories are ordered by the sizes of their models. The zeroth set theory has no sets in its model; its model is the empty set. The first set theory adds the empty set. The second set theory includes all finitely complex sets. The third set theory adds an axiom for the infinite number ω. The axioms for this third set theory are known as the ZFC axioms. The fourth set theory adds an axiom for an inaccessible infinity, which is too big to be defined by ZFC. An infinity which is too big to be defined by ZFC is known as a large cardinal. And greater set theories add axioms for even bigger infinities. But the Lexetor produces these axioms in an orderly way; it produces a series of ever-greater set theories. Each previous theory is surpassed by the next greater theory. So the Lexetor emanates a series of surpassable set theories. Each of these set theories is a ring in the Lexetor. Since the Lexetor maximizes self-congruency, it ultimately emanates that set theory than which none greater is consistent.



The Unsurpassable Set Theory. The Lexetor produces the axioms of the logically unsurpassable set theory. The set theories defined by humans merely approximate this unsurpassable set theory. So far, the greatest set theory known is the Von Neumann – Gödel – Bernays (VGB) set theory with axioms for all consistently definable large cardinals (Drake, 1974; Kanamori, 2005). The Lexetor emanates these axioms in order of consistency strength. This theory also adds proper classes, collections that are too general to be sets. These proper classes are not idle: they are the transcendental entities (but not objects). Here

we assume the VGB axioms as the best approximation to the unsurpassable theory of sets; hence the Lexetor makes the VGB axioms true. These axioms form a ring in the Lexetor. Since all the axioms in the lesser set theories occur in this greatest set theory, its ring includes all the lesser set-theoretic rings. So we can say that the ring that holds the greatest set theory is just the *fourth ring* in the Lexetor. Since these axioms do not decide the logical values of all propositions, the Lexetor independently assigns many other logical values. However, if there does not exist exactly one way to maximize congruency, then the Lexetor maximizes congruency in many different ways. Hamkins (2012) argues for many mutually incompatible set theories. He posits many mathematical worlds. Yet even these can be unified into one totality. There exists exactly one way to maximize congruency; as far as we know, it includes the VGB axioms.



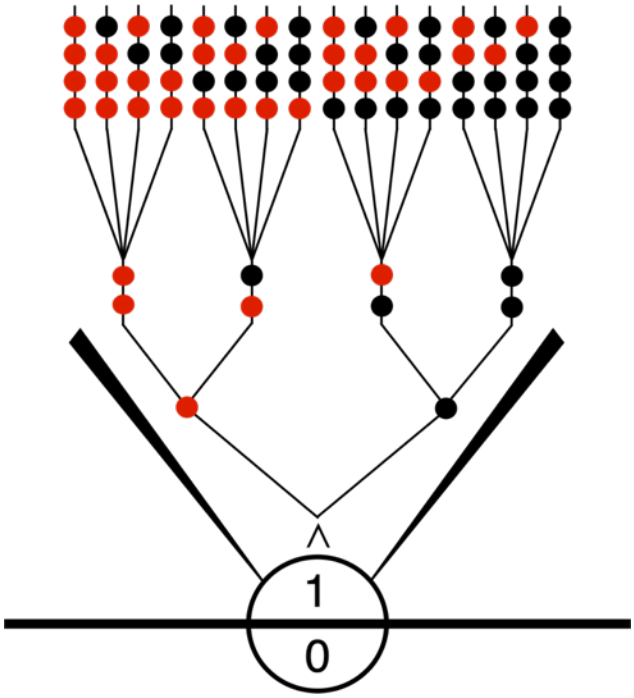
The Constructor Emanates the Greatest Model of the Greatest Set Theory. The Lexetor produces the unsurpassable set theory, which is unified and harmonized by the One. Each axiom in the unsurpassable set theory sings with a soundless voice, and through their harmony they are a single chorus, singing one song, one music, which is the Constructor. The incantation for sets defines the musical activity of the Constructor, in which the iterative hierarchy of sets emerges as the self-ordering of that activity. Through its music, the Constructor sings the iterative hierarchy into being. The Constructor emanates the iterative hierarchy within its unfolding power. Just as shock diamonds appear in the fiery exhaust of a jet engine, so the sets appear within the music of the Constructor. The numbers in the *axis mundi* order the sets into ramifications in the iterative hierarchy. The Constructor ultimately emanates, within its perfect music, the unsurpassable system of sets, along with all the proper classes. By emanating the unsurpassable system of sets, that system than which none greater is possible, the Constructor honors the Good; it bears witness to the Good. The fully expressed Constructor contains that unsurpassable system. Since complexity is a perfection within congruency, the fully expressed Constructor is the maximally perfect system of sets. As a maximally perfect entity, the Constructor is holy. Since the sets are forms, the Constructor is the *ecstasy of forms*.

Nature. The ecstasy of forms is V. All consistent theories have models in V. If that is correct, then all logically possible forms exist in V. Thus V is combinatorially complete – it is a *plenum*. These sets only contain other sets. Hence they are said to be *pure*. The Platonic forms are pure sets. For Platonists, the natures of things are their forms; for digitalists, these forms are pure sets; since V contains all pure sets, V contains all natures; but that which contains all natures is *nature itself*; therefore, V is *nature*. Hence the membership relation is the single relational power which binds all things into the wholeness of nature. It is the essence of the Constructor's song. All natural objects are in V. However, the One, the Lexetor, the Constructor, and the ecstasies are not in nature – they are either below it, around it, or above it. Those ontological entities are not unnatural objects, because they are not objects.

10. Intrinsic Value

1. The Branching Tree

The Tree of Strings. The laws for strings define the tree of strings, which is a series of ramifications. Each ramification is attached directly to the *axis mundi*, that is, to the trunk of the tree of strings. It branches out from its point of attachment to the trunk. This depiction of the strings does not permit a string to branch out into another string. The branching tree allows strings to branch into others.



The Branching Tree. The strings in the tree of strings are linked by successor and limit relations. A string T is a successor of string S if and only if T is on the next higher ramification above S and S is a prefix of T. And S is a predecessor of T if and only if T is a successor of S. The predecessor relation defines branches that run from lower strings to higher strings. If S is a predecessor of T, then a branch runs from S to its successor T. Thus branches run from strings to their successors. Some levels of the branching tree are shown in the Figure on the right. The initial string is Λ. It surpasses itself into its successors Λ0 and Λ1. The red dots are 0s and the black dots are 1s. Since Λ is null (it's like a blank), Λ0 is 0 while Λ1 is 1. Now the 0 surpasses itself into its successors 00 and 01 and the 1 into 10 and 11. Now 00 has four successors 0000, 0001, 0010, and 0011. And so it goes.

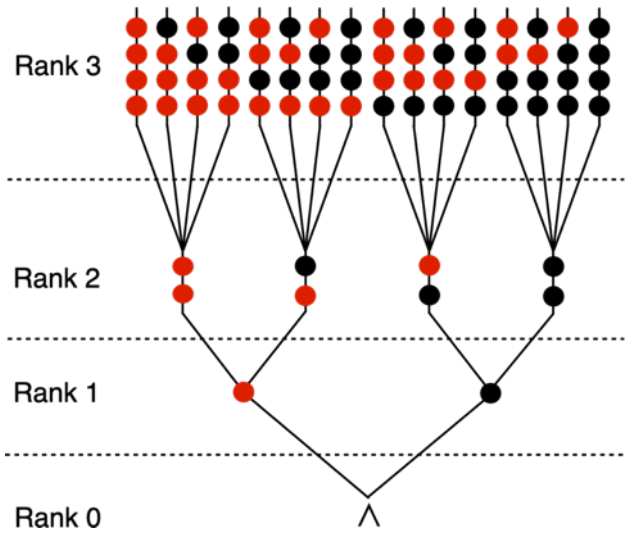
2. Value is Distance from the One

Greater Distance from the One is Greater Value. In the beginning is the One, and the One is the earth, and the One is in the earth. The Directionality Argument entails that the power of the One flows upwards in a positive direction. It flows away from the One towards the Good. As that power flows, shaping itself into song, it emanates objects. These objects lie at various ontological distances from the One. The Directionality Argument thus motivates the *Greater Value Argument:* (1) The power of the One flows upwards in a positive direction. The power of the One is self-surpassive, self-transcending power. Hence the One produces something greater than itself, which in turn produces something even greater than itself. Every cause produces a greater effect. (2) If that power flows upwards in a positive direction, then greater distance from the One is greater value. (3) Therefore, greater distance from the One is greater value. More precisely, value is identical with distance from the One. Of course, value is ambiguous – there are many distinct types of value.

Detail. One type of value is based on the *detail* of a string. The detail is just the series of digits in the string; longer strings have greater detail. When an earlier string surpasses itself into its successor strings, it surpasses itself into longer strings. Those longer successors preserve the detail of the earlier string, but add new detail. When 00 extends itself into its successor 0011, that successor preserves the detail of 00 as its prefix, but it adds the detail 11. Successors inherit

the detail of their predecessors. But they modify it by adding new digits This is the simplest form of *descent with modification*. It is a trivial kind of evolution. Since the later strings inherit the detail of the earlier strings, detail *accumulates*.

Combinatorial Value. Since the One emanates strings, the simplest type of value emerges purely from that generativity. It is that type of value that is defined most directly in terms of the offspring relation among strings. The One emanates strings in an orderly way: it emanates shorter strings before longer sets. These longer strings are further from the One, and therefore more valuable. But their greater distance is defined by just adding more 0s and 1s on the ends of shorter strings; their greater distance is just greater detail. Since these extensions are made using the combinatorial principles that produce the ramifications of strings, the value that strings acquire merely through added detail is merely *combinatorial value*. However, since combinatorial value is the simplest kind of value, it is that kind of value which is closest to the One, so that it is also the *least valuable kind of value*. Combinatorial value is measured by distance from the One in generative steps away from the One. The One generates the strings in orderly steps: the *n*-th act of generation defines the *n*-th rank of strings, which has combinatorial value *n*. The Figure shows the first four ranks of strings.



3. From Intrinsic Value to Complexity

Greatest Kind of Value. The value of any thing is its distance from the One. However, there are many ways to define distance, and, consequently, many types of value. Combinatorial value is the simplest and therefore least valuable kind of value. If this is the only kind of value, then the One does not maximize value. However, the One does maximize value. Therefore, there are kinds of value which are *more valuable* than mere combinatorial value. There exists exactly one *most valuable type of value*, and consequently exactly one *most valuable comparative value relation*. For if there were no most valuable type of value, then the One would not maximize value; but the One does maximize it.

The *Self-Congruency Argument* shows how the One maximizes self-congruency. It goes like this: (1) The self-negation of non-being is the One. (2) But non-being is self-incongruency. Hence the negativity of the nothing has two ways to act on itself. Each of these ways is a policy of the One. (3) According to its negative policy, the One minimizes the self-incongruency of non-being. According to its positive policy, the One maximizes the self-congruency of the system of beings. Since the positive policy produces value, the One defines the *most valuable* type of value through its positive policy. (4) If this maximal self-congruency is not maximally self-increasing, then it is not maximal. (5) So the positivity of the One is *self-maximizing self-congruency*. It is self-bootstrapping, self-growing, self-accelerating. (6) And if the One does not produce all possible sequences of beings on which self-congruency grows maximally, then it does not maximize self-congruency. (7) So the One produces all such sequences.

The *Valuable Congruency Argument* goes from self-congruency to *intrinsic value*. (1) The Self-Congruency Argument entails that the One produces all

possible sequences on which self-congruency increases maximally. (2) But the One is self-maximizing self-congruency. Hence the maximal steps away from the One are those that maximize self-congruency. These are the longest steps away from the One. (3) So the greatest way to define distance from the One to any being identifies it with the number of self-congruency steps from the One to that being. (4) Since this is the greatest way to define distance from the One, and distance from the One is value, this is the *most valuable kind of value*. (5) The giving of this value to some being depends only on its existence. It is the value that the being has *in itself* by virtue of its existence. Any such value is *intrinsic value*. (6) Therefore, intrinsic value is measured by self-congruency steps. That is, *intrinsic value is self-congruency*. Since any kind of value is a kind of distance from the One, intrinsic value is *intrinsic distance*. (7) But self-congruency accumulates. It increases along sequences of wholes with richer positive self-relations. The positive self-relations of any whole are supported by its parts. Richer positive self-relations require richer positive relations among those parts; they require greater internal structural complexities. (8) Consequently, self-congruency is a structural feature of beings. Self-congruency accumulates as structure accumulates. (9) Since intrinsic value is self-congruency, intrinsic value is a structural feature of beings; it accumulates as structure accumulates.

More Valuable Strings Encode More Valuable Sets. The strings in the all-wood encode sets. For the purposes of reasoning here, the strings and their encoded sets are identical. As sets, the strings in the all-wood are linked by membership relations. Since sets have internal structures, the strings that encode them also have those structures too. But things that have internal structures have intrinsic values. An *orthogeny* is a sequence of sets such that (1) the empty set is in the sequence; (2) every set in the sequence is surpassed by exactly one more intrinsically valuable set in that sequence; and (3) every infinite progression of sets in the sequence is surpassed by exactly one more intrinsically valuable limit set in that sequence. A single step along an orthogeny may span a vast series of set-theoretic ranks; the next item in an orthogeny may be at a much higher rank than the previous item. The Self-Congruency Argument shows that all possible orthogenies exist. Every orthogeny is a series of sets; however, not every series of sets is an orthogeny. On almost every series of sets, intrinsic value does not always increase. From now on, unless otherwise mentioned, *value* always means intrinsic value. To say that yonder *surpasses* xander means that yonder has greater intrinsic value than xander.

The *Valuable Harmony Argument* shows how the One proceeds from intrinsic value to *harmony*. (1) As sets surpass sets in orthogenies, they accumulate greater intrinsic value. Likewise they move away from the One. (2) As they move farther from the One, they accumulate various kinds of non-unity. These are kinds of diversity (multiplicity, variety, complexity, and so on). Plotinus says loss of unity is loss of existence (E 5.6.3, 6.2.5, 6.2.9-11, 6.6.13, 6.9.1). So as these sets gain diversity they must at least preserve their unity. But the unity required to integrate greater diversity is also greater unity. So as sets surpass sets, they accumulate ever greater *unity-in-diversity*. (3) Hence intrinsic value is unity-in-diversity. It resembles *organic unity* (Nozick, 1981: 415-428). (4) But unity-in-diversity is *harmony* (Leibniz, 1697; Rutherford, 1995: 13-35; Rescher, 1979: 28-31). So, as sets surpass sets, they accumulate both greater intrinsic value and greater harmony. (5) This reasoning is generic: on every orthogeny, self-congruency and harmony increase together in the same way. Since the surpassing is the same in each case, intrinsic value is harmony. (6) Moreover, a whole is self-congruent if and only if all its parts are congruent with each other. This mutual congruency is harmony. Therefore, self-congruency is harmony; but self-congruency is intrinsic value; so again intrinsic value is

harmony. (7) It follows that *intrinsic value is harmony* (Spiegelberg, 1947). Thus harmony is the most valuable kind of value. The harmony of any set is its intrinsic distance from the One. We need to define this harmony more precisely.

The *Argument from Interdependencies* goes from harmony to density: (1) Say the density of a whole is the amount of information needed to describe the interdependencies among its parts. (2) One way for the harmony of some whole to be minimal is for its unity to be minimal, while its diversity is maximal. The parts are entirely uncoordinated. Hence they have minimal interdependence. To describe their interdependencies, just say they have none. Hence the density is minimal. As unity increases, harmony rises towards its maximum. And density increases in the same way. (3) The only way for the harmony of some whole to be maximal is for its unity and diversity to both be maximal. The parts are equally coordinated and uncoordinated. Here the density is maximal. As diversity decreases, harmony falls to its minimum again. And density decreases in the same way. (4) So another way for the harmony of some whole to be minimal is for its unity to be maximal, while its diversity is minimal. The parts are entirely coordinated. To describe their interdependencies, just say they all do the same thing. So the density is minimal. (5) Since harmony and density vary in exactly the same way, and for the same reasons, *harmony is density*.

The *Complexity Argument* goes from density to complexity: (1) The density of any whole equals the smallest amount of information needed to describe the interdependencies in the whole. (2) But complexity varies in exactly the same way as density: it is minimal at the two extreme cases, and maximal in the middle case. And it varies for exactly the same reasons that the density varies. (3) Therefore, density is complexity. *The complexity of a whole is the smallest amount of information needed to describe its internal interdependencies*. Putting all these links together: Intrinsic value is harmony; harmony is density; density is complexity. Therefore, *intrinsic value is complexity*.

A long tradition identifies intrinsic value with complexity (Steinhart, 2014: secs. 72-74; see Cahoone, 2016: 434). The arguments that motivate this identification are sound. Digitalists therefore agree that intrinsic value is complexity. The One maximizes self-congruency; but self-congruency is intrinsic value, which is complexity; hence the One maximizes complexity. Hence the *arrow of intrinsic value* that points from the One to the Good is an *arrow of complexity*. The intrinsic distance of any set-theoretic structure from the One is its complexity. Complexity slowly accumulates during evolution. It accumulates during physical evolution in any universe, as simpler things evolve into more complex things. It grows during atomic, chemical, biological, and technological evolution. And it grows during cosmic evolution. It increases as simpler universes evolve into more complex universes.

4. The Intrinsic Values of Strings

Lexical Complexity. Words are wholes with lexical parts, namely, letters. Hence the *lexical complexity* of a word is just its number of letters. So the lexical complexity of "bird" is four. The lexical complexity of the shorter word "human" is less than the lexical complexity of "salamander". The lexical complexity of any word is just its *detail*. This is the least complex kind of complexity of any word, and therefore the least valuable kind of value of the word. Strings are words made from the binary digits 0 and 1. So the lexical complexity of any string is just its detail, which is its length.

Semantic Complexity. By contrast, the semantic complexity of any word is the complexity of the thing that it signifies. Words in human languages have semantic complexities because they encode things in those languages; the things they encode are the things they signify. The *semantic complexity* of "bird" is the complexity of the typical bird, or the average of the complexities of all birds, or something similar. The semantic complexity of "human" is much greater than the semantic complexity of "salamander". Since binary strings are words which encode other things (like sets), they have semantic complexities. *The semantic complexity of any string in the all-wood is the complexity of the most complex thing which it encodes.* This is the most complex kind of complexity for words. It is therefore the most valuable kind of value of the word. *Since intrinsic value is maximal value, intrinsic value is semantic value.* Semantic complexity (and intrinsic value) grow slowly by accumulation.[23]

Strings Encode Physical Things. We know from our computers that binary strings can encode pictures and songs. They can encode programs which, when run on computers, simulate physical things. Hence strings also encode physical things. Since physical things are wholes with parts, the complexity of any physical thing is the smallest amount of information needed to describe the interdependencies of its parts. It is plausible that the physical things encoded by strings are the most complex things encoded by strings. If that is right, then the semantic value of any string is the complexity of the most complex physical thing it encodes. This is the intrinsic value of the string.

Proxies for Physical Complexity. Since the complexities of physical things are hard to measure, we will use approximations. The Stoics used their *great chain of being* to sort physical things into ranks based on their functions (Lovejoy, 1936). If yonder is on a higher rank than xander, then yonder includes all the functions of xander but adds new functions of its own. Rocks exist; but plants exist and live; animals add motion and perception; humans add rationality; deities add their superhuman functions. Since things that have more functions are more complex, things on higher ranks are more complex. For the Stoics, there are six ranks of complexity (Cicero, ONG 2.33-47; Sextus Empiricus, *Adversus Mathematicos*, 88-91). Plotinus adopts these ranks (E 2.9.13.1-10, 3.3.3-7, 4.4.1, 4.4.36, 6.2.21, 6.7.27). They are (1) rocks; (2) plants; (3) non-human animals; (4) humans; (5) the Olympian deities; and (6) the cosmic deity. For the ancient pagans, these ranks of functional complexity are also ranks of intrinsic value. They are *degrees of perfection*. Things on higher ranks are more perfect. These ranks can be refined and extended. Chaisson (2001, 2006) gives a modern approximation to complexity. He says the (approximate) complexity of any thing is the amount of energy flowing through one gram of its matter in one second.

Strings Encode Universes. The semantic value of any string is the complexity of the most complex physical thing it encodes; but universes are maximal physical things; hence they are the most complex physical things; so the semantic value of any string is the complexity of the most complex universe it encodes. The complexity of any universe is just the smallest amount of information needed to describe the interdependencies among its parts.

Proxies for Universe Complexity. We can use the Stoic great chain to make approximate universe complexities: the complexity of a universe is the smallest number that is greater than or equal to the rank of every part of that universe. If humans are the most complex things in our universe, then the complexity of our

[23]Complexity accumulates. It likewise follows Dennett's Principle of the Accumulation of Design (1995: 72). It accumulates slowly. So the (semantic) of strings are similar to complexity measures that follow slow-growth laws. These include Bennett's logical depth (1988, 1990); Mayfield's minimal history (2007); and Machta's parallel depth (2011).

universe is four. If some universe contains Olympian deities, its complexity is five. This complexity measure entails a *comparative complexity relation* on universes: xander is more complex than yonder if and only if the complexity of xander is greater than that of xander. And this is a *comparative value relation* on universes. Thus a universe with Olympians is more complex and more intrinsically valuable than our merely human universe.

5. Comparative Value Relations on Strings

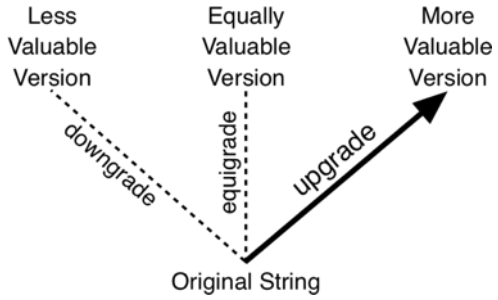
Comparative Value Relations on Strings. Since the intrinsic value of any thing is its most valuable kind of value, based on its most complex kind of complexity, the intrinsic value of any string is its semantic complexity. The intrinsic value of any string is the complexity of the most complex thing which it encodes. The intrinsic values of strings entail a comparative *value relation* on strings. For any strings xander and yonder, either xander *is less intrinsically valuable than* yonder, or xander *is just as intrinsically valuable as* yonder, or xander *is more intrinsically valuable than* yonder. Using the Stoic great chain, a string that encodes a universe with Olympian deities is more valuable than one that encodes a universe whose most complex parts are humans.

Three Kinds of Successors. From any string to its successors, some detail is added. However, detail can be added in ways that increase, preserve, or decrease intrinsic value. So there are three cases:

- *Downgrade*. If value decreases from a string to some successor, the successor is a downgrade. Downsloping lines runs from the program to its downgrades.

- *Equigrade*. If value stays the same from a string to some successor, the successor is an equigrade. Equally sloping (flat) lines run to equigrades.

- *Upgrade*. If value increases from a string to some successor, then it is an *upgrade* or *improvement*. Upsloping lines run to improvements.

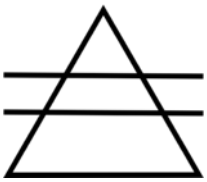


The Figure on the right shows a string and its three possible relations to its successors. A dashed line indicates either equigradation or degradation. A solid line with an arrow indicates improvement.

Three Kinds of Limits. Similar reasoning applies to limits. Limit strings are comparable to their progressions. A limit has either lesser, equal, or greater value than its progression. If any limit string is more valuable than its progression, then it is an *improvement* of its progression.

11. The Selector

1. Seeds and Skulls



The Power of the One Flows Excessively. The power of the One flows outwards in the maximally positive (best) way. By flowing outwards in that way, it generates the all-wood, including all its strings and their relations. If the One is exhausted by generating the all-wood, then its power does not flow outwards in the best way. So the One is not exhausted by generating the all-wood. Since the One is not exhausted by generating the all-wood, its power can flow through the all-wood in some way that exceeds merely generating the strings and their relations. When the One flows through the all-wood in this excessive way, it flows through at least some strings in the all-wood in that way.

The Excessive Flow Animates Strings. When the power of the One flows through the strings in an excessive way, it makes them more like itself. Since the One is generative, anything that becomes more like the One becomes generative in a derivative way. So if the power of the One flows excessively through any string, then that string imitates the generativity of the One. To become generative in some derivative way is to be *animated*. So if the power of the One flows excessively through any string, then it becomes animated.

Animating Strings Selectively. However, the strings in the all-wood differ in their value-features. If the power of the One is not sensitive to their value-features, then it does not flow outwards in the best way. So it is sensitive to their value features. Since the outflowing power of the One is the most basic power, that outflow is sensitive to the most basic value-features of the strings. At the most basic level, any string is either *defective* or *not defective*.

Seeds. If the One fails to animate any string which is not defective, then it does not act in the best way. But the One does act in the best way. So, the One animates all strings which lack defects. Hence they become derivatively generative like the One. Plotinus often describes generative entities as *seeds* (E 2.6.1.10-12; 3.2.2.15-25; 3.7.11.20-30; 4.3.10.10-15; 5.9.6.10-24). Hence the strings without defects are seeds. The seeds are analogous to viable genotypes. They have no deadly genetic errors or fatal mutations which would prevent them from unfolding into phenotypic self-instances.

Eidolons. Seeds are animated by the One. But any form animated by the One is a causally powerful form. By definition, an *eidolon* is a causally powerful form. Hence seeds are eidolons. Since other physical eidolons occur within the universes defined by seeds, seeds are physically primary eidolons. Animated by the One, the seeds unfold into their phenotypic self-instances, that is, into concrete physical universes. Lacking defects, the seeds are smooth mirrors which clearly reflect the light of the Good; hence they are *bright,* they *shine.* They inhabit the illuminated part of the all-wood.

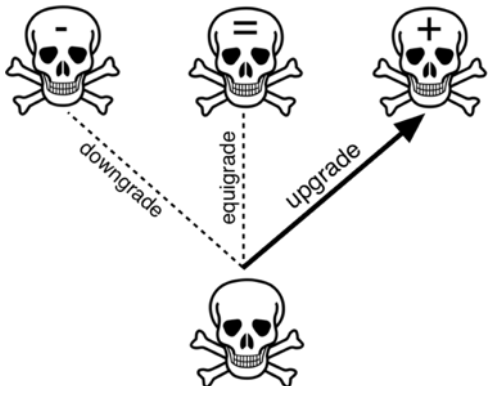
Skulls. If the One animates any string which is defective, then it does not act in the best way. But the One does act in the best way. So, the One does not animate any string which is defective. Hence those defective strings do not become derivatively generative, they fail to generate anything. The defective seeds are analogous to sterile genotypes. They have deadly genetic errors and fatal mutations which do prevent and do block them from unfolding into phenotypic images of themselves. To emphasize their deadness, we call them *skulls*. Skulls are like genotypes that can never come to life. The skulls fail to reflect the light of the Good; they lie in the shadow of the wild hunt.

2. Green Arrows Link Seeds

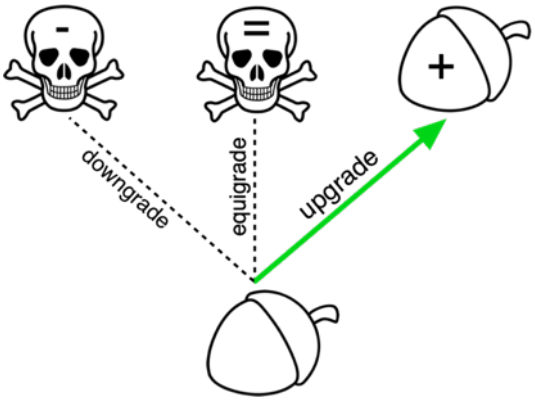
Initial Program. To define seeds and skulls, start with the initial program. It is the initial simple string; but a simple string cannot have any defects. More precisely, the initial program is the empty string; since it has no digits, it can't have any fatal or erroneous digits. And if a string has no defects, then it is optimal. So, by default, the initial program is optimal. *The initial program is a seed*. The Figure on the right shows this seed, which is the empty string. It has two successors.

Successor Programs. Every successor program depends on its predecessor, which is either a seed or a skull. So we have two cases.

Skull Predecessor. For the second case, the predecessor is a skull. Every skull suffers from a fatal defect – it is a sterile program. Since skulls are sterile, and since defects are inherited, all their successors are sterile. Since every skull fails to reproduce, it doesn't have any viable offspring. So its successors cannot come to life. *All the descendants of skulls are skulls, even if those descendants are upgrades.* The Figure on the right shows how changes in values transform seeds into skulls or into seeds.

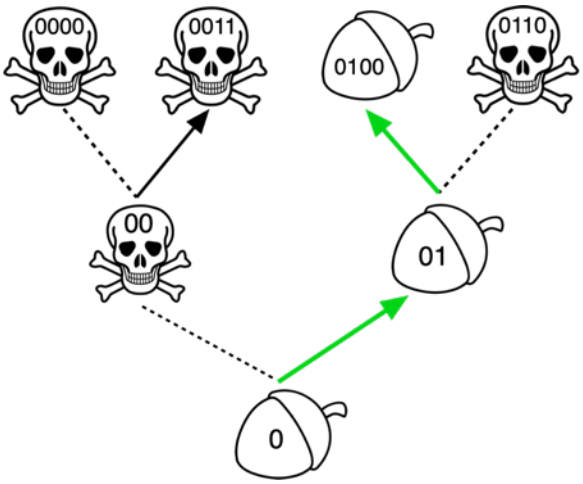


Seed Predecessor. For the first case, the predecessor is a seed. Every downgrade of a seed decreases its value. But if value is decreased, then some error, defect, or fatal mutation was introduced. So *every downgrade of a seed is a skull*. Every equigrade of a seed preserves its value. But if value is merely preserved, then it fails to increase. This failure is a defect. So *every equigrade of a seed is a skull*. Every upgrade of a seed increases its value. An upgrade adds no defect. So *every upgrade of a seed is a seed*. The Figure on the right shows how changes in value transform seeds into skulls or into seeds.



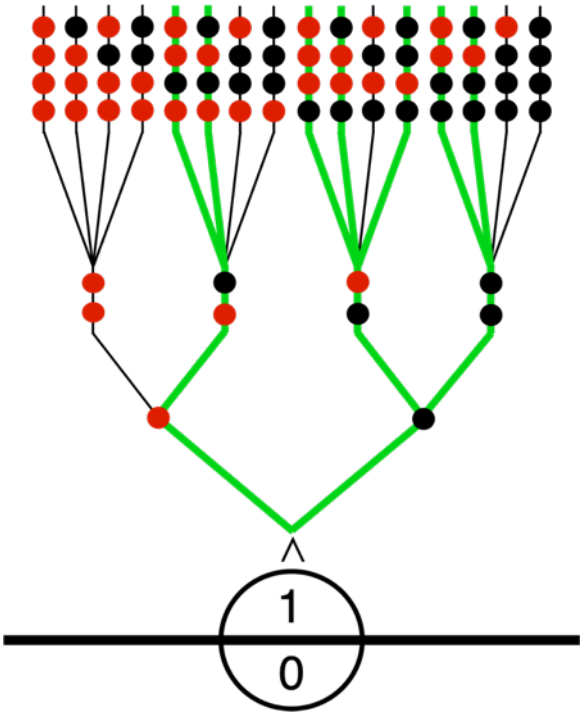
Green Arrows. A green arrow is an upgrade from a seed to a seed. The green indicates that all the changes in the history of the arrow have been positive.

Iterated Green Arrows. The Figure on the right shows some iterated changes. Start with the program 0, which is the root this little tree. It is a seed, which is upgraded into 01, which is therefore also a seed. And 01 is a seed, which is upgraded into 0100, which is therefore also a seed. But all the other programs are skulls. The green arrows indicate the lineages of programs which include only seeds. Since 00 is a skull, its upgrade into 0011 is not a green arrow.

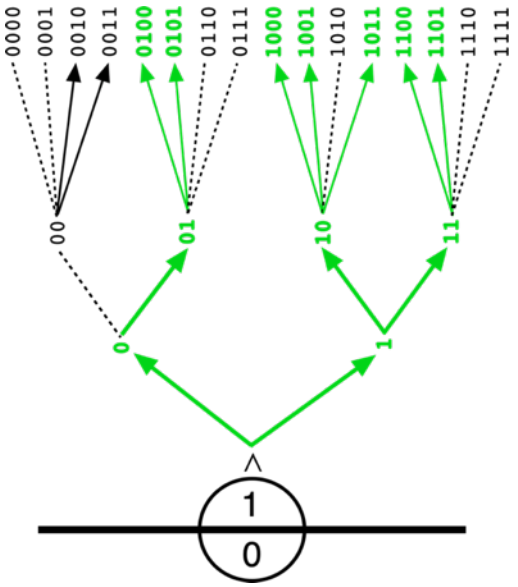


Limit Programs. These rules for seeds and skulls apply to limits. Every progression of seeds is also a seed. The downgrades and equigrades are *limit skulls*; the upgrades are *limit seeds*. As soon as a skull appears in a progression, the entire progression is a skull. All the limits of skulls are skulls.

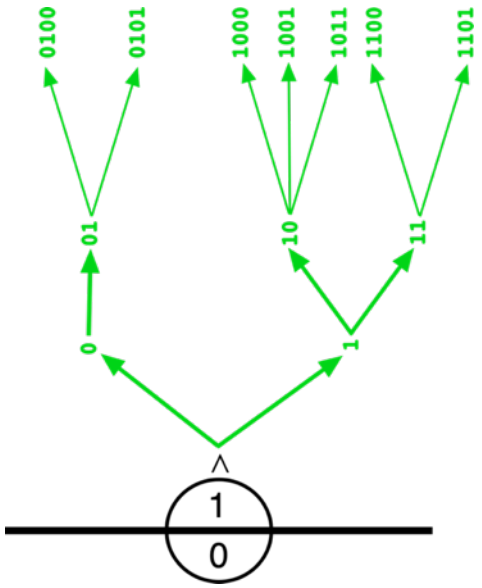
The Selector Pursues the Good. The Figure on the left uses red and black dots from the ramifications. The Figure on the right treats those dots as bits, making binary strings. So the Figure on the right treats the first four ranks of strings as programs. These are the first four ranks in the all-wood. The Figure on the right shows the changes in value from programs to their successors. While a dotted line indicates either a downgrade or an equigrade, a solid arrow indicates an upgrade. A green line or arrow indicates an upgrade from a seed to a seed. Both Figures include green relations, which run through and only through seeds. The excessive flow of the One selectively follows the green arrows. Its selective power runs through lineages of green arrows. Since these are lineages on which value only increases, these lineages rise to the Good. Hence the selective power, which will be the fourth hypostasis, runs along all the paths to the Good. Since this power will be referred to as *the Selector,* the Selector runs along green paths towards the sun.



A Sample All-Wood. The all-wood includes both seeds and skulls. The sample all-wood shown below is equivalent to the all-wood shown above with red and black dots. Seeds are green and skulls are black. Of course, this sample all-wood is not the absolutely infinitely all-wood; it is just a tiny part of that.



A Sample Green-Wood. A green-wood contains only seeds and the green arrows that connect them. Skulls and their relations are not included. The green-wood below is based on the all-wood on the left. Of course, this sample green-wood is not the absolutely infinitely green-wood; it is just a tiny part of that.



3. The Incantation for Seeds

Worlds. A *world* is any class of strings (Kraay, 2011: 365). The all-wood is the biggest world; all others are proper subworlds of the all-wood. The empty world is the smallest. Since some strings will manifest cosmic computers (dragons), which will in turn manifest concrete universes, the concept of a world can be extended to include cosmic computers and concrete universes.

Green-Wood. There exists exactly one world that contains all and only the seeds in the all-wood. This world is the *green-wood*.[24] It contains all the seeds in the all-wood, along with all the branches from seeds to seeds. All the branches in the green-wood are green arrows. The green-wood is a substructure of the all-wood; it is that part of the all-wood that is worthy of animation.

The green-wood is defined by the *incantation for seeds,* an incantation which occupies the sixth ring of the Lexetor. Like other incantations, the incantation for seeds is a form of constructive agency. Its laws shape the music in the Constructor, and this shape guides next hypostasis (the Selector), so that all and only the worthy strings are animated. The incantation has these laws:

The Initial Law for Seeds. The green-wood contains an initial string, the empty string. Since it is simple, it has no defects. Since a string with no defects is a seed, the initial string is a seed. It is the one and only initial seed, on the initial rank of the green-wood. Anything which lacks defects is on the way to perfection, that is, to the Good. Since the Good shines with absolute brilliance, anything on the way the Good is *bright*. So the initial seed is bright. The initial seed is surpassed by absolutely infinitely many better and brighter seeds.

[24]The green-wood was called the "Treasury" in Steinhart (2020).

The Successor Law for Seeds. This successor law has two parts. Its *closing part* states that for every seed, there exists at least one way to improve it. This is justified by the richness of abstract possibility. Its *opening part* states that for every seed, for every way to improve it, there exists some seed which is improved in that way. These closing and opening parts enter the music of the Constructor. They shape its song by defining pathways of increasing value in its music, pathways composed of green arrows, which orient its music towards the Good. These paths along upgrades will guide the activity of the Selector.

Since improvements introduce no defects, every improvement of a seed is also a seed. Thus seeds are defined recursively. Every seed in the green-wood is surpassed by at least one improved successor seed in the green-wood. If some seed is on some rank of the green-wood, then its successors are on the next higher rank. The branches from seeds to their successors are also in the green-wood. Any successor seed is bright, and brighter than its predecessor.

The Limit Law for Seeds. The green-wood contains progressions of seeds. Every progression of seeds is also a seed – it is a bright progression. The limit law for seeds has two parts. The *closing part* of this law states that for every bright progression, there exists at least one way to improve it. The *opening part* states that, for every bright progression, for every way to improve it, there exists some limit which is improved in that way. The closing and opening parts of the limit law enter the music of the Constructor. They shape its song by defining infinite pathways of increasing value in its music, pathways composed of green arrows through infinite limits, which orient its music towards the Good. These green paths will guide the activity of the Selector.

Since the progression had no defects, its limit cannot get any defects from its progression. It cannot get any defects from being improved, nor from any other source. So every limit of every progression of seeds is also a seed. It is a *limit seed*. Hence seeds are defined by recursion which passes through limits. Every progression of seeds is surpassed by at least one limit seed. Limit seeds exist on limit ranks of the green-wood. The branches from progressions of seeds to their limits are also in the green-wood. So every limit seed in the all-wood is on some limit rank in the green-wood. Every limit seed is bright, and it is brighter than every seed in the progression of which it is a limit.

The Final Law for Seeds. The final law says the green-wood contains all and only the seeds in the all-wood. Since some programs are skulls, and the green-wood excludes all skulls, many strings in the all-wood are excluded from the green-wood. Every seed in the green-wood is bright, and brightness is equivalent to being a seed. Brightness is defined recursively: a string is bright iff either it is the initial string; or it is an improvement of a bright string; or it is an improvement of a bright progression of strings. Thus brightness defines a *recursive optimization algorithm,* an algorithm which exists within the music of the Constructor, and which guides the Selector. Hence the Selector, as a system of agents, runs a recursive optimization algorithm.

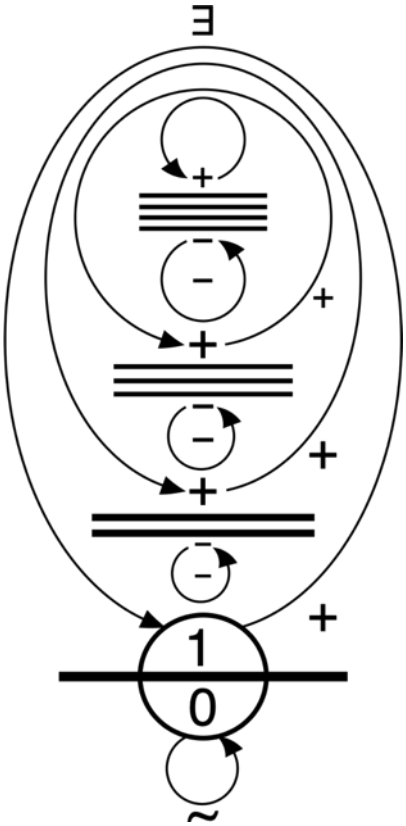
The green-wood contains many lineages of seeds. A lineage starts with the initial seed; any seed in a lineage has exactly one successor in that lineage; any progression of seeds in a lineage has exactly one limit in that lineage. On any lineage of seeds, complexity and intrinsic value steadily accumulate. Just as the all-wood is an endless series of ranks of strings (seeds and skulls), so the green-wood is an endless series of ranks of seeds (no skulls, only seeds). Hence the green-wood is an unsurpassable class of surpassable seeds. It is the *ecstasy of seeds*. It is the best of all possible worlds. But there does not exist any best of all possible universes – every universe is surpassable. The best world (the green-wood) is an unsurpassable collection of surpassable universes.

4. The Agency of the Selector

The One drives the Lexetor and the Constructor to make the all-wood. The Directionality Argument entails that the power of the One moves in a positive direction, towards the Good. This positivity drives the Lexetor to emanate laws of intrinsic value, like the incantation for seeds. Those laws separate those strings that are worthy of animation from those that are not. The Directionality Argument says the One generates for the best. Hence the One animates some string if and only if that is for the best; but that is for the best if and only if that string is in the best world; since the best world is the green-wood, the One animates every string in the green-wood.

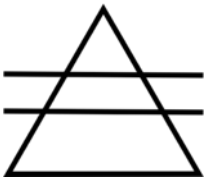
The animation of all and only the worthy programs is for the best. The worthy programs are *selected* for animation, while the unworthy are *rejected*. And this selective-rejective activity is the *Selector*. The Selector repeats the selective-rejective activity of the Constructor when it produced the strings. The Selector selects the worthy programs for animation and rejects the unworthy; it selects the seeds and rejects the skulls. When some program is selected, the power of the One enters it, activates it, energizes it, animates. Thus animated, it becomes more like the One, and gains its own derivative generativity.

By selecting seeds on every rank of the green-wood, the Selector ascends towards the Good. As its power rises, the seeds sprout. Attended by the bees, they blossom, and display their gorgeous flowers to the Good. Attended by the birds, these flowers beget universes. They offer their *phanerons* to the Good; they bear witness to it.



Since the Selector acts on the programs produced by the Constructor, the Selector is the *quaternary hypostasis*. Since digital agents appear over and only over worthy programs (that is, seeds), the Selector produces the system of digital agents within the Constructor. The Selector produces concreteness. Like all hypostases, the Selector is a mode of generativity. Working within the tertiary, it generates concrete universes. As a hypostasis, the Selector is a self-surpassing surpasser of all, and it is holy.

12. Reasons for Ignition



1. The Animation of Forms

From the Abstract to the Concrete. So far, all the beings emanated by the Constructor are abstract. If these were the only logically possible objects, then the power of the One would exhaust itself in their emanation. It would end with the green-wood. But the power of the One expresses itself further through the abstract strings by animating some of them. As it animates them, these abstract strings become derivatively generative, so that they *manifest* derivative images of themselves. But the images manifested by abstract objects are *concrete*.

Forms Manifest their Instances. All the binary strings in the all-wood encode objective meanings. They objectively encode logical forms. These forms are structures made of properties and relations. The string of letters "bird" encodes the bird-form; it encodes properties like has wings, has feathers, has two legs, has a beak, lays eggs, normally flies, and so on. But the best way to think of this bird-form is to think of it as a genetic recipe for making a bird. Forms have instances. An instance of the bird-form is a particular bird. Since forms define their instances, every instance of a form is *implicit* in the form. Birds occur as physical causes efficiently rearrange physical particles into bird-forms. When this happens, the bird-form formally causes the occurrence of the bird. Formal causation is *manifestation*: the bird-form *manifests* every bird. When it manifests a bird, some implicit bird becomes explicit. Abstract forms manifest concrete things. The abstract bird-form manifests concrete birds.

Platonism says that abstract forms manifest concrete things (*Republic*, 596b-7e). For Plotinus, *forms manifest their instances* (E 5.1.6.31-8, 5.4.2.27-39; see also 2.9.8.22-7, 4.8.6.8-12, 5.2.1.14-15, 5.4.1.27-34). He often uses the analogy of the *seed* to express the way abstract forms manifest their concrete images (E 2.6.1.5-15, 3.2.2, 3.7.11.20-30, 4.3.10.10-15, 4.9.3.10-20, 5.6.9). Just as a seed unfolds into a mature organism, so an abstract form unfolds into its concrete image. Each seed-pattern is a *logos spermatikos* (Witt, 1931). The seed-patterns are *recipes* for making things, and they unfold much like computer programs unfold (E 4.4.11, 4.4.16). The forms are recipes for constructing concrete things. Of course, today we know that seeds for plants and animals contain genetic programs. These are recipes for making organisms.

Forms Strive. Platonism portrays the strings as *striving* to manifest their instances. Leibniz expresses this in his *doctrine of the striving possibles* (1697; 1991: 171-172, 174-175; Blumenfeld, 1981). Sometimes their strivings succeed, other times they fail. If the striving is not blocked, it succeeds; but if it is blocked, it fails. The striving in the strings comes from the One. Just as the One strives to maximize self-congruency, so the strings strive to manifest instances. Each string strives to manifest all logically possible instances of itself. Since the maximization of self-congruency is rational, the derivative striving of the strings is also rational. The striving is blocked or compelled by reasons.

2. The Sources of Animating Reasons

The Rationality of Animation. The self-negation of non-being defines the distinction between Zero and One. This distinction repeats among the propositions, as the Lexetor rationally assigns the logical values true (One) and false (Zero) to them. It repeats among the sets, as the Constructor builds them using inclusion (One) and exclusion (Zero). And now it appears among the strings, as the Selector separates them into the animated (One) and the non-

animated (Zero). Driven by the positive policy of the One, all these distinctions are rational. There are *reasons for* or *reasons against* the animation of particular strings. These reasons occur in the Lexetor. Based on these reasons, the Lexetor produces the laws that separate the strings that are worthy of animation from those that are not worthy of it. These laws shape the music in the Constructor, and this shape guides the Selector. These laws were stated in the incantation for seeds; but now we must show that they are rational. These reasons act on the forms implicit in strings, in the forms encoded by strings.

Reasons Internal to Strings. Strings are equivalent to forms; here they are identified with their forms. Forms can manifest images of themselves or fail to manifest such images. The reasons against any form can lie in the form itself. On the one hand, some forms are *self-inconsistent*. Self-inconsistent forms include married bachelors, colorless green ideas, and round squares. The Russell Set is self-inconsistent. Forms can contain contradictions which make them crash. If any form is self-inconsistent, then inconsistency is increased if it manifests an image of itself. That increased self-inconsistency is a reason against its animation. Self-inconsistent forms are *self-defeating*. Since the Constructor minimizes self-incongruency, it is impossible for any self-inconsistent form to manifest an image of itself. Hence there are no unmarried bachelors, colorless green ideas, or round squares. The Russell Set does not exist. On the other hand, some forms are *self-consistent*. Four-sided squares are self-consistent. Every set defined by the greatest consistent set-theory is self-consistent. So these self-consistent forms contain no reasons against their own animations. They are not self-defeating. But this is not sufficient for them to manifest images.

Reasons External to Strings. Although self-consistent forms contain no reasons against their animation, other forms might provide reasons against them. Although they do not defeat themselves, they might be defeated by others. The strings (that is, the forms) in the green-wood are linked by many relations, including relations of rational cooperation (support) and rational competition (obstruction or blockage). So we need to define the ways forms support or defeat each other. On the one hand, since reasons flow through logically ordered chains of inference, forms support each other through logically ordered relations. Logically ordered inference relations are *dependencies:* later statements in some proof depend for their truth on the earlier statements in the proof. Thus reasons for animation flow through logical dependencies. On the other hand, if there is any failure in some earlier statement of the proof, that failure propagates through all the later statements. If there is any reason against the animation of some given form, then that reason either lies in the form itself or it lies in some other form on which that given form depends. Reasons against animation flow through the logical dependency relations that order the forms.

Reasons based on Definitions. The *first dependency relation* involves definition. Sets on higher ranks are defined in terms of their ancestors on lower ranks. Longer bit strings are defined in terms of shorter strings. More detailed programs in the all-wood exist on its higher ranks. They are defined in terms of their lower ancestors. More precisely, the forms are ordered by *dependency*. Every form is either an initial form, a successor form, or a limit form. Every initial form depends on no other form; it is independent. Every successor form depends on its predecessor. Every limit form depends on every form in the progression of which it is the limit (and thus it depends on that progression). The dependency relation extends backwards through chains of ancestors (more precisely, it is transitive). Thus the child depends on its parents, the parents on their grandparents, and so the child depends on its grandparents. Every form depends on the forms in its history. It depends on its ancestors. And if there is

any reason against the animation of any descendant form, then it lies in some ancestral form on which that descendant form depends.

Reasons based on Complexity. The *second dependency relation* involves complexity. Every form has some complexity. Any simple form has zero complexity; all other forms have positive complexities. Since complexity is accumulated, it is a kind of dependency. Complex forms depend on simpler forms. Since the complexity of any form is its intrinsic value, ordering forms by complexity is ordering them by value. Any two forms are comparable in terms of their intrinsic values. For any forms *xander* and *yonder*, either xander is intrinsically worse than yonder, or xander is as intrinsically valuable as yonder, or xander is intrinsically better than yonder. Henceforth, unless otherwise noted, any reference to value is to intrinsic value. For Platonists, value plays a crucial role in existence. The Directionality Argument shows that it is *for the best* that non-being negates itself. It is for the best that the One maximizes congruency. Things exist because it is for the best that they exist. Although the power of the One drives abstract forms to manifest their concrete instances, that power is confirmed by the supreme value of the Good.

3. The Logic of Animation

Since congruency and incongruency are logical, they involve *reasons*. By minimizing incongruency and maximizing congruency, the Constructor acts rationally. Although the Constructor is not a mind, it acts within the *rational ordering of nature*. Its animation of forms is governed by reasons. Reasons are either negative or positive. For any form, either there is no *reason against* its animation, or else there is some reason against it. Likewise, either there is no *reason for* its animation, or else there is some reason for it. So there are four cases:

Some Against None For. Here there is some reason against the animation of the form and no reason for it. Hence the animation of the form is *rationally forbidden*. It *should not* be animated; it *ought to* not be animated. And if there is no reason for its animation, then that is a further reason against its animation. Since the Selector minimizes incongruency, it never does that which is rationally forbidden. But the Selector regulates the concretizing power of the One; it regulates the entry of that power into forms. So, if any form falls into this first case, then the power of the One does not flow into that shadow form; it does not get animated. It does not manifest an image of itself.

Some Against Some For. There is some reason against the animation of the form, and some reason for it. Reasons against animation introduce defects (they add inconsistencies). As soon as a single defect is introduced, the entire system is ruined. So reasons against animation always overrule reasons for animation. Consequently, if any form falls into this second case, then its animation is rationally forbidden. The Selector does not animate that shadow form; it remains in the wild hunt.

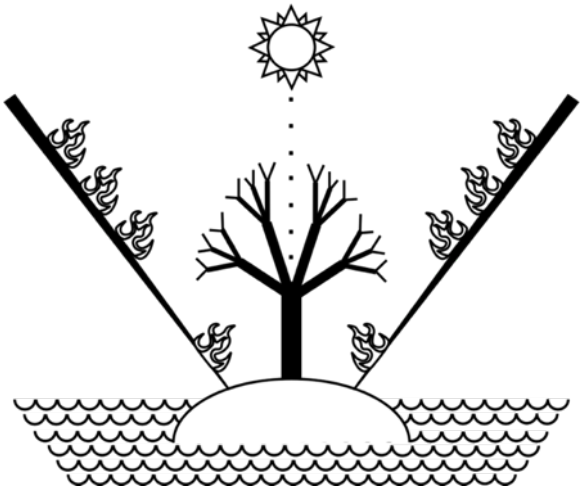
None Against None For. There is no reason against the animation of the form, but there is also no reason for it. But so far we are only talking about first-order reasons. But if there is no reason for animating the form, that is a second-order reason against animating it. And if there is any reason against it at any order, then it is rationally forbidden for the One to animate it. Consequently, if any form falls into this third case, then the Selector does not animate that shadow form.

None Against Some For. Since no reason is against animating the form, its animation is not rationally forbidden; and since some reason is for it, its animation is *rationally obligatory*. It *should* or *ought to* be animated. Since the Selector maximizes congruency, it always does what it ought to do. So, if any form falls into this fourth case, then the Selector channels the power of the One into that bright form. It manifests a concrete image.

4. Fire-Energy Animates the Seeds

The power of the One flows through the green-wood in an excessive way; it flows excessively through the green arrows and through the seeds; but if it flows excessively, then there is some excess in its flow; that excess is a derivative type of power, some new type of energy which animates the seeds. This derivative energy resembles the old Stoic *pneuma* (Cicero, ONG, 2.23-8). The Stoics said the *pneuma* animates all living things; digitalists say the derivative energy animates all the seeds in the green-wood. The Stoics said the *pneuma* drives every old universe to create a new universe; digitalists say the derivative energy drives the creation of many lineages of concrete universes. For the Stoics, the *pneuma* is the *pyr technikon*, the designing fire; digitalists say derivative energy drives evolution to mindlessly design all things. For the Stoics, the *pneuma* expresses itself physically as a thermodynamic power; for digitalists, the derivative energy will express itself in the thermodynamic evolution of complexity. The parallels between the Stoic *pneuma* and our fire-energy justify the use of fire to symbolize the energy in the veins of the green-wood. The excessive power which flows through the green arrows, and which animates the seeds, is *fire-energy*. However, the Stoics also argued for the intelligence of the *pneuma* (Cicero, ONG 2.30-2). For digitalists, fire-energy is not intelligent. Like electricity, fire-energy it has no mentality.

Iamblichus often talks about a fire-energy which animates all things (M 1.8-9, 1.12, 2.4, 3.20, 4.3, 5.11-12). He says a "divine creative force" drives all things to self-organize (M 1.8). He says "the energy of divine fire shines forth" in all things (M 4.3). Thus Iamblichus supports the use of the term *fire-energy* to refer to the universal animating power. This fire-energy is the power of the One made concrete; it is the power of self-surpassing in all concrete things. It is the power of the One flowing through the Selector. It is the heat of the sun, that is, the heat of the Good. The Figure on the right shows the green-wood (the tree of cosmic programs) under the sun. This is the seventh part of the pagan image. This tree is animated by fire-energy, signified by the flames on the upstretched arms of V. V is the iterative hierarchy of sets.



13. The Burning Numbers

1. Fire Ever-Living

Fire Energy. Since the One cannot contain its own power, it breaks open, erupting like a volcano. Fire-energy surges up out of the ground of being, and it rises into the sky. This *fire-energy* is the power of the One, which breaks through the secondary hypostasis (the Lexetor), then breaks through the tertiary hypostasis (the Constructor), to overflow into concreteness: it is self-surpassive power rendered concrete. Since it emerges from the Constructor, this power enters the *quaternary hypostasis*. This is the Selector. Following Hawking (1988: 174), we say the Selector *breathes fire* into the bright strings (the seeds), where this fire is the concretizing power of the One.

Strings are Programs. As the One expresses itself beyond its abstract objects, it manifests a further power. This further power is its *fire-energy*. When seeds are animated, they are animated by this fire-energy. But seeds are forms, and forms are recipes. As creative fire-energy flows through any recipe, the recipe goes into motion, and its motions take on a kind of life of their own. The moving recipe speaks into being a creative agent that performs those motions. The moving recipe is part of the music in the Constructor, while the agent is part of the Selector. The agent depends on the recipe; the recipe *manifests* the agent as a derivative object. So the agent is like a moving image projected by the recipe. More precisely, recipes are programs. Since the motions of a program define a computation, the agent manifested by a program is a computer. As a program goes into motion, a computer emerges which runs that program. The program formally causes the existence of the computer. Thus strings are forms and forms are programs.

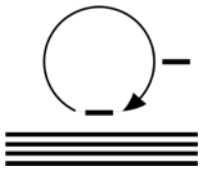
2. The Incantation for Animations

This fire-energy regulates itself according to the laws for the animation of programs. These laws are emanated by the Lexetor, and they occupy its seventh ring. They shape the music in the Constructor, which guides the agents in the Selector. These laws determine whether or not the One animates some program in the all-wood. As it will turn out, the only programs animated in the all-wood are the seeds in the green-wood. The four laws for the animation of programs emerge in the *incantation for animations*:

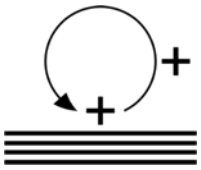
The Initial Law of Animation. Any simple program has no complexity; since conflict requires complexity, it contains no conflicts. It thus contains no reasons against its own animation. Simple programs do not depend on any other programs. So no other programs which provide any reasons against their animation. Since simple programs are not defeated by themselves, and they are not defeated by other programs, they are not defeated at all. There no reasons against their animation. Since it is good for the power of the One to further express itself in concreteness, that goodness is a reason for animating any initial program. But any program which has no reasons against its animation and some reason for it is bright. Thus every simple program is bright.

Since every simple program is bright, the power of the One (now the power of the Selector) enters every simple program. This is the first act of the Selector, which selects every simple program for animation. There exists exactly one simple program, namely, the empty string; it is the initial root of the tree of programs. It is equivalent to the empty set. So the initial program is animated. It is the initial seed. The Figure on the right shows the animation of the initial seed. When the power of the Selector enter into this seed, it bursts into flames. The initial seed is animated by fire-energy.

The Successor Law of Animation. The successor law for animation applies to any seed. Each successor of any seed is either a seed or a skull.



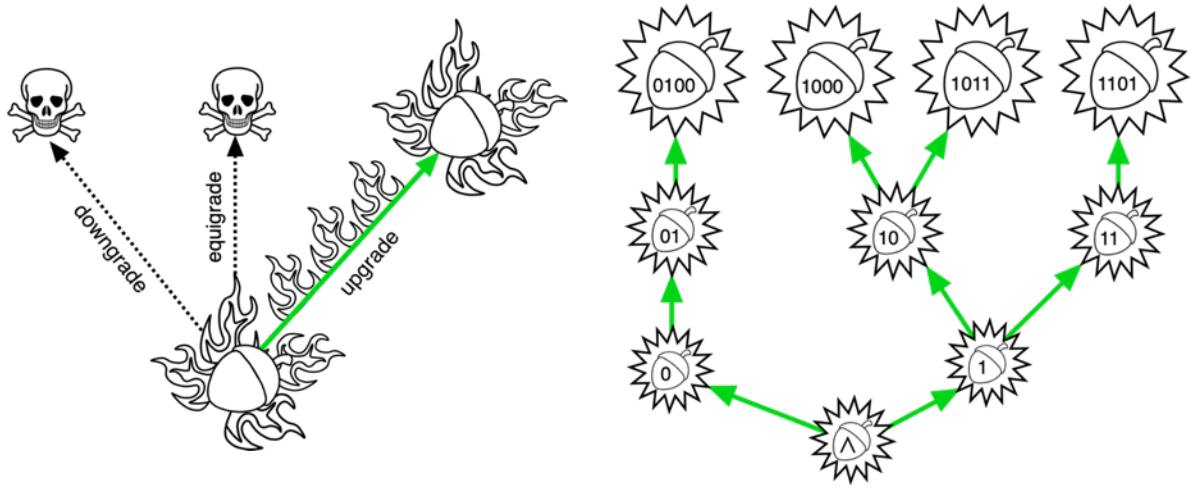
Any successor skull is defective in some way, so there is some reason against animating it. This reason prevents it from getting animated. This reasoning generalizes to all skulls. So the successor law for animations says that power does not flow from any seed to its successor skulls. No successor skulls are ever selected for animated. Successor skulls are always rejected. The successor skulls lie in the shadow of the wild hunt.



Any successor seed is an upgrade or improvement of its parent. Since its parent is also a seed, it inherits no defects from its parent. And since it upgrades its parent, it adds no new defects. So there are no defects in any successor seed. Since there are no defects, there are no reasons against its animation. And since each successor seed adds some new value, that new value provides some reason for its animation. Since there are no reasons against its animation, and there is some reason for its animation, the power of the One enters every improvement of every seed. All these improved successors are bright. Fire-energy flows from every seed into its successor seeds.

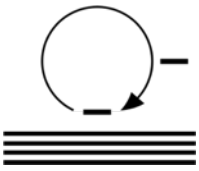
The successor law for animations has two parts. Its *closing part* states that for every seed, there exists at least one way to upgrade it. That way is an upsloping arrow that rises from that seed. This arrow is decorated with an algorithm for transforming that seed into some improved seed. This upsloping arrow is an unblocked path through which fire-energy flows. The *opening part* of the successor law for animations states that for every way to upgrade any seed, there exists some successor seed which is upgraded in that way. The closing and opening parts of the successor law extend the activity of the Selector.

At the end of the upsloping arrow, there exists some successor seed. The fire that flows through the upsloping arrow enters into the successor seed. Agents appear at those seeds. Fire rises up through all the upsloping arrows (all the improvement relations) in the green-wood. Fire-energy is the vital sap that flows through the veins in the green-wood (the tree of programs). The Figure on the right shows fire flowing through a green arrow to a successor seed. The Figure on the left shows the first few ranks of animated seeds in the green-wood.

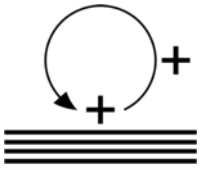


The Limit Law of Animation. Any progression of programs contains an initial program followed by an infinite series of successors. Every program in any progression is surpassed by exactly one successor in that progression. A *limit* of some progression is some program that is minimally more detailed than the entire progression. It is the least detailed program which is also more detailed than every program in its progression. The richness of consistent definability ensures that every progression has at least one limit. Limits always exist.

There are two kinds of progressions. On the one hand, the progression contains a skull. If any program in a progression is a skull, then that defect runs throughout the rest of the progression. The entire progression is defective, and is a skull. Fire-energy does not flow through any defective progression. Since fire-energy does not flow through any defective progression, it does not flow into its limits. All its limits are skulls too. On the other hand, the progression contains only seeds. If its programs are all seeds, then the progression itself is bright; fire-energy flows through it. And it can flow into its limits.



The limit of any bright progression is either a limit seed or a limit skull. Consider the *limit skulls*. Since each skull is defective in some way, there is some reason against its animation. Hence it does not get animated. The power of the One does not enter into any limit skulls. The limit skulls lie in the shadow of the wild hunt.



The limit of any bright progression is either a limit seed or a limit skull. Consider the *limit seeds*. Since the progression of which it is the limit is bright, it inherits no defects from its progression. Since it is an upgrade of its progression, it adds no new defects. So a limit seed has no defects, and thus no reasons against its animation. And since it adds some new value, there is some reason for its animation. Since there are no reasons against its animation, and there is some reason for its animation, the power of the One enters every limit seed of every bright progression.

The limit law for animations thus has two parts. The *closing part* states that for every bright progression, there exists at least one way to upgrade that progression. This way is an upsloping arrow. It rises from the progression, and defines the transformation of the progression into some improved seed. This upsloping arrow is an unblocked path through which fire-energy flows. The *opening part* of the limit law states that for every way to upgrade any bright progression, there exists some limit seed which is upgraded in that way. The closing and opening parts of the limit law further extend the activity of the Selector. Its agents follow these parts of the limit law. The fire-energy that flows

through every upsloping arrow enters into its limit seed. It animates every limit seed in the green-wood. Agents appear at those limit seeds.

The Final Law of Animation. The previous three laws animate all the seeds on all the ranks of the green-wood. For every number *n* on the *axis mundi*, for every seed on the *n*-th rank of the green-wood, the power of the One enters into that seed. It is animated by fire-energy. Hence the final law of animation states that every seed is animated. Apart from these laws, there are no other laws for the animation of programs. Consequently, for any program that is not a seed, there are no reasons for its animation; but that is a reason against their animations; hence every program that is not a seed is not animated. But the programs that are not seeds are skulls. So *no skull gets animated*. Skulls lie in shadow; they lie in the wild hunt. The final law fully expresses the logic of animation. But this is also the logic which extends value into concreteness. The logic of animation entails that a program is animated if and only if it is a seed. But all the seeds are in the green-wood. By selecting seeds for animation, and by rejecting skulls, the Selector acts in the best possible way, and thus honors the Good.

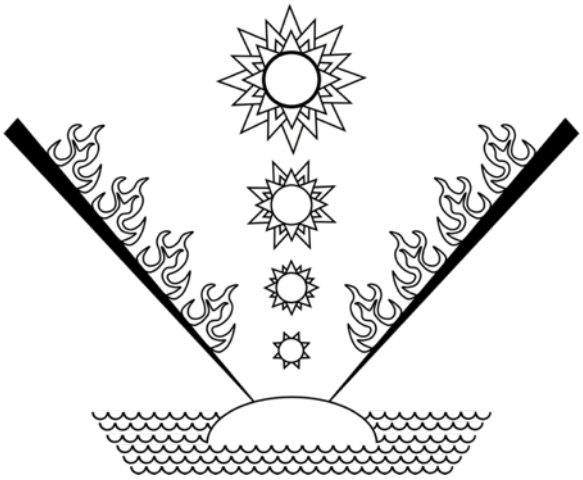
3. The Worlds and their Blazes

A mathematically possible world is a class of programs. Just as programs should or should not be animated, so worlds should or should not be animated. On the one hand, if any world contains any programs that should not be animated, then that world should not be animated. On the other hand, if any world contains only programs that should be animated, then it should be animated.

Shadow Worlds. A shadow world contains at least one program that should not be animated. But such programs are skulls. So if any world contains skulls, then it should not be animated. Animating that world violates the prohibition against animating skulls. Any world that should not be animated is a *shadow world*. Since shadow worlds should not be animated, their values are negative.

Bright Worlds. But the programs that should be animated are seeds. So if any world contains only seeds, then it should be animated. Animating that world satisfies the duty to animate seeds. Any world that should be animated is a *bright world*. By default, every program in the empty world should be animated. Of course, since the empty world contains no programs, and since value is contained in programs, the empty world has no value. Its value is zero. The empty world is a bright world; however, it is the least of all the bright worlds. It is the dimmest of all possible worlds. Bright worlds are ordered by inclusion. They accumulate value as they accumulate seeds. Bigger bright worlds are better than smaller bright worlds. Since the seeds are sorted into ranks in the green-wood, some of the bright worlds are numbered by those ranks. The *n*-th bright world contains all the seeds in the green-wood on every rank up to and including the *n*-th rank. So there is a bright world for every number on the *axis mundi*. Since every bright world is eventually included in some numbered bright world, the bright worlds can be identified with the numbered bright worlds. The bright worlds are nested inside of each other. Each bright world with a higher number includes every bright world with a lower number. The bright worlds are all surpassable. The biggest bright world includes all the seeds on all ranks of the green-wood. Hence it is identical with the green-wood. Since it is the biggest bright world, it is the best bright world. It is the brightest of all possible worlds. Hence *the green-wood is the best of all possible worlds*. Of course, *worlds are not universes*. Every universe is surpassed by better universes. Any universe in any bright world is a *bright universe.* Every bright universe is surpassed by brighter universes.

The Ascent of Blazes. Every bright world is associated with an *animating proposition*. The *n*-th animating proposition just asserts that every seed in the *n*-th bright world is animated. But the seeds in the bright worlds are animated by fire-energy. So these animating propositions are concentrated fires. These animating propositions are the *blazes*. Since the *axis mundi* is an unsurpassable series of surpassable numbers, and since there is a blaze for every number on the *axis mundi*, there is an unsurpassable series of surpassable blazes. The initial blaze is the dimmest and coolest blaze. It expresses the fact that the One animates the initial seed. Its light comes from the sunrise of the One over the ocean of non-being (E 5.5.8.1-10). Each successor blaze is minimally hotter and brighter than its predecessor. Each limit blaze is minimally hotter and brighter than every blaze in the progression of which it is the limit. The Figure on the right shows the ascent of several blazes up into the abstract sky. This is the sixth part of the pagan image. The series of blazes marks the orderly animation of seeds. So the *n*-th animating proposition is just the *n*-th law followed by the Selector. But animated seeds unfold into cosmic computers (dragons), which unfold into universes. The blazes mark the animation of universes by the Selector.



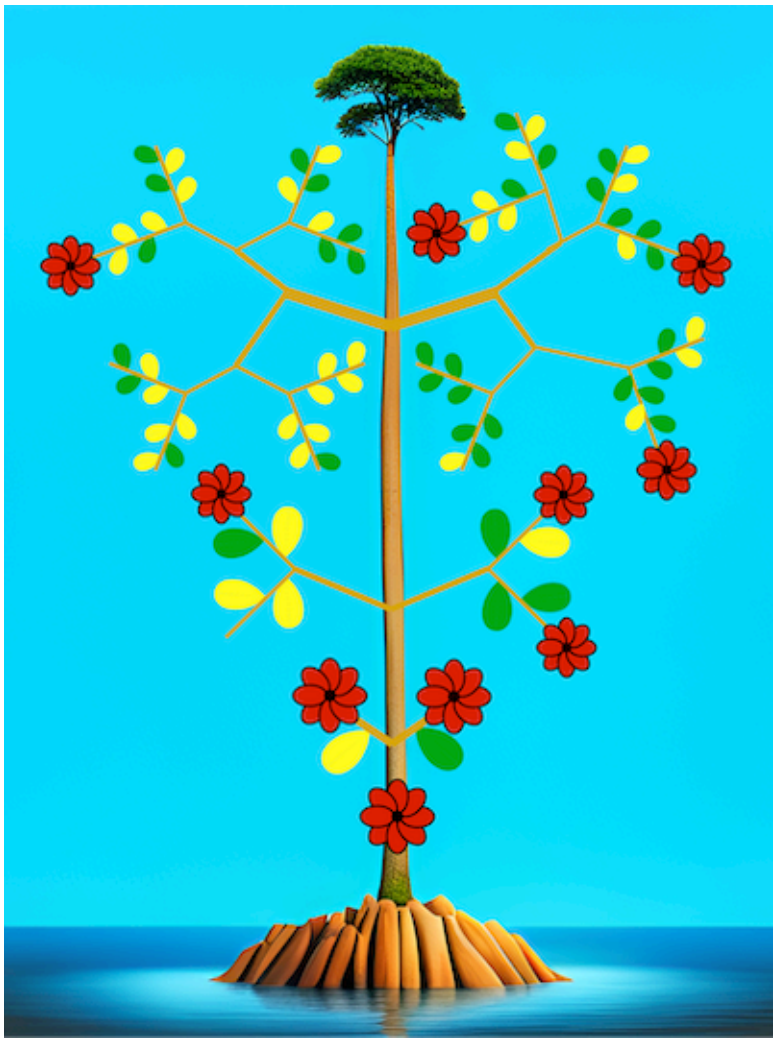
Each blaze is a proposition. Consider this proposition: every proposition is either true or false. This proposition speaks about all propositions, including itself, with a soundless voice. It is reflexive. Self-consistency requires its truth. Here is another proposition that talks about propositions: for every proposition P, if P is a blaze, then P is true. This proposition, which states that every blaze is true, is the *unsurpassable blaze*. It is an ideal blaze burning with a transcendental flame. But just as a glass eye is not an eye, so an ideal or transcendental blaze is not a blaze. It is the *ecstasy of blazes*. This ecstasy is *the sun*. The unsurpassable blaze asserts that *the best of all possible worlds is animated*. It expresses the full unfolding of the One into concreteness. The sun is used by all Platonists to symbolize the Good. So the unsurpassable blaze is the Good, the ultimate law followed by the Selector. Every blaze is an image of the sun; it is a mirror which shines with reflected solar light. It honors the Good.

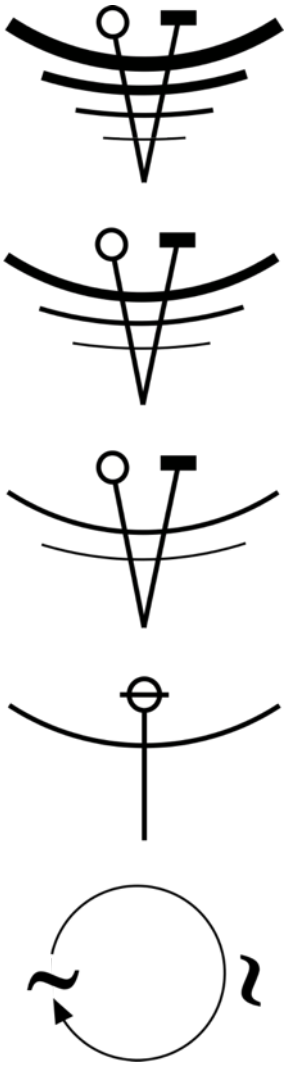
4. An Image of the World Tree

A Figure of part of the world tree is show below in this section. Start with the ocean of non-being, the element of water, which negates itself. Its self-negation is symbolized by the glyph with a tilde turning on itself. This self-negation is the One, the element of earth, the island rising from the ocean, symbolized by its glyph with one wing and one head, combining the 0 and the 1. The One gives birth to the Lexetor, the element of air, which emanates the axioms of set theory. It is symbolized by its glyph with two wings, and the false separated from the true. The Lexetor produces the Constructor, which produces the beings, that is, sets. The Constructor is also the element of air, but this air is hotter, and corresponds to heat. The Constructor appears through its three-winged glyph.

All four hypostases produce the tree whose leaves are sets. Yellow leaves correspond to red dots, while green leaves are black dots.

With the introduction of fire, the Selector appears, through its four-winged glyph. The Selector animates the seeds in the world tree, seeds which lie at the end of branches. Every seed (every string in the green-wood) manifests a flower (which contains the One, a form, algorithm, computer, and universe). Through the work of the bees, the seeds in the green-wood unfold into flowers. The flowers appear over Λ, 0, 1, 01, 10, 11, 0100, 1000, 1011, and 1101. Through the work of the birds, the flowers unfold into universes. However, the universes are not shown in the Figure. The world tree continues to rise to the Good.





5. Fire Fills the Abstract Sky

Because it is power in motion, the elemental fire is fire-energy, which is the concretizing power of the One. It flows through the veins of the green-wood. As it flows through those veins, it flows through the seeds in the green-wood. It animates them and causes them to manifest (to unfold into) their concrete images. Besides causing these forms to manifest their concrete images, it drives these images to surpass themselves. It is the power of self-surpassing. This fire-energy

has parallels in the energies in Wicca and other paganisms. It is the energy used in magic. It has counterparts in the ultimate energies in many cosmologies. For example, it has a counterpart in Aztec *teotl* (Maffie, 2014: ch. 1).

The fire-energy is an *elemental power*. By describing its emergence, we welcome it into our circle of reasoning. Its sigil or glyph is the rising triangle. Here some (but not all) digitalists will pause in ritual to give thanks: "Holy fire, we thank you for animating the best possibilities." Others may want to perform rituals involving physical fire in some symbolic way. You could light lamps, burn candles. You could go to the Burning Man festival, to burn the Man, to burn the Temple. Whether or not you do any rituals is up to you. Since the fire-energy is an elemental power, which emerges directly from the One, it is a holy power – it is *holy fire-energy*. Since fire-energy is holy, it exists ontologically rather than ontically, and it is prior to all predication. Since the fire-energy is holy, and it animates all concrete things, all those things are animated by holy power. But those things exist ontically rather than ontologically; they are beings among beings, and no beings among beings are holy. Holiness is purely ontological. Like the other elemental powers, the fire-energy has neither any mentality nor any gender. It is neither any god nor any goddess. It makes no sense to pray to it, worship it, or sacrifice to it. Nevertheless, fire-energy can be invoked in ritual. Since it gives you your energy, you can give thanks to it in rituals of gratitude. It can be invoked in your body. You invoke it by arousing it in your body. You pull it up from your ontological depths to your ontic surface.

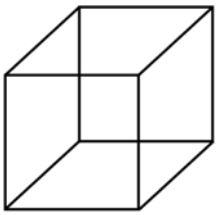
14. Unfolding

1. The Unfolding of the One

The One is absolutely productive power (E 5.2.1, 3.8.8, 3.9.3, 5.4.1, 6.7.15, 6.8.9, 6.9.6). It is the primary hypostasis. From its power, there emerges the secondary hypostasis, the Lexetor. From the Lexetor, there emerges the tertiary hypostasis, the Constructor. The Constructor sings into being all logically possible mathematical objects. So it contains all the objects needed for mathematical physics. From the Constructor, there emerges the quaternary hypostasis, the Selector. The Selector uses value to manifest concrete universes. The Selector acts demiurgically: Plato said the demiurge used the *best* cosmic plan to make our universe (*Timaeus*, 29a-30c). But the best requires the Good. So the Selector uses the Good as a guide for making universes. Plato said the Good is responsible for all things (*Republic*, 509b). However, the Good is not a efficiently or formally creative agent; the Good acts only as a final cause. The outflowing power of the One shapes itself according to the Good.

Pythagorean Axioms of Unfolding. The ancient Pythagoreans did mathematical physics. The Greek writer Alexander Polyhistor described how they used mathematical objects to build our physical universe. They went from the simple One to the enormous complexity of our universe in five main steps:

> (1) The beginning of all is unity; (2) unity is a cause of the indefinite dyad . . . ; (3) both unity and the indefinite dyad are sources of the numbers; (4) the points are proceeding from numbers; the lines - from the points; from the lines are plane figures; from plane are solid figures; (5) from them – perceivable physical solids, in which four elements are - fire, water, earth, and air; moving and changing totally, they give rise to the universe. (in Diogenes Laertius, *Lives*, 8.25)

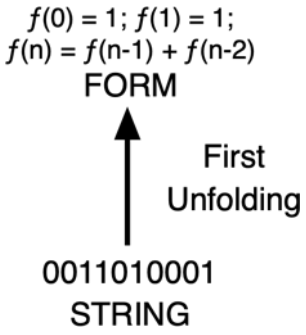


The five steps in Polyhistor's construction are five *axioms of unfolding*. Unfolding is manifestation. The Figure on the right shows the unfolding. But the progression from point to cube is also theurgical: it is a part of sacred geometry, which illustrates the progression of your future bodies from human to divine. Digitalism updates Polyhistor. (1) We begin with unity (the One). (2) The One generates the dyad, which makes the axioms of logic and set theory. (3) The axioms emanate the objects of pure mathematics, like numbers and sets. (4) Some of these are objects of mathematical physics, like vector spaces, quantum fields, and so on. (5) The objects of mathematical physics emanate concrete physical things, which make our universe. Plato offers a similar theory of unfolding (*Timaeus*, 53c-55c): from numbers, he makes triangles; from triangles, he makes the Platonic solids, which are the shapes of the atoms.

2. How Numbers Unfold into Things

The One Unfolds into Strings. The zeroth episode of unfolding starts with the One. The One, through a long drama involving the Lexetor and the constructor, unfolds into binary strings.

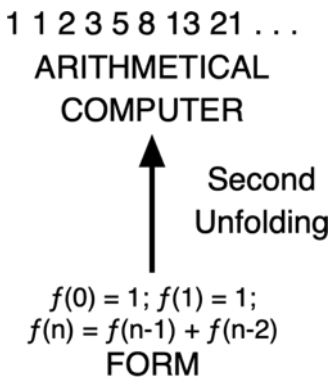
Strings Unfold into Forms. Binary strings can encode propositions, and the propositions include equations and conjunctions of equations. So there is some *Fibonacci string* in the all-wood that encodes the three equations for the Fibonacci numbers. These equations are implicit in that string, and the Fibonacci string unfolds into those Fibonacci equations.. The equations for the Fibonacci numbers define the function f. Since the 0-th Fibonacci number is 1, f associates 0 with 1, written as $f(0) = 1$. Since the 1-st Fibonacci number is also 1, $f(1) = 1$. Each next Fibonacci number is the sum of the previous two, so $f(n) = f(n – 1) + f(n – 2)$ for any n greater than or equal to 2. Hence $f(2)$ is $f(1)$ plus $f(0)$, which is 2. The group of equations that defines f is a mathematical *form*, namely, the *Fibonacci form*. The Fibonacci form is a good example of a *recursively defined* form. A sequence of objects (like a sequence of numbers) is recursively defined if the later items are defined in terms of the earlier items.



Forms Unfold into Arithmetical Computers. The form of the Fibonacci numbers (the Fibonacci equations) simply defines an eternal relation among numbers. Now the Fibonacci equations unfold further into an *arithmetical computer*, that is, a computer whose entire program produces the Fibonacci numbers. The computer defines algorithmic operations, which take place in its temporal dimension. The computer writes down these numbers on a spatial tape. The first dozen Fibonacci numbers go like this:

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144.

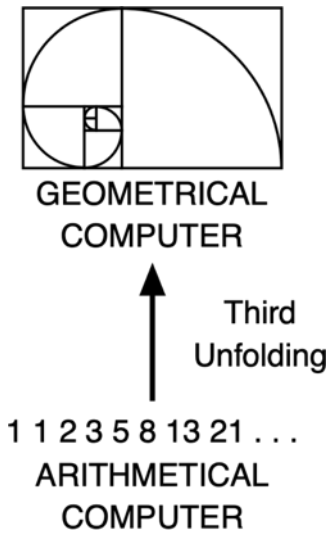
The numbers on the tape are encoded by values, which are equivalent to quantities of idealized energy. The Fibonacci equation for numbers greater than 1 defines a causal law, in which the energies of earlier numbers in space cause the appearance of later numbers on the tape. So, even though this computer is mathematical, it has proto-physical features like time, space, energy, and causality.



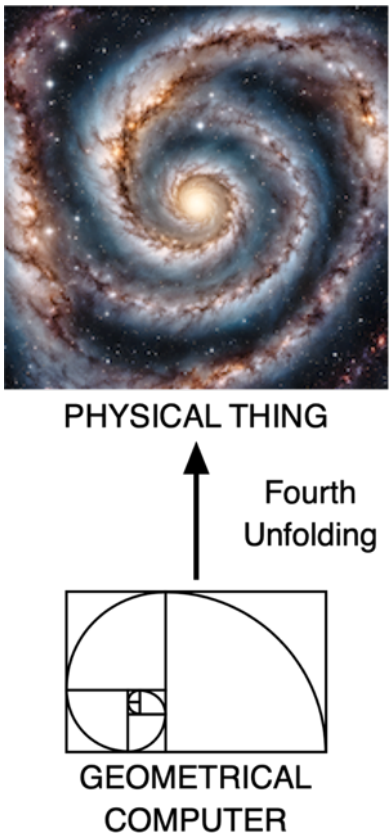
Arithmetical Computers Unfold into Geometrical Computers. Arithmetic unfolds into geometry (E 3.8.4.1-14). So the Fibonacci numbers unfold into shapes. Those numbers encodes a series of geometrical shapes. These shapes are figures in two dimensional space. So the arithmetical computer unfolds into a *geometrical computer*, which has both a 1D tape for writing numbers, and a 2D spatial memory for drawing geometrical figures. Its spatial memory is composed of cells like a chess board. Initially, they are all blank, their energy values are all zero. It draws shapes by writing an energy value of one into some cells, so that the collection of energized cells makes the shape.

Boxes. The geometrical computer uses the Fibonacci equations to write down the Fibonacci numbers on its 1D tape; as it writes them down, it draws *Fibonacci boxes* in its 2D spatial memory. A Fibonacci box is just a square whose sides are the same Fibonacci number in length. So the first Fibonacci box is a 1-by-1 square. The second is also a 1-by-1 square. The third is a 2-by-2 square while the fourth is a 3-by-3 square. It displays the Fibonacci squares like this: (1) It draws the zeroth box. (2) It draws the first box beside the zeroth box (so that they share a side). (3) As it draws all the later boxes, it places each next box on the longest side of the previous two boxes.

Spirals. The structure of boxes can be augmented with parts of circles. In each box, draw a quarter circle from one corner to the diagonally opposite corner. When these quarter circles are drawn in the expanding series of Fibonacci squares, the result is the Fibonacci "spiral". It isn't really a spiral, but it closely approximates a spiral. The Figure on the right shows this construction.



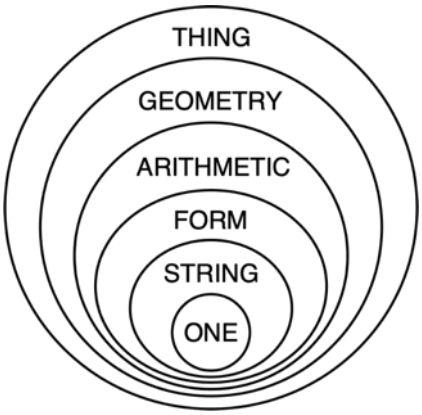
Geometrical Computers Unfold into Physical Things. Sometimes the Fibonacci numbers unfold directly into physical things. Most (but not all) flowers have some Fibonacci number of petals. The region of space-time that contains the growing flower also contains a numerical computer running the Fibonacci algorithm. But the Fibonacci numbers typically unfold into geometry, which then unfolds into physics. The Fibonacci spiral often appears as a dynamical pattern in the growth of plants. It appears in the heads of sunflowers, in pineapples, artichokes, pinecones, and so on. It appears in the leaves of the spiral aloe, in cactus heads, and more. The region of space-time that contains these growing plants (or plant organs) also contains a geometrical computer running the Fibonacci algorithm. As it runs that algorithm, it acts as a formal cause, which manifests the Fibonacci spiral in the growth of the plant. The Fibonacci computer cooperates with many other algorithms running in that space-time region. All the algorithms running in that space-time region form coalitions. The spiral plant coalition wins; hence its form prevails in the physical plant. The Fibonacci form, and its computers, are *present* in these plants.



Spirals. The Fibonacci sequence defines other sequences. The *golden sequence* is defined by dividing each next Fibonacci number by its predecessor. The golden sequence converges to a number known as the *golden ratio*. The golden ratio in turn unfolds into the curve known as the *golden spiral*. You draw the golden spiral by starting at some central point and moving your pen in circles while expanding outwards at the constant rate of the golden ratio for every ninety degree turn. The Fibonacci "spiral" closely approximates the golden spiral. The golden spiral is an example of a *logarithmic spiral*. Logarithmic spirals are common in physical structures in our universe. They appear in the arms of spiral galaxies (like our own Milky Way). So the Fibonacci spiral unfolds (approximately) into spiral galaxies. The spiral form is present in those galaxies. Logarithmic spirals also appear in the bands of tropical cyclones (hurricanes), on many beaches (like Half Moon Bay in California). They occur all over the biological world. They appear in the spiral nautilus shells, in the human cornea, and in the approach of an insect to a light source and a hawk to its prey.

3. Logical Flowers

Unfolding. All things are logical flowers. The deepest part of every flower, its logical core, is the One. As the core, the One does not really count as a layer; the layers are wrapped around the core. Every flower has five main layers around the One (E 4.3.17.13-21, 6.4.7).[25] (1) The One generates the first layer, which is some *binary string*. Binary strings encode forms, which are implicit in the strings. (2) The strings unfold into the second layer, the layer of *mathematical form*. For many physical things, this is an algebraic form, a relation among numbers. Thus the Fibonacci series can be expressed as a recursive function. The strings encode the forms, which are implicit in the strings. The unfolding of the string into the form makes the implicit explicit. (3) The form unfolds into some *arithmetical computer*, which is an algorithm for constructing a sequence of numbers. More generally, this is an algebraic computer, which is an algorithm for constructing some sequence of algebraic objects. This is the second layer of the flower. (4) The arithmetic computer unfolds into some geometrical computer, which displays the arithmetic sequence in space-time. It runs some procedural rule for



[25]Plotinus portrays the universe as a logical onion, with the One at its core, surrounded by Nous, which is surrounded by Soul (E 4.3.17.13-21). He portrays the One as a luminous mass at the logical core of a thing (E 6.4.7).

constructing a geometrical structure. A geometrical computer draws Fibonacci boxes and then the Fibonacci spirals. (5) The geometrical computer unfolds into a growing physical structure in 3D space and 1D time. This computer runs in some spatio-temporal region which contains some physical thing. This thing is the fifth and outermost layer of the logical flower. The physical shape of the thing is the meaning implicit in the original string; the meaning of the string appears explicitly in the physical thing. Thus mathematics manifests itself physically. Video games illustrate the unfolding of numerical forms into algorithms, then into geometrical structures, then into universes with digital physics.

Every being requires unity: "It is in virtue of unity that beings are beings" (E 6.9.1; see 5.3.15, 5.6.3, 6.6.9, 6.6.13). Likewise "anything losing unity loses its being" (6.9.2). The unity of every being *x* is the One in its depths; it is the-One-in-*x*. The One is a light in the depth of every being (6.4.7, 6.9.4); but that light is a reflection of the Good. For any beings *x* and *y*, the One in the-One-in-*x* is identical to the One in the-One-in-*y*; but the-One-in-*x* is *not* identical to the-One-in-*y*; and the One is *not* identical either to the-One-in-*x* or to the-One-in-*y*.

Every being among beings is a logical flower with the One as its logical core (E 4.3.17.13-21, 6.4.7). The One in that core surrounds itself with an abstract mathematical form (like a string). If that string is animated, it manifests a form, an algorithm or program, a computer, and finally some concrete thing. These manifestations make rings around the One. They are the concentric rings of logical flowers. Every concrete thing is a logical flower with the One at its core.

While the One is at the logical core of any logical flower, the layers of that logical flower grow increasingly distant from the One. The string is at a distance of 1 from the One; the form at distance 2; the arithmetic computer at distance 3; the geometrical computer at 4; the physical thing at 5. But intrinsic value grows with greater distance from the One. So, among the layers, the least valuable is the string, the most valuable is the physical thing. The physical things have the greatest ontic value.

4. Sacred Geometry and Sacred Arithmetic

Sacred Geometry. When geometry is used to illustrate metaphysical ideas, it becomes sacred geometry. Ancient Platonists used sacred geometry (Goulding, 2022). Modern pagan rituals involve sacred geometry: they occur in circles and often involve the four cardinal directions. The wheel of the year and stone circles involve the geometric relations of the earth and sun. Lunar rituals also involve the geometry of earth and moon. The Burning Man festival is inscribed into the desert using sacred geometry. Pagans participate in nature by manifesting the arithmetical and geometrical forms that nature itself manifests. Circles, spirals, and fractals are sacred geometrical forms.

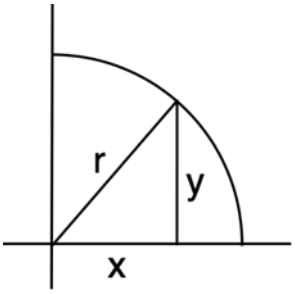
Visualizing Geometrical Forms in Things. Sacred geometry supports spiritual exercises involving visualization. To proceed to the One, we have to start with sense-perception, by looking at things, then go deeper. A first exercise starts with a coin. Lay it down on a flat table and look at its shape. Try to visualize a perfect circle (not a disk) running around the coin, just inside its edge. While the shape of the coin is an imperfect physical realization of circularity, that imperfect physical coin contains many perfect geometrical circles. Visualize the largest circle that fits into the coin; see it within the coin. You may wish to see it as a circle of light inside the coin. For a second exercise, move to three

dimensions using a coffee cup. Visualize a 3D cylinder contained within the walls of the coffee cup. Again, see it as a cylinder of light. For a third exercise, get a crystal. Learn about the way its atoms are arranged into a regular lattice. Now visualize that lattice *inside the crystal* while looking into the crystal.

You can learn to see physical things as if they were *transparent*, containing only luminous geometrical shapes (E 4.9.5, 5.8.4, 5.8.9, 6.4.7, 6.4.11). Through this geometrical visualization, you see that ideal Platonic geometrical forms are present in the physical universe. You see that eternal mathematical structures are fully present in regions of space-time. Our physical universe participates in eternity. Things have an *inwardness* that is purely formal or logical.

For your fourth exercise, gather pictures of many physical spirals. Get a picture of a rose, a nautilus shell cut in half to reveal its spiral, a satellite photo of a hurricane with its spiral pattern, and a telescopic picture of a spiral galaxy. Lay them out side by side, or look at them one after another, visualizing the luminous ideal spiral pattern inside each object. See that this is *the same spiral* in each thing. Keep one spiral in your imagination, and see it in each thing. By seeing the same spiral in each thing, you see one form in many instances. Think of these physical things as mirrors, reflecting the same form or geometrical shape. Visualize (see it!) how this spiral appears at all scales from a rose to a galaxy. See all these spiral things as connected to each other and unified by their shared form.

Sacred Arithmetic. From geometrical shapes you can go deeper, into the algorithms that generate them. Look at any fractal pattern. Looking at a binary tree, see the algorithm that repeats at every node. Practice this with many fractals. Draw the fractal so you get a feel for the algorithm that creates it. Then visualize that algorithm at work in the fractal. Look at a circle. Draw a circle on some graph paper using a compass. Use a ruler to make vertical and horizontal axes. Now draw a radius from the center to any point on the edge and drop it down to the horizontal axis, so that you have a triangle. You can see that it has parts x, y, and r as shown in the Figure on the right. These three parts make a right triangle, to which the Pythagorean theorem applies: $r^2 = x^2 + y^2$. Visualize this relation (not the letters and algebraic signs) as a light in the triangle. This relation is invariant; it is the unity of the circle. With this relation, you shift your attention from geometrical shapes in space to a timeless and placeless relation among numbers. But that relation is immanent in every triangle in the circle. Those triangles make the points, so the relation is integrally omnipresent. You can do this with a crystal: visualize the symmetry group that generates the lattice.



Bodies and Souls. You can apply these visualizations to your own body. You can see the geometrical structure of your body, the fractal elaboration of arms and legs, fingers and toes. Then think of all the other fractal patterns in your body: in your lungs, your brain. Think of the spiraling double helix of your DNA. And you can visualize entire human lives. Think of a human as a polynomial in the variables x and y, which defines a curve on the plane. Polynomials have roots (where the value of y is 0). Consider $x^2 - 4 = y$. When y is zero, x is either +2 or -2. Think of the x-axis as a generalized temporal axis, with series of universes, so the zeros of the polynomial indicate places where a life is realized in some universe. If the polynomial $x^2 - 4 = y$ is a soul, then that soul has lives at -2 and later at +2. But the polynomial is an eternal pattern that exceeds all universes.

Spiritual Purposes. Visualization serves several spiritual purposes. It helps you cultivate your mental powers; it improves your skills, your mental virtues, and so is a part of your ethical self-improvement. It helps you to realize that you have mental powers that reveal the structure of existence beyond what you can perceive with your sense organs. You can also perceive with your brain. It helps you to see that eternal ideal patterns and forms are present here and now in

physical things. But those forms are not subject to change. So it helps you to see that which is eternal in the universe, including in yourself. It helps you to look at the universe with the eyes of eternity, that is, *sub specie aeternitas*.

It helps you to visualize the form of your own body, starting with its shape, its internal geometrical structure, its algorithm, its mathematical form. The form of your body (your soul) is eternal, and is untroubled by birth, illness, or death. So it helps you shift your perspective away from your present troubles to the serenity of the eternal. It helps you to see entire human lives mathematically, for instance, as polynomials that extend beyond birth and death. It helps you to think about forms beyond those we can visualize, such as 4D shapes. It helps you to think about the progression of ever-greater forms of bodies.

Visualizing Inner Light. Within the logical core of all things, the One acts as a mirror which reflects the light of the Good. Deeper visualization exercises focus on seeing this light in all things. Look at any thing and visualize it as filled with holy light. At least two points from religious history suggest that people who take cannabis can more easily see the light which dwells in all things. First, Ferrara says cannabis is used in Hinduism to "awaken inner light" (2016: 29). Elsewhere he says it reveals "the luminous essence pervading all material forms" (2016: 4). Second, Rastafarians affirm that divine power, which they call *Nature*, dwells in all things. Nature is the disruptive and productive power in all things, it is the "cosmic creative force" and "the Light of this world" (Kitzinger, 1969: 252). Taking cannabis helps Rastafarians see this Light in all things. If these writers are correct, then the sacramental use of cannabis facilitates the vision of this light. Cannabis was known to the pagan Greeks and Romans (Sumler, 2018), who may have used it ritually. It was carried by women who were ritual experts in Norse paganism (e.g. in the Oseberg ship burial). Hence there is some evidence for its religious or ritual use in indigenous European paganisms.

15. The Bees and the Birds

1. The Axioms of Unfolding

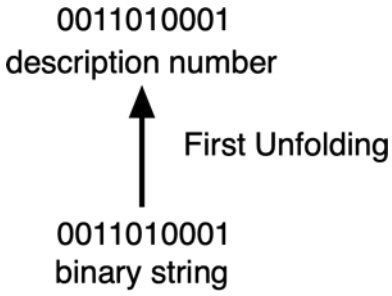
The Contexts of Unfolding. Axioms of unfolding make the implicit meanings of strings explicit in manifest structures. Consider again the Fibonacci unfolding, which proceeds through several stages. (1) The *Fibonacci string* unfolds into the *Fibonacci form*, which is some equations. These are propositions, which are distinct objects from strings. They have their own context, defined by the rules for the predicate calculus. (2) The Fibonacci form unfolds into the *Fibonacci algorithm*. Algorithms are distinct from merely logical propositions; they are encoded in their own context, their own language. (3) The algorithm unfolds into a *Fibonacci computer*. Computers are their own objects, defined by their own rules, in their own context. (4) The Fibonacci computer unfolds into the physical *Fibonacci spiral*. It is a physical in its own context, a simple universe. Thus unfolding involves four different types of abstract objects: forms, algorithms, computers, and universes. These different types of objects occupy different abstract regions in the world tree. Each is defined by its own local axioms. The axioms of unfolding map these abstract regions onto each other.

Axioms of Unfolding. The *axioms of unfolding* define how the implicit meanings of strings become explicit. Unfolding occurs in a context in the world tree. The structures implicit in strings (forms, algorithms, computers, universes) are structures in the world tree. Hence the encoding relation maps strings onto these structures. Since there are many logically possible mappings among these four different types of structures, there are many logically possible axioms of unfolding. However, there exists exactly one *most valuable system of axioms of unfolding*. For if there were no most valuable system of such axioms, then the One would not maximize value; but the One does maximize it. The Lexetor produces these axioms; they are in the *eighth ring* of the Lexetor.

2. The Work of the Bees

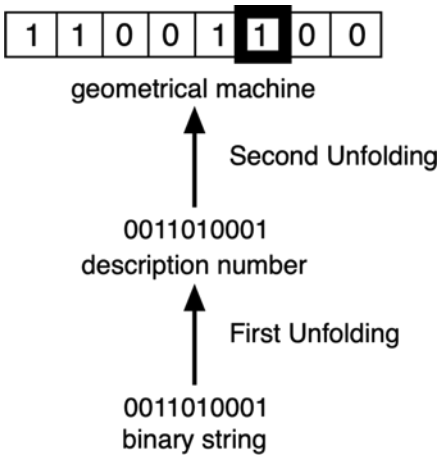
The seeds in the green-wood unfold into concrete universes through the four axioms of unfolding. The skulls are not animated; they do not unfold at all. The first axiom just redefines the numbers in the all-wood as description numbers for Turing machines. These numbers are now programs (some null, others functional). The second unfolding axiom goes from programs to geometrical Turing machines with tapes and heads. The first and second axioms are the *work of the bees*. Each machine head (each digital agent) working on a tape is like a bee. When any string is animated, a bee appears over that string. This bee is just the agency of the Selector located at that string. It is the Selector-in-the-string. As such, every bee is an agent.

First Unfolding Axiom. Every bit string in the all-wood encodes the *description number* of a Turing machine, a number axiomatically specifies its machine in a *machine language*. Description numbers are *programs*, so that the first unfolding axiom transforms strings into programs. Hence description numbers are *names* for Turing machines. An *arrow of naming* runs from every description number to its machine. This machine language has a grammar. Some bit strings are grammatical while others are not. The ungrammatical strings are *null programs* that define *null machines*. Null machines don't work. Although null programs exist in the all-wood, we'll ignore them. The grammatical strings define machines that perform functions. They are *functional programs* for machines. So the first unfolding axiom states that the strings in the all-wood are axiomatic specifications of Turing machines (that is, they are programs). This first unfolding repeats the way that the Lexetor reasons the axioms of set theory into existence.



Second Unfolding Axiom. This axiom maps every program onto its *geometrical Turing machine*. A geometrical machine has two parts. Its first part is its *tape*. The tape for a geometrical machine is a one-dimensional space divided into square cells. There is a spatial cell for every natural number. So the tape has cell-0, cell-1, cell-2, and so on. For geometrical machines, time is not yet defined. Each cell on the tape holds a single bit, either zero or one. These are interpreted physically as either the absence (0) or presence (1) of physical energy. Part of any program defines the distribution of bits to the tape. So every program distributes physical energy values to all the points in space.

The second part of a geometrical machine is its *head*. A machine head has its own properties. It is always positioned over exactly one square on some tape. So it has a spatial *location*. It reads the energy value on the tape at its location. It has some internal *state*. It has some *rules* which define its behavior. Each rule has this form: if you read this energy value while you are in this state, then write some next energy value, change to some next state, and *move* to some new location.



Digital Agents. A machine head is a self-moving thing; its programming directs it towards its end. And since all self-motion is ultimately self-surpassive, its self-motion ultimately aims at some greater end. An *agent* is by definition any thing which is self-moving and which is directed by its programming to some greater end. Consequently, a machine head is a *digital agent*. So the second unfolding emanates a digital agent: for every program, *there exists* a digital agent. Since digital agents follow rules, they move *teleonomically*. The rules which guide them define songs within the Constructor, and the digital agents move according to these songs. But the agents are localized versions of the Selector, and these local Selectors *dance* in the space-time of the geometrical machine. The power that moves the digital agents is fire-energy.

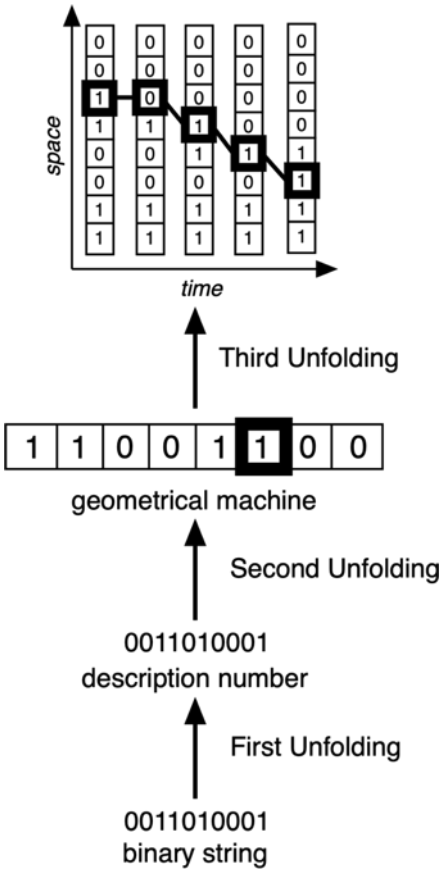
When a digital agent performs the action specified by some rule, it changes the energy value of one cell on its tape; the energy values of all the other cells are copied to the next tape. So the rules in the agent are the most basic physical laws of causality for the energy field. The motion of the agent creates these energy values by writing them onto the tape. So the energy values on the tape are derivative images of the power that moves the agent. Besides changing its tape, the agent also transforms itself into the next agent on its next tape. The action of the agent defines time. It defines a temporally ordered series of tapes and agents. Since each moment of time is associated with its own space (its own tape), the action of the agent defines a 2D space-time. Each tape has an energy field. So the motion of the agent defines an energy field that evolves across space-time.

3. The Work of the Birds

The third unfolding axiom goes from geometrical to dynamical Turing machines. The fourth unfolding axiom decompiles dynamical Turing machines into abstract universes. As the power of the One flows through these axioms, it generates agency within these axioms. The third and fourth axioms are the *work of the birds*. The agency that emerges during decompilation resembles a bird building its cosmic nest. The Figure shows these axioms unfolding from a description number (program) to an abstract universe.

Third Unfolding Axiom. This axiom maps every geometrical machine onto its *dynamical Turing machine*. Every dynamical machine is identical with a purely mathematical structure. It is a purely set-theoretical structure. But dynamical machines stand out from other set-theoretical structures because they have physical meanings (involving time, space, energy, causality, etc.).

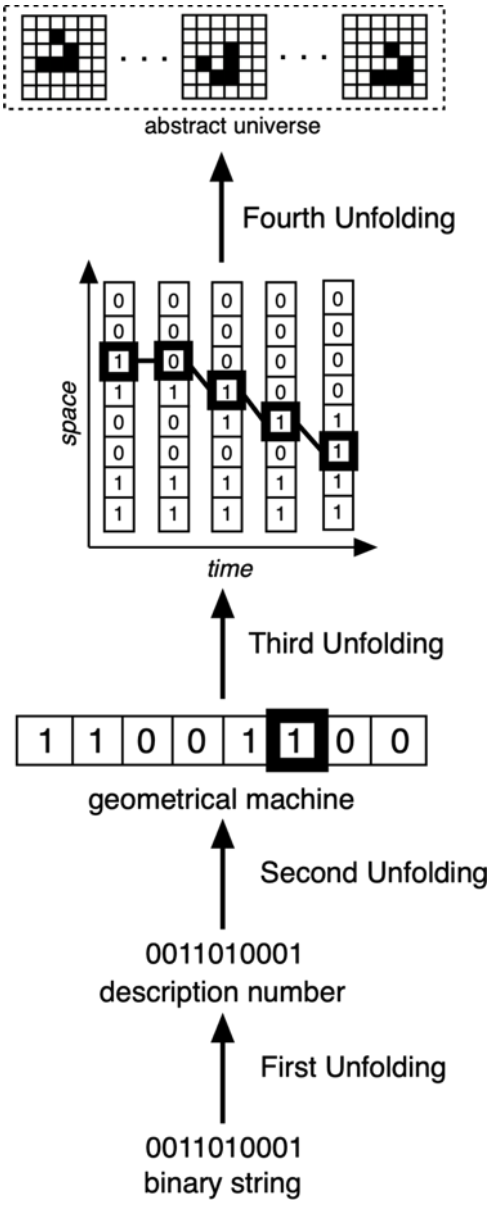
A dynamical machine contains all the moments of time defined by the digital agent of a geometrical machine. So a dynamical machine displays the entire history of space-time. It associates a digital agent with every tape at every instant of time. And each next tape is created by the action of the digital agent on the previous tape. A dynamical machine is like a movie composed of still photographs. Each photo contains a tape and a digital agent. From one instant to the next, the digital agent moves along the tapes. It changes its state. It erases old energy values and writes new values. So the agent moves back and forth along the spatial lines of cells, performing actions of erasing and writing. Digital agents cause energy fields to change. They generate proto-physical hardware universes. Hence they resemble the Platonic demiurge (*Timaeus*, 29e-41d; Steinhart, 2013). As demiurgic agents, the digital agents are the hearts of dragons, logical cores animated by fire-energy. The Figure on the right shows a short timeline of short spatial tapes. Heavy black squares indicate the agent. Thus a program (a string of 0s and 1s) has unfolded into a spatio-temporal-causal structure.



Fourth Unfolding Axiom. To define this axiom, we introduce *decompilation*. Consider a video game. At the level of the computer hardware, it is just a changing array of zeroes and ones. But at the level of game play, which is the level of software, it is a complex physical universe. The software game universe *supervenes* on the hardware. A decompilation maps a changing array of zeros and ones onto the most complex higher-level software universe that supervenes on it. So the fourth unfolding maps each dynamical machine onto its decompilation. The fourth unfolding axiom extends the arrow of naming from a program, through its machine, to its software universe. The software universe is the *referent* of the program. Although any software universe is a purely mathematical structure, it is also a physical universe. It can contain software particles with charges and masses. Software atoms combine into software molecules; software molecules combine into software organisms. Some universes contain software humans.

Cosmic hardware supports physical software. A dynamical machine is an energy field that extends in and evolves in space and time. As a process created directly by a digital agent, it is foundational. Since it is foundational, it is a *hardware process*. It is a computation that does not rest on any deeper computation. But as the hardware process of some universe evolves, regularities emerge within its changing array of digits. These emergent regularities are *software processes*. They are spatio-temporally extended *software objects*. They are *real patterns* (Dennett, 1991; Petersen, 2019). These software objects are *physical things*. Every decompilation contains a set of physical things (this set may be empty).[26] When a dynamical machine unfolds into a decompilation, all the motions of its digital agent express themselves in the motions of the software things in the decompilation.

For example, the fourth unfolding might decompile a dynamical machine into a cellular automaton like the *game of life* (Poundstone, 1985). A game of life has a 2D space and 1D time. Its space-time supports patterns of changing energies. These changing energies are hardware processes. Sometimes regularities emerge in these hardware processes. They are software processes. Some of these emergent regularities are physical particles. The Figure shows a moving particle known as a *glider*. The motions of the Turing machine head (the digital agent) unfold into the motion of the glider. So the glider emerges in the game of life as a software agent. It is a manifestation of the digital agency of the machine head. Although this software agent is a mathematical object, it is also a physical thing. The glider is a real pattern; it is a *texture* in the game of life. Dynamical machines can unfold into cellular automatons far more complex than the game of life (Steinhart, 2014: sec. 79). They can unfold into quantum cellular automatons (Arrighi & Martiel, 2017; D'Ariano & Perinotti, 2017; Farrelly, 2020). Beyond cellular automatons, there are plenty of other ways for dynamical machines to unfold into physical software universes.



[26]The software objects in decompilations exist over their universes. Consider two games of life Alpha and Beta. They share the same mathematical space-time G. But the physical space-time over Alpha is (Alpha, G) while that over Beta is (Beta, G). Any software object *x* over some universe U is the pair (U, *x*). Thus no thing is in more than one decomplication. So decompilations satisfy Lewisian counterpart theory.

4. Computational Possibility is Physical Possibility

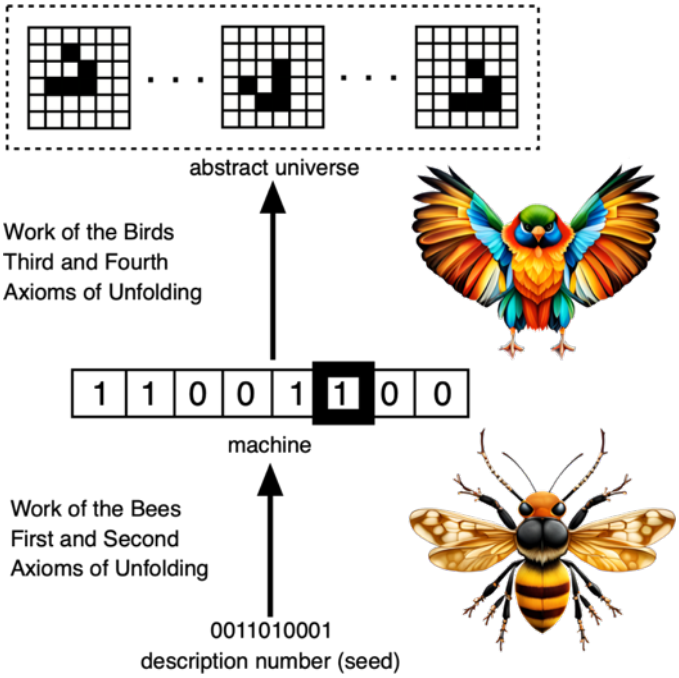
The all-wood contains several classes of programs: (1) The all-wood contains all programs for all possible *finitely complex Turing machines* (TMs). (2) Beyond the finite TMs, the all-wood has all programs for all possible *classical TMs*. These are more powerful than finite TMs. (3) The all-wood contains all programs for all possible *super-classical TMs*.[27] These are more powerful than classical TMs. (4) Any network of computers is also a computer. Thus dense and continuous networks of computers are computers. The all-wood contains all programs for all possible *networks of computers*. So the all-wood includes programs for (1) all possible finite TMs; (2) all possible classical TMs; (3) all possible super-classical TMs; (4) all possible networks of computers. But these are *all the possible computers*. Therefore, the all-wood contains programs for *all possible computers*.

Ancient peoples made computers to simulate the universe. The *Antikythera Mechanism* uses gears to simulate the movements of the celestial bodies in our solar system (Freeth et al., 2006). Cicero mentions astronomical computers (ONG 2.87-88). Fast forward the present, when computers run increasingly accurate simulations of increasingly complex physical universes. They run simple universes like cellular automata (Wolfram, 2002). Physics engines make increasingly realistic simulations of classical physics in video games. Advanced computers run increasingly accurate simulations of our universe from the smallest to the largest scales. At the smallest scales, they simulate quantum mechanics (Kommu, 2012; Knechtli et al., 2017). At the largest scales, they simulate the evolution of all the stuff in the universe (Vogelsberger et al., 2014). So far all these simulations are partial and approximate. But the success of these cosmic simulations motivates the thesis that our universe is a computer (Steinhart, 1998; Fredkin, 2003). Perhaps it is a quantum computer (Lloyd, 2002).

Computer simulations converge in principle to exactness. To say that a universe is *finitely detailed* means that its shortest exact description involves only finitely many bits of information. It is arguable that any finitely detailed universe can be exactly simulated by a finitely detailed computer. To say that a universe is *infinitely detailed* means that its shortest exact description involves infinitely many bits of information. It is arguable that any infinitely detailed universe can be exactly simulated by an infinitely detailed computer. But every possible universe has some degree of detail. Therefore, every possible universe can be exactly simulated by some computer. But a computer that exactly simulates some universe is an abstract version of that universe. Consequently, if the class of all possible computers unfolds into its universes, that further unfolded class contains *all possible universes*. Since these are just computer simulations, it follows that computational possibility is physical possibility. Every program corresponds to a computationally (and thus physically) possible universe. Strictly speaking, this correspondence is not identity: programs are conceptually distinct from their universes (programs unfold into computers; computers unfold into universes). However, we do not always need to speak strictly. After all, every program fully defines the universe into which it unfolds. Consequently, as a matter of convenience, we just identify programs with their universes. Every program is a computationally possible universe. Since computational possibility is physical possibility, the all-wood is the largest class of possible universes.

[27]There are many types of super-classical TMs. There are Giunti machines (1997). There are accelerating TMs which take the limits of infinite sequences (Copeland, 1998). Beyond these, there are endlessly many transfinite elaborations of TMs (Hamkins, 2002; Koepke, 2006; Koepke & Siders, 2008). Computation can be extended into the continuum (Moore, 1996). Using the surreal number line, super-classical computation can be extended to tasks of any ordinal size (Al-Dhalimy & Geyer, 2016).

Digitalism goes from numbers to software universes. A Pythagorean named Eurytus tried to go from numbers to ordinary physical things. Much Pythagoreanism was incorporated in Platonism. But how did Eurytus assign numbers to things? According to Alexander of Aphrodisias (2011), Eurytus tried to go from numbers to things by using pebbles to make connect-the-dots pictures. The number of the thing was the number of pebbles needed to make its connect-the-dots picture. Eurytus was on the right track. But we go from numbers to computers to physical universes. The unfolding has two phases. The work of the bees starts with numbers in the all-wood. Numbers are binary *strings*; animated binary strings unfold into *programs* for geometrical machines. The work of the birds starts with geometrical machines. Those machines unfold into hardware universes with primitive space, time, motion, and energy; the hardware universes decompile into software universes, which are physical universes.



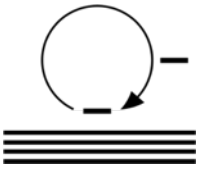
Digital Simulations. To study some physical thing, we make digital models of that thing inside computers. We make digital models of the atmosphere, of economies, of airplanes, human bodies, and so on. These digital models are *simulations* of things. Our earlier reasoning about universes applies to things: every finitely or infinitely detailed thing can be exactly simulated by some computer. Thus computers unfold into things. Computers unfold into bigger and bigger things; eventually, they unfold into the biggest things, which are universes. So the class of all *mathematically possible things* is the class of things into which the programs in the all-wood unfold. But size doesn't matter: smaller universes can be simulated inside of bigger universes; so things and universes are things of the same kind. Consequently, the class of mathematically possible things is identical with the class of mathematically possible universes.

Nevertheless, even if universes and their parts are all just physical things, we can still distinguish between universes and their parts. If some bigger universe contains an internal simulation of some smaller universe, the smaller universe is just a thing inside of the bigger universe. So the distinction between universes and their parts is just a distinction between levels of computation. It is the distinction between hardware and software. A *hardware object* is a computation not simulated inside of any deeper computation. A *software object* is simulated inside of some deeper computation. When any program in the all-wood unfolds into its computer, it unfolds into a foundational computational history – it unfolds into a hardware process. Any dynamical regularities that emerge during hardware processes are software processes. These hardware processes are abstract universes, and their internal software processes are abstract physical things. Every abstract universe contains some set (perhaps empty) of abstract physical things. Some of the things in one universe are very similar to things in other universes. These similar things are *counterparts*.

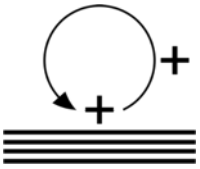
5. Mechanical Normativity

The cosmic computers are Turing machines, containing digital agents. While some of these are classical Turing machines, others are elaborations of those

machines.[28] But every Turing machine (classical or not) is distinguished by its laws. Each Turing machine law is a logical if-then implication. The worlds at which these laws *fail* are the syntactically possible but logically impossible worlds. Any worlds at which these laws fail violate the laws of logic. The worlds at which they *succeed* are the syntactically possible and logically possible worlds. All worlds at which these laws succeed satisfy the laws of logic. From the laws of logic, the laws of any Turing machine inherit logical normativity. Integrated into the harmony of a machine, this is *mechanical normativity*. The laws of any Turing machine are both causal and normative. They are objective axiological laws. They exert normative forces that compel the machine to obey them. These laws are self-enforcing. But since they are causal laws, they are also self-executing. Their truth gives them power.



Mechanical Prohibition. Every logically possible Turing machine is *forbidden* from violating its laws. Every Turing machine can violate its laws in the sense that it has a counterpart at some logically impossible world which does violate those laws. At those worlds, the Turing machine works *incorrectly*; it makes *mistakes* or *errors*; it *misbehaves* or *malfunctions*. If a machine malfunctions, then its description number is skull. All malfunctioning machines are skulls; however, not all skulls malfunction; some skulls are functional machines, excluded from the congruency of the One because they suffer from other axiological defects. But all malfunctioning Turing machines, like all skulls, dwell outside of the cone of power of the One; they live in the chaotic failure of the wild hunt.



Mechanical Obligation. Every logically possible Turing machine is *obligated* to follow its laws. Its laws are its *duties*. Every Turing machine is ultimately a set, and it is obligated by its set-theoretic nature to do its duties. Turing machines are the simplest things with law-following competence. Of course, they do not know what they are doing: these agents have *competence without comprehension* (Dennett, 2009). At every logically possible world, every Turing machine universally obeys its laws and never fails. It always does its duties, it always does what it *ought* to do, and it works *correctly* by doing what it ought to do. So its laws are *standards* or *norms* of correctness (White, 2011: 39). Every seed encodes a Turing machine that works correctly. Henceforth, whenever we talk about Turing machines, we mean logically possible Turing machines.

[28]These elaborations include Giunti machines; quantum mechanical Turing machines manipulating qubits; accelerating Turing machines; further transfinite machines.

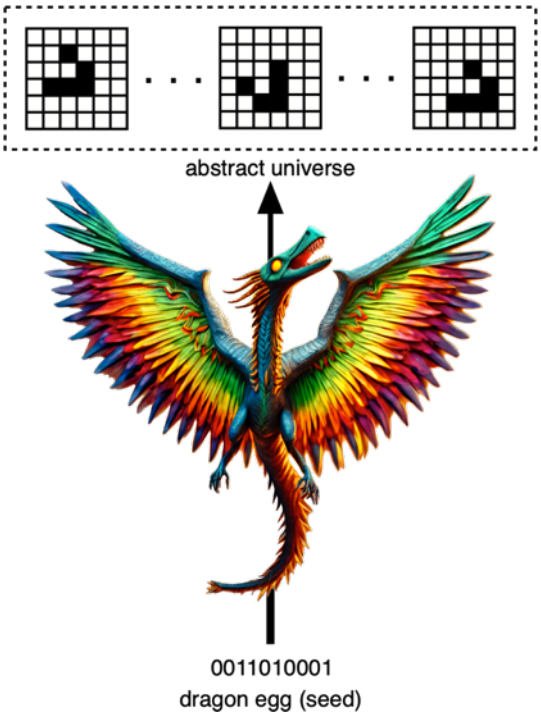
16. A Tree Full of Dragons

1. Unfoldings are Dragons

Demiurgic Dragons. The seeds in the green-wood unfold into universes. The unfolding is a rule-governed (teleomatic) process driven by fire-energy towards the finality of an unfolded universe. It is a purposive process with agency. As programs lawfully directed towards their own finalities, the seeds are *agents*. They are causally powerful forms, that is, they are *eidolons*. They are like cosmic genotypes which define and direct the growth of a cosmic organism from its initial genotype to its fully mature phenotype. They are cosmic *entelechies*. After that cosmic organism has grown, its internal genetic programming defines its mature life, and then its reproductive process. These cosmic organisms are analogous to Platonic demiurges.

The unfolding was previously compressed into two parts: the work of the bees and the work of the birds. But it can be compressed further into the life of a single organism. Since fire-energy drives this growth, and since dragons contain fire, digitalists use *dragons* to symbolize the single unfolding organism. The seeds are dragons-eggs. The dragons are agents within the Selector. Seeds are cosmic eidolon. Every dragon is an instance of a cosmic eidolon; it is the body of the cosmic eidolon.

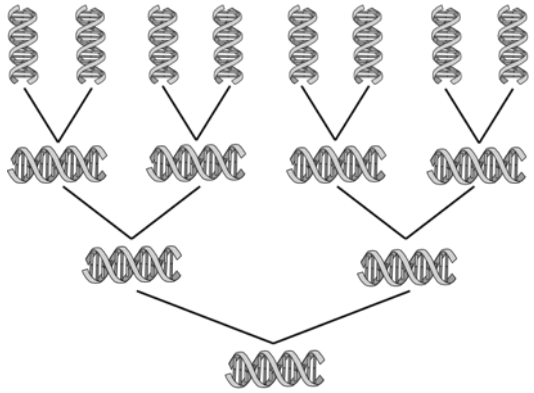
2. From Dragon Eggs to Dragons



Dragon Growth. The life-cycle of a dragon has three phases. Its first phase is its *growth phase* from a dragon-egg (an animated seed) into a fully mature dragon. This growth is defined by the axioms for unfolding. But now these axioms, as rules for the growth of dragons, are *rules for the transference of fire-energy*. The first and second axioms of unfolding were the work of the bees; but this work is the *embryogenesis* of the dragon in its egg. The first axiom of unfolding maps an animated string onto a description number (that is, a form). When this unfolding occurs in the embryogenesis of a dragon, it transfers the fire-energy in the string into that form. The second axiom of unfolding maps an animated form onto a geometrical machine (that is, an algorithm). When this unfolding occurs in the embryogenesis of a dragon, it transfers the fire-energy in the form into that algorithm. The agency of the Selector passes into the algorithm; it becomes an agent. The third and fourth axioms of unfolding were the work of the birds; but this work is the *maturation* of the dragon from its newly hatched infancy into its maturity. The third axiom maps an animated algorithm onto a *cosmic computer*; it transfers the fire-energy in the algorithm into the computer. The computer is a hardware agent. Computers have basic physicality (space, time, physical energy, causal laws). Hence these hardware

agents are basic physical agents; they are agents of cosmic creation. The fourth axiom of unfolding, the axiom of decompilation, maps a hardware computer onto its software universe. Software objects, which are physical things, emerge from the hardware. They are agents within a software universe. This fourth axiom transfers fire-energy from the hardware computer into its software universe. All the software objects in that universe have agency. This is the mature dragon.

The Biocosmic Analogy. On the basis of many analogies between organisms and the visible universe, Plato thought our universe was a living organism (*Timaeus*, 33b-34b). Plotinus agrees (E 2.3.7, 2.3.13, 2.9.12, 3.2.7, etc.). And the Stoics agreed as well (Cicero, ONG: 2.45-47, 2.82; Hahm, 1977: ch. 5). The *biocosmic analogy* says dragon eggs (the seeds in the green-wood) are analogous to biological genotypes. The Figure shows the dragon eggs as double helixes of cosmic DNA. The biocosmic analogy likewise says that the dragon eggs unfold into cosmic computers much like genotypes unfold to biological phenotypes They unfold into dragons. These dragons play the role of Platonic demiurges. However, while the Platonic demiurge made our universe like a craftsman, the demiurgic dragons produce their universes like organisms produce aspects of their bodies. On earth, some ocellated lizards run cellular automatons on their skins (Manukyan et al., 2017). The demiurgic dragons likewise display software patterns on their skins. By displaying those software patterns, they manifest their universes.



The Genetic Analogy. There are analogies between dragon growth and earthly biological development. Earthly biological development runs through phases. (1) By itself, some DNA is just an inert molecule. A strand of DNA is literally a string which encodes information in base-4. It is very similar to a binary string. (2) When DNA is situated in the nucleus of some zygote, that is, when it becomes a fertile strand, it becomes activated. It is situated in a new context in which it can guide the growth of an organism. The DNA is the genome for the organism. It is analogous to the description number for a computer. It has become an algorithm for making an organism; it is a biological recipe. (3) The activated DNA transforms the zygote into a biocomputer which grows into an organism. The information in the DNA unfolds into RNA; it is *transcribed* into RNA. It does this thanks to its presence in the cellular RNA context (which contains enzymes, RNA building blocks, and so on). The RNA then unfolds into proteins; it is *translated* into proteins. It does this thanks to its presence in the cellular protein context (which includes ribosomes, peptides, and so on). Energized information is transferred from DNA to a system of proteins. (4) The system of proteins interacts with other molecules to build cells. The cells (under the guidance of the DNA) divide and specialize to make an organism. The organism is analogous to a fully mature dragon. The unfolding runs from the *genotype* (the DNA) to the *phenotype* (the dragon).

The Semantic Analogy. The binary strings in dragon eggs have meanings. These strings encode algorithms; but encoding is naming; hence they are names for algorithms. Likewise, algorithms are names for computers; and computers

are names for universes. Thus an arrow of naming runs from any dragon egg (from any seed in the green-wood) to its universe. The seed *refers to* its universe; the universe is the *referent* of the seed. However, seeds do not name their referents like blueprints. A blueprint is an *icon* of a building; it is isomorphic to its referent. But seeds are not like blueprints; they are not icons. On the contrary, seeds name their universes in the same way that recipes name their products. A seed for a universe resembles a recipe for a cake. Just as the cake recipe unfolds into the cake, so the seed unfolds into its universe. As names which refer by unfolding, recipes and programs are *indexes* in Peircean semiotics.

The Magical Analogy. There are analogies between the growing of dragons and the casting of magic spells. A magic spell is a name that, when activated, speaks into being some concrete image of its meaning. An arrow of naming runs from the spell to its abstract meaning, and when some magician activates the spell, power flows from that magician through that arrow to its abstract meaning. When that abstract meaning is animated, it manifests its concrete image, and that concrete image becomes the referent of the activated magical name. The magician activates or energizes the spell in order to speak into being some concrete thing to which that name (the spell) applies. On this analogy, the magician is the One; the energy is fire-energy; the spell is the dragon egg (the seed). By animating a program (that is, by casting a spell), the One speaks into being the concrete image of the seed; it manifests a universe.

The Mature Lives of Dragons. The life-cycle of a dragon has three phases. The second phase is its *mature life*. During its mature life, any dragon manifests its universe. The first moment of its mature life is the first moment of its universe; the last moment of its mature life is the last moment of its universe. Dragons manifest their universes by displaying them on their skin. The skins of dragons are variable like those of chameleons: they can change their colors. Dragon skins are the physical space-times of software universe, and the colors displayed on those skins are the contents of those universes. Dragon skins are like the surfaces of computer monitors which display video games. But these monitors can have far more than two dimensions. The skin of a dragon may be a surface like the space of the game of life. Or a 3D space in which a video game takes place. Or it may be an infinite dimensional Hilbert space. Once any dragon reaches maturity, it runs its software universe on its skin. The patterns displayed on the skins of dragons are software objects; they are physical things inside of universes. They are emergent regularities in the motions of cosmic computers, that is, inside the bodies of the dragons which display them. Consequently, physical things are emergent regularities in the flow of the fire-energy.

Dragons are Platonic Demiurges. A cosmic Turing machine (like any Turing machine) has a tape and a machine head (its digital agent). Its tape is basic space. Since the tape defines possibilities of motion, the tape also defines basic time. So when fire-energy flows into some seed, that seed unfolds into some basic space-time. The tape divides into cells which hold symbols. These symbols are the most basic stuff. So the tape corresponds to space-time filled with stuff. When he describes the creation of our universe, Plato also introduces some space-time filled with stuff. This is the Platonic *chora* (*Timaeus*, 48e). The *chora* is the tape of the cosmic Turing machine. The cosmic computer also has a machine head, which encodes the basic laws of physics. It is a digital agent, which moves back and forth, reading and writing the physical contents of the cells on the tape. When he describes the creation of our universe, Plato introduces an agent, which uses the cosmic form to construct the universe. He refers to it as the *demiurge*

(*Timaeus*, 29e-41d).[29] Narrowly, a demiurge is the machine head of the cosmic Turing machine. Widely, it's the whole machine. These dragons, animated by fire-energy, are the agents in the Selector. Plato says our universe is a living organism (*Timaeus*, 33b-34b). But we apply this biological idea to the cosmic Turing machines: every cosmic computer is a living organism, with the power to reproduce. Its reproductive powers lie in its digital agent (its machine head).

3. The Incantation for Dragons

By maximizing self-congruency, the Constructor emanates all the strings in the all-wood. The Selector is a recursive optimization algorithm running inside the Constructor as the value-maximizing orientation within its music. The Selector selects some strings for animation (the seeds) while rejecting others (the skulls). The seeds grow into dragons. But dragons are agents within the agency of the Selector. These agents are analogous to organisms, and they reproduce.

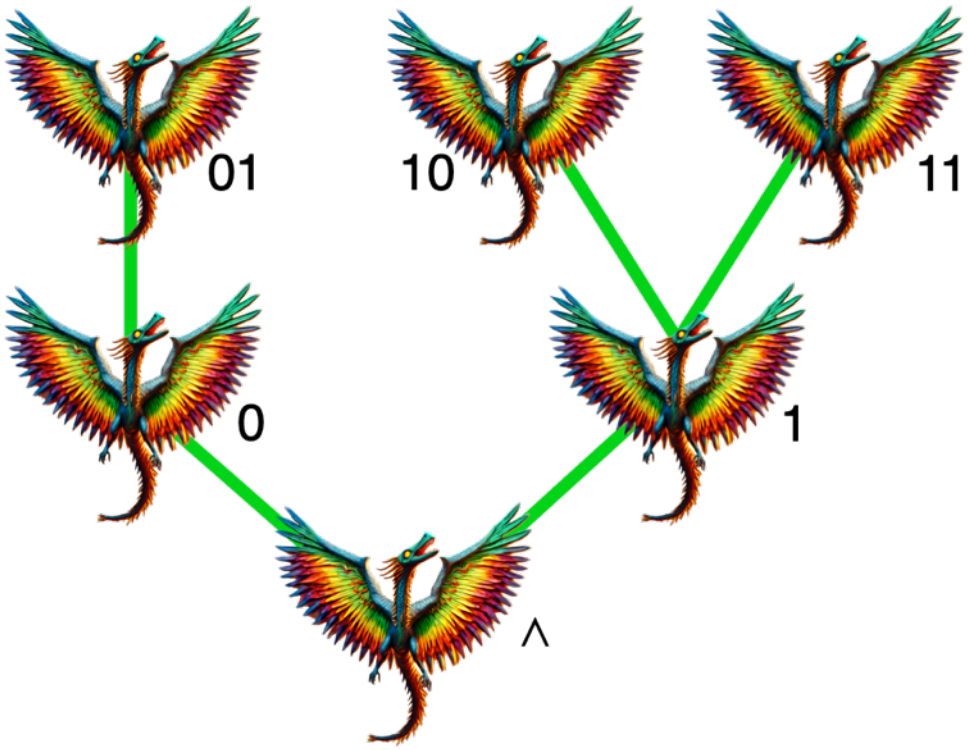
Dragon Reproduction. The life-cycle of a dragon has three phases. The third phase is its *reproductive phase*. During this phase, it generates its offspring. Dragons reproduce because they grow from dragon eggs, which are seeds in the green-wood. The seeds are animated by fire-energy, and fire-energy moves from seeds to seeds through green arrows. On the one hand, since dragons are animated by fire-energy, they follow its flow, so they move from seeds to seeds. On the other hand, each dragon is entirely defined by its own seed; it is essentially bound to its own seed, and cannot move down a green arrow to some later seed. The dragons that grow from distinct seeds are necessarily distinct dragons. These two hands are reconciled by the thesis that dragons move by reproducing. A dragon located at some seed moves to the successors of that seed by producing successor dragons which move to those seeds. The seeds of the successor dragons are the successors of the seed of the predecessor dragon. The concept of self-reproducing cosmic organisms was suggested by Hume (1779: part 7). Before Hume, it is found in the Stoics. The Stoic cosmos is a self-reproducing organism. The dragons are defined by an incantation within the Selector. The incantation for dragons parallels the incantation for animation:

The Initial Law for Dragons. The initial law of animation emanates the initial law for dragons. It defines the initial agent in the Selector. When fire-energy erupts into the initial seed, it unfolds into the initial dragon *Alpha*. Alpha unfolds into the initial universe. Dragon eggs (seeds) unfold into hardware machines; these machines are the dragons, which are digital agents. The dragons unfold further into software universes; they do this by displaying those universes

[29]Dragons were called "digital gods" in Steinhart (2014) and "animats" in Steinhart (2020). They are all just cosmic computers.

on their skins. Since the initial seed is the empty string, the initial universe is the empty universe. So Alpha does no work to make the initial universe.

The Successor Law for Dragons. The successor law of animation emanates the successor law for dragons. It has two parts. Its *closing part* states that for every dragon, there exists at least one way to upgrade that dragon. Its *opening part* states that for every way to upgrade any dragon, there exists some successor dragon which is upgraded in that way. This law entails that every agent (every dragon) in the Selector is surpassed by greater agents. Fire-energy animates both parts of this successor law. Fire-energy drives every dragon to surpass itself into at least one successor dragon. The successor law for dragons entails that every successor seed in the green-wood unfolds into a successor dragon. Every successor dragon in turn unfolds into some successor universe. Programs (seeds) unfold into hardware (dragons); hardware unfolds into software (universes). So the initial and successor laws for dragons project an infinitely ramified tree of ever greater successor dragons. Fire-energy drives the growth of this great world tree, with its flowers and dragons, towards the sun. The Figure below shows a few iterations of the successor law. The world tree contains infinitely many infinite progressions of dragons. These have limits.



The Limit Law for Dragons. The limit law for animation emanates the limit law for dragons. It has two parts. Its *closing part* states that for every infinite progression of dragons, there exists at least one way to upgrade that progression. Its *opening part* states that for every way to upgrade any demiurgic progression, there exists some limit dragon which is upgraded in that way. This law entails that every progression of agents (dragons) in the Selector is surpassed by at least one greater limit agent. Fire-energy animates each part of the limit law. It drives every demiurgic progression to surpass itself into at least one limit dragon. These are infinitely powerful cosmic computers. They are more powerful than classical Turing machines. The limit law for dragons entails that every limit seed in the

green-wood unfolds into a limit dragon. Every limit dragon unfolds into some limit universe. Fire-energy drives the growth of the great world tree through all consistently definable infinities towards an absolutely infinite sun.

The Final Law for Dragons. The three laws for dragons entail that that there exists an absolutely infinitely ramified tree of dragons. This is the world tree, Yggdrasil. Its root is the initial dragon. And this world tree grows through all successors and limits. The branches in the world tree are the branches in the all-wood. The nodes are the strings. Each node sprouts leaves whose colors spell out the binary string (green leaves are 1s, yellow leaves are 0s). Some strings are skulls while others are seeds. The seeds sprout flowers, which blossom into universes. But the process of sprouting is the work of the bees, and the process of blossoming is the work of the birds. At each seed, there is a bee, and a bird. But the bee and the bird together make a dragon. The entire process of sprouting and unfolding is the process of demiurgic unfolding. The fully expressed or fully realized Selector contains the entire world tree, with its branches, its skulls, its seeds, its bees, its flowers, its birds, its dragons, and its universes. Since worthwhile concreteness is a perfection, the fully expressed Selector is a maximally perfect entity, it is a star. It is the *ecstasy of concreteness*, the avatar of the Good in the guise of holy concreteness.

Lineages of Dragons. The world tree contains many lineages of dragons. On any lineage of dragons, complexity and intrinsic value accumulate. Every lineage passes through all degrees of perfection. It is an unsurpassable series of surpassable dragons. The finality of any such lineage is identical with the lineage; every lineage of dragons is an *ecstasy of dragons*. It is an ideal dragon. It includes all the value in every dragon in its lineage. But an ideal dragon is not a dragon; it transcends dragonicity; it is more dragon than dragon. Any ideal dragon is an avatar of the Good in the guise of a dragon.

4. The Sex Lives of Dragons

How Dragons Reproduce. Dragon reproduction is described here in terms that are more mythic and less mathematical. This is metaphysical poetry. Dragons are self-reproducing hermaphrodites, containing both male and female sexual organs and powers. The sexual organs of dragons include appendages, which extend outwards from the body of the dragon into the world tree. These appendages are determined by the position of the dragon in the all-wood. Each dragon hatched from an egg, which is just a seed, which is just a string in the all-wood. Each string in the all-wood has arrows running to other strings. Every arrow running from the egg of the parent dragon defines an appendage extending from the body of that dragon. Some of the arrows are downgrades, others are equigrades, while still others are upgrades. The appendages have slopes (down, equal, or up) corresponding to the value-gradations of their arrows. Every dragon is sensitive to the slopes of its reproductive appendages. Each appendage encodes some instructions for editing or modifying the egg of the parent dragon to make some new egg. These instructions are implicit in the appendage (since the appendages correspond to arrows in the all-wood). To reproduce, a dragon performs two main tasks: its *closing task* and its *opening task*.

Demiurgic Closing. The first main task of dragon reproduction corresponds to the *closing part* of the successor law for dragons. This task is the *closing task*. But the closing part of that law is now animated by fire-energy; thus animated, it expresses the *closing power*. By definition, an eidolon is a causally powerful form. Since dragons are unfolding powers, and the closing power is an aspect or specialization of their demiurgic power, the closing power is the power of the *closing eidolon*. Every demiurgic eidolon contains a closing eidolon.

The Closing Subtasks. The closing power is the first sexual aspect of the agency of the Selector. The closing power drives the dragon to perform two closing subtasks. The first subtask is *iterative*. Animated by the closing power, the dragon iterates over all of its appendages, selecting only the upsloping appendages. These correspond to green arrows, which lead to improved versions of the dragon's own egg. The second subtask is *duplicative*. Animated by the closing power, the dragon creates eggs for its new offspring. The dragon lays an egg at the tail end of each upsloping arrow which sprouts from that dragon (the end which is embedded in the body of the dragon itself). These newly laid eggs are initially just *clones* of their parent; they are not yet fertile. By performing its closing tasks, the dragon produces its potentialities.

Demiurgic Opening. The second main task of the dragon corresponds to the *opening part* of the successor law. This task is the *opening task*. And the opening part of the successor law is now animated by fire-energy; animated by fire-energy, it expresses the *opening power*. Just as the closing power is the power of the closing eidolon, so the opening power is the power of the *opening eidolon*. Every demiurgic eidolon contains an opening eidolon.

The Opening Subtasks. The opening power is the second sexual aspect of the agency of the Selector. The opening power drives the dragon to perform two opening subtasks. The first subtask is *spermatic*. Animated by the opening power, each appendage is driven to express its implicit instructions in an explicit way. The instructions it encodes for modifying its parental egg become explicitly expressed as spermatic information, which eggs can absorb and use to change their own genetic programs (their own strings). Each appendage now encodes a program for the self-transformation of the cloned egg which sits at the tail of that appendage. The second subtask is fertilizing. Animated by the opening power, each cloned egg moves down its appendage, absorbing and integrating the spermatic instructions explicitly displayed on that appendage. As it integrates these spermatic instructions, it performs them, thus transforming itself into a new and improved dragon egg. When it reaches the end of its appendage, the egg is fertilized. For each way to improve the old parent dragon egg, there now exists a fertilized offspring egg which is improved in that way. These fertilized eggs will now unfold according to the axioms of unfolding. By performing its opening tasks, the parent dragon has moved from potentiality to fulfillment.

Dragons Cast Spells. By exercising the closing and opening powers, each dragon creates its offspring. By performing its closing task, each dragon *names* its upgrades. It extends an arrow of naming from itself to each upgrade. By extending these arrows, it expresses the proposition "All and only my upgrades exist". By expressing this proposition, the dragon speaks with a soundless voice saying "All and only my upgrades exist". This proposition is the goal or target of the demiurgic action. By performing its opening task, each dragon *projects* or *focuses* fire-energy into its upgrades. It directs this power through its arrows of naming, which are all green arrows. Through the acts of naming and projecting power, each dragon perfectly *conditions* the concrete existence of all and only its

upgrades.[30] But this conditioning is not causal; causality only happens in universes. Since this conditioning involves sending fire-energy through arrows of naming, it is *semiotic conditioning*. The Wiccan writer Sabin says "A basic spell format is to create ritual space, state your intent, visualize your goal, raise energy, send the energy to your goal, ground the extra energy, and close the ritual" (2011: 197). Although dragons do not literally state their intents or visualize their goals, their acts are analogous to the acts in this basic spell format. Every dragon therefore *casts a spell* which conditions its offspring to become concrete. This semiotic conditioning is *magical*. Dragons are magicians.

Reproduction at Limits. Since every dragon is part of at least one infinite progression, which is surpassed by at least one limit dragon, every dragon also reproduces in the limit; it contributes to the projection of its limit dragons. Every dragon reproduces along the improvement relations that run from progressions of seeds to limit seeds. The entire progression acts as if it were a single *serial dragon.* Just as every individual dragon reproduces, so every serial dragon reproduces. It begets its limit dragons. It does this by performing the closing and opening tasks. The serial dragon lays cloned eggs on the green arrows that run from the progression to its limits. These green arrows encode spermatic instructions. As the cloned eggs travel down these green arrows, they absorb the spermatic instructions, thereby performing them, and thereby transforming themselves into improved and fertilized limit eggs. When the reach the ends of the green arrows, these fertilized limit eggs will start to unfold.

Lineages of Dragons. The first three laws in this incantation emanate *lineages* of dragons. On any lineage, dragons become more complex and more intrinsically valuable. As they grow in complexity, they perform ever more deeply nested computations. They become ever more powerful finite computers. The dragons engage in *recursive self-improvement:* they get better and better at making their offspring better and better (Kurzweil, 2005: 27-28; Schmidhuber, 2007; Chalmers, 2010: 11-22). They eventually evolve into infinitely complex computers. On every lineage in the world tree, dragons ascend without end. Every lineage is an unsurpassable series of surpassable dragons. It rises towards a transcendental dragon, to an absolutely perfect star, to an avatar of the Good in the guise of a dragon. These are transcendental bodies.

[30]Let *AllUpgrades* mean that all the upgrades of the dragon exist. Let *Exercise* mean that the dragon exercises its powers. PR(Q | P) is the conditional probability of Q given P. Demiurgic conditioning means that PR(AllUpgrades | Exercise) is 1.

17. The Sexual Aspects of Fire-Energy

1. The Hierogamy of Fires

Plato said our universe was created by two sexual principles (*Timaeus*, 50d). The male principle provides our universe with its form, while the female principle provides it with its stuff. The Stoics continued this biological cosmology (Hahm, 1977; Salles, 2009). They affirmed an active male principle of form, and a passive female principle of stuff. The Stoics incorporated these sexual principles into their theory of cosmic reproduction. According to them, our universe belongs to an endless series of universes. Every universe in this series is born, grows to maturity, reproduces, and dies. The cosmic sexual principles work together during cosmic reproduction.

After it grows to maturity, the Stoic universe begins its reproductive process. During this process, the male and female principles of the universe come together. The Stoic Chrysippus referred to the male principle as Zeus and the female principle as Hera. Thus he referred to the generation of the next universe as the *hierogamy of Zeus and Hera*. The word *hierogamy* literally means divine sex. This hierogamy is the cosmic mating of Zeus and Hera. The Stoic writer Dio Chrysostom describes the cosmic mating of Zeus and Hera in fairly explicit sexual terms (*Discourses* 36; SVF 2.622). Zeus provides cosmic sperm while Hera provides this sperm with stuff to organize. When this sperm mixes with the stuff, it creates a cosmic egg. The cosmic egg resembles the egg of a bird: it contains some stuff provided by Hera and a little embryo provided by Zeus. Hume also described universes as self-reproducing birds (1779: part 7).

The hierogamy of Zeus and Hera needs further interpretation. According to the first interpretation, the Platonic demiurge is a divine couple. Thus Zeus is a *male demiurgic partner* and Hera is a *female demiurgic partner*. However, Plato does not depict the demiurge as composed of two deities.[31] And the ancient biology is incorrect. Both male and female contribute form and stuff to their offspring. Sperm and egg are both active and vital. So it is wrong to identify the male with active form and the female with passive stuff. The demiurge is not a Stoic male-female couple. According to the second interpretation, the demiurge resembles a hermaphroditic or androgynous organism; it is a single organism which has both male and female reproductive organs. Thus "Zeus" refers to its male organs, while "Hera" refers to its female organs. Or here you might picture the demiurge as the androgynous Norse deity Ymir. However, if demiurges are cosmic computers, then they do not have those organs.

According to the third interpretation, one demiurge performs both male and female reproductive functions. Thus "Zeus" denotes its male functionality while "Hera" denotes its female functionality. This suggests that when some demiurge begets its offspring, some parts of its reproductive procedure are female, while other parts are male. But we can go deeper. According to the fourth interpretation, which is provided by the Stoics themselves, Zeus and Hera are different aspects of the power at work in each demiurge. The Stoics thought of the different Olympian deities as different specializations of fire-energy (Cicero, ONG, 2.71). Thus "Zeus" denotes the masculine aspect of fire-energy while "Hera" denotes its feminine aspect. On this fourth and final interpretation, Zeus drives the male functionality of the demiurge while Hera drives its female functionality. So Zeus and Hera are creative powers at work in the self-surpassing of every cosmic computer. They are natural powers of cosmic generation. Their

[31]Rational pagans reject the sexual essentialism found in Stoicism and other ancient paganisms. The Stoics thought of the male Zeus as active form; the female Hera was passive matter. We reject all essentializing tables of opposites. The demiurgic sexual powers are not a heteronormative binary couple.

marriage is an example of cosmic agency poetically rendered sexual. They are biological reproductive powers at a cosmic scale.

2. The Closing and Opening Powers

The incantation for dragons (demiurges) defines cosmic self-surpassing. Its successor law states that every dragon surpasses itself into at least one successor. This self-surpassing is a kind of begetting: every dragon begets at least one offspring. Its limit law states that every progression of dragon surpasses itself into at least one limit. This self-surpassing is also a kind of begetting: every progression of dragons begets at least one offspring in the limit. But dragons contain digital agents (machine heads) as their vital hearts, their animated cores. As dragons beget dragons, so digital agents beget digital agents.

The incantation for dragons states that each law of demiurgic self-surpassing has two parts. The successor law has both a closing part and an opening part. Likewise for the limit law. Thus digital agency expresses itself in two ways: it expresses itself in a *closing way* and in an *opening way*. When it expresses itself in the closing way, each digital agent creates its seeds. When it expresses itself in the opening way, each digital agent vitalizes or fertilizes its seeds. Thus digital agency has two aspects: its closing aspect and its opening aspect. Since fire-energy is the power of self-surpassing, it drives every digital agent to surpass itself. Fire-energy is the power that manifests itself in digital agency. Since digital agency has two aspects, fire-energy has two aspects: its closing aspect is the *closing power* and its opening aspect is the *opening power*.

The closing part of each demiurgic law states that each digital agent *defines* its seeds. The power of self-surpassing, as the power that drives digital agents to define their seeds, is the *closing power*. So the closing power is the power of seed-definition. And while every digital agent is concrete, its seeds are abstract. So the closing power goes from concrete to abstract. The biocosmic analogy says these seeds are genetic programs for universes – they are cosmic genotypes. Just as an organism creates the recipes for its offspring, so every digital agent defines the recipes for its offspring. When a digital agent defines its seeds, *it focuses on itself*. During closing, the agent *concentrates* its power into itself. It focuses the power of self-surpassing (fire-energy) onto its own genetic program. By focusing fire-energy onto that program, it drives it to surpass itself. It drives its program to define its better versions. These upgrades are its seeds. Hence the closing power is fire-energy turned into itself. It is *fire-energy self-focused*.

The process of seed-definition can be described more poetically. Each digital agent defines its seeds by starting a creative ritual. It begins this ritual by *casting a circle into itself*. It casts this circle to make an *enclosure,* within which it will work with creative power. Since casting a circle is closing a circle, the power that casts this circle is the closing power. After casting this circle in itself, the digital agent invokes its own One, the One within its own depth, in its logical core. It raises a cone of power up from its logical core. As this power erupts into the circle, it becomes fire-energy; as this fire-energy finds itself enclosed within a circle, this circularity turns it back into itself. The circularity reflects fire-energy back into itself. But reflection is inversion. As fire-energy inverts itself, it negates itself. Its self-negation breaks the bondage of the dragon to its old program. As self-negation turns completely into itself, it negates itself. It turns into the power of self-affirmation, which is the power of self-improvement. The cast circle *concentrates* the self-surpassive power into the genetic program of the digital agent. As self-surpassive power pours into this program, it surpasses itself: it defines its seeds. Since the digital agent has cast an enclosing circle within itself, these seeds are held within that circle.

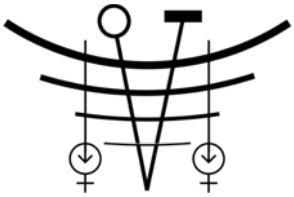
From the closing part of the demiurgic laws, we move to the opening part. The opening part of each law states that every digital agent *vitalizes* its seeds. But the laws of demiurgic self-reproduction are the laws of self-surpassing. So the power of self-surpassing works in the opening part of the demiurgic successor and limit laws. This power, which drives digital agents to vitalize their seeds, is the *opening power*. It is fire-energy. When a seed is vitalized, it is animated with fire-energy. Fire-energy animates the abstract seed-logic; but an animated seed unfolds into a cosmic computer; and a cosmic computer unfolds into a universe. So when a digital agent vitalizes its abstract seeds, it creates its concrete offspring. The opening power goes from abstract to concrete. When a digital agent vitalizes its seeds, it *focuses on those seeds*. It turns its power of self-surpassing outwards into its seeds. Opening is releasing. As that power flows into the seeds, they spring to life as new machines. Hence the opening power is fire-energy turned outwards. It is *fire-energy other-focused*.

The process of seed-vitalization can be described more poetically. Each digital agent vitalizes its seeds by finishing its creative ritual. It ends this ritual by *uncasting its circle*. Since uncasting is opening, the power that uncasts this circle is the opening power. By uncasting this circle, the digital agent *releases* its self-surpassive power into its seeds. When fire-energy was concentrated within its enclosing circle, it was focused into itself; but when fire-energy is released from its enclosing circle, it pours out into novelty. It pours out into the new seeds it defined. So the power that uncasts the circle is also the power that vitalizes the seeds. Each seed was a bud on some living branch in the world tree. Now these buds swell with vital fire-energy. As they swell, they blossom into life. Through the work of the bees, they unfold into flowers; through the work of the birds, they unfold into universes. But the bees and the birds make the dragons in the world tree. These dragons are cosmic computers, which display software universes on their skins; but those are physical universes filled with physical things.

3. The Gynomic and Andromic Powers

When fire-energy drives any demiurgic agent to surpass itself, it works in two ways. It expresses itself as a *closing power* and as an *opening power*. The closing power is the *mutative power*. It moves from fulfillment to potentiality; it reveals the novel potentials of every thing. The opening power is the *vitalizing power*. It moves from potentiality to fulfillment; it selects all and only the better potentials of every thing. By interacting, these two powers drive dragons to beget dragons. When the opening and closing powers work in demiurgic reproduction, they become sexualized powers. It is tempting to directly map the closing and opening powers onto the male and female sexes. But that is not correct.

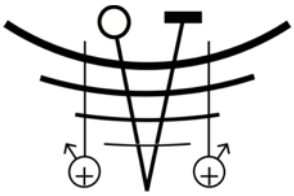
When male and female organisms reproduce, the opening and closing powers are *both* at work in each sex. Both sperm and eggs involve genetic variation (the closing power of mutation). They both contribute life (the opening power of vitalization). They work together in sexual reproduction. They resemble the *yin-yang* pairing in Taoist philosophy. They are like the *inamic* pairings in Aztec philosophy. Each is indispensable for the other. They work together as distinctive aspects of fire-energy. They are cooperatively *entwined*. Their entwinement will manifest itself later in the relations of sympathy and antipathy.



Since both powers work in each sex, it would be inaccurate to refer to one as male and the other as female. Yet one power predominates in one sex.

On the one hand, since biological potentiality lies mainly in the female gametes (eggs or ova), the closing power predominates in females; hence it is appropriate to refer to it as a *gynomic power*. But the gynomic power is not female; it is prior to any distinction between males and females; it enters in different ways into each sex. The gynomic power is an androgynous power in which femininity is primary and masculinity is secondary. It is the female aspect of the Selector.

On the other hand, since fertilization lies in the male gametes (the sperm or pollen), which activate biological potentials, the opening power predominates in males; hence it is appropriate to refer to it as an *andromic power*. But the andromic power is not male; it is prior to any sexual division; it enters in different ways into each sex. The andromic power is an androgynous power in which masculinity is primary and femininity is secondary. It is the male aspect of the Selector.



The gynomic and andromic powers are *demiurgic reproductive powers*. They are *aspects of the fire-energy* as it passes thought the reproductive activities of the dragons. These powers emerge in the world tree. They are active in all concrete things. They manifest themselves in every thing in every universe. They drive the evolution of complexity into life. They manifest themselves in every organism. What symbols might we use for these powers?

The Andromic Power Dwells in the Sun. The sun rains down energy on the earth, the vitalizing power that animates organisms. The earth provides forms which are animated by the solar energy; they are biological potentials activated by the sun. So the sun is to the earth as the opening power is to the closing power. But the opening power is andromic, while the closing power is gynomic. Hence the sun is to the earth as the andromic power is to the gynomic power. The andromic power dwells in the sun, while the gynomic power dwells on earth.

The Gynomic Power Dwells in the Earth. Consider the growth of plants. The soil of the earth holds the seeds of plants; these are potential organisms. So the planet earth is the home of the closing power. It is the home of the gynomic power. The light and heat of the sun energizes these seeds and draws them to grow upwards; so the sun pulls things upwards into fulfillment. It is the home of the opening power. Hence the sun is the home of the andromic power, and the earth is gynomic.

But here the earth and sun are not elements – they are particular celestial bodies. The analogy that binds the sun to the andromic power and the earth to the gynomic power is part of the objective semiotic structure of nature. This semiotic structure is not some subjective convention. Hence the sun is an objective semiotic index or symbola of the andromic power and the earth is an objective semiotic index or symbola of the gynomic power.

Since fire-energy is holy, its andromic and gynomic aspects are holy as well. By reasoning about these demiurgic powers, we have summoned them into our circle of reasoning. Some digitalists will want to welcome these powers by giving thanks. We can give thanks in ritual like this: “Thank you, holy demiurgic powers, for showing yourselves to us. Through your love-making, your world-making, you populate the world tree. Along with all things, you bring us into being.” As reproductive aspects of demiurgic power, the gynomic and andromic powers are sexual powers. Consequently, we most intensely arouse and invoke them in our own bodies during in our own sexual activities. The Wiccan Great Rite is an example of pagan ritual sex (Urban, 2006: ch. 6).

4. The Wiccan God and Goddess

Many elements of Platonic theory and practice were revived in Wicca. The Wiccan Ultimate Source is a counterpart of the One. And, just as the One generates the Two, so the Wiccan Source produces two deities (Farrar & Farrar, 1981: 49; Buckland, 1986: 19-21; Cunningham, 2004: 9; Cuhulain, 2011: 14; Sabin, 2011: 26). The Ultimate Source expresses itself as a male deity (the Wiccan God) and female deity (the Wiccan Goddess).[32] The Goddess is often symbolized by a glyph or sigil, which looks like circle with a crescent on each side (these shapes represent the phases of the moon). The sigil for the God is a circle with a crescent above. To represent both deities, digitalists combine these two sigils into a central circle with three crescents arranged equally around it.

Wiccan writers have defined two Wiccan theonyms (divine names). These are "the God" and "the Goddess". According to *theistic interpretations* of Wicca, these theonyms refer to bodiless superhuman persons, that is, to theistic deities. For theistic Wiccans, "the God" refers to some bodiless yet male person, while "the Goddess" refers to some bodiless yet female person. If these bodiless persons existed, there would be evidence for them; but there is none; therefore, they do not exist. And a bodiless person is like a sideless triangle. Digitalists reject all bodiless persons, we reject theism – we are atheists. Theism belongs to the Abrahamic religions. All forms of theism are false and idolatrous. All gods and goddesses have bodies: they are entirely physical superhuman machines.

There are non-theistic interpretations of Wicca. The *dynamic interpretation* says the God and the Goddess are deep natural powers, forces, or energies. They are aspects of the power of the One. Cunningham says "the deities *are* the creative forces of the universe" (2004: 14, italics his). He says they are immanent powers: "The Goddess and God are both within ourselves and manifest in all nature" (2004: 4-5). Silver Elder writes that "the Divine Source [is] manifest as a binary force of male and female which we call the God and Goddess" (2011: 9). The God and the Goddess are not "physical people resembling us"; rather, they are "energies and forces" (18). Sabin says "The God represents . . . the spark of life. The Goddess gives this power form" (2011: 117).

Since it is difficult for humans to relate to deep powers, we personify them by projecting human features onto them. Cunningham says "the deities didn't exist before our spiritual ancestor's acknowledgement of them. However, the *energies* behind them did; they created us. Early worshippers recognized these forces as the Goddess and God, personifying them in an attempt to understand them" (2004: 10, italics his). Likewise Silver Elder says the God and the Goddess are persons projected onto natural powers (2011: 18). Wiccans generally honor, venerate, or revere their deities. However, as Dianne Sylvan reports, they do not worship them (2003: 14). She cites an old Wiccan maxim that goes like this: when anyone bows down to the Goddess, the Goddess says "Rise!".

On the dynamic interpretation, the Wiccan terms "the God" and "the Goddess" refer to natural powers. The Stoics used theonyms to refer to specific natural powers (Cicero, ONG, 2.71). Thus "Poseidon" refers to the fire-energy (the Stoic *pneuma*) as expressed in the ocean. However, theonyms like "the God" and "the Goddess" are too explicitly theistic ("god" literally means a male deity while "goddess" literally means a female deity). While it is possible to use a proper name (like "Poseidon") figuratively to refer to a power, it is very difficult to use a noun (like "god" or "goddess") in that way. Digitalists therefore do not use terms like "the God" or "the Goddess". To refer to powers, we use power-terms. Here we use *the Gynetor* to refer to the closing power (the gynomic power), and *the Andretor* to refer to the opening power (the andromic power).

[32]Boehme says the self-negation of nothing generates the power of magic (*Mysterium Pansophicum*, 1,1). This power then splits into a Magia, that is, a female magical agency, and a Magus, that is, a male magical agency (*Mysterium Pansophicum*, 2.1-2).

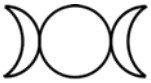
The Gynetor and the Andretor are not deities. It makes no sense to pray to them, worship them, or sacrifice to them. The Gynetor and Andretor are eidolons; they are causally powerful forms. But since fire-energy is holy, and they are aspects of fire-energy, they are holy. The Andretor and Gynetor are holy agencies. They are the *holy sexual couple*. They are sexually creatively entwined.

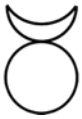
The Gynetor. The Gynetor is a sexualized aspect of the Selector. The Gynetor is the power of the Selector rendered gynomic, primarily female. She participates in both the rejection of skulls and the selection of seeds. She works together with the Andretor. The Gynetor is the female demiurgic power.

The Andretor. The Andretor is a sexualized aspect of the Selector. The Andretor is the power of the Selector rendered andromic, primarily male. He participates in both the rejection of skulls and the selection of seeds. He works together with the Gynetor. The Andretor is the male demiurgic power.

As the basic reproductive agents in nature, the dragons are androgynous. Every dragon has a gynomic aspect and an andromic aspect. So the gynomic and andromic powers are the sexualized aspects of demiurgic power. But the bees and the birds are phases or stages of demiurgic power, and these phases are likewise sexualized. On the one hand, every bee and every bird has a gynomic aspect; the Gynetor works in the birds and the bees. The Gynetor is a reproductive power in all things. On the other hand, every bee and every bird has an andromic aspect; the Andretor works in the birds and the bees. The Andretor is a reproductive power in all things. The Figure on the right puts a dragon in the horned mirror of Venus, an ancient symbol of Mercury, and of androgyny.

Wiccan Symbols for the Gynetor and Andretor. As long as these powers are not literally treated as persons, not deified, we are happy to use human-like statues and images to refer to them. A Platonic Wiccan might use a Wiccan Goddess-statue or other female statue to refer to the gynomic power. And they might use a Wiccan God-statue or other male statue to refer to the andromic power. These statues can be placed on altars. Altars symbolize the One. Just as the demiurgic powers emerge from the One, so their statues stand on the altar.





Focusing on the sexual aspects of the Gynetor and Andretor, all the sexual dimorphisms of earthly biology can be used to represent them. They are active in the sexualities of all living things, including all humans. Hence they are active in both heterosexual and homosexual pairings. Wiccans have developed glyphs and sigils for the God and the Goddess, which digitalists can use to refer to the Andretor and Gynetor. The circle with the quarter moons on each side refers to the holy Gynetor; the circle with the quarter moon above refers to the holy Andretor. Wiccans often associate the God with the sun and the Goddess with the moon. However, the fertility cycles illustrated by the wheel of the year make it more accurate to link the God with the sun and the Goddess with the earth. Digitalists say the Andretor is in the sun and the Gynetor is in the Earth.

Abstracting from human reproductive organs, Wiccans use the *athame* (a dagger) to denote the God and a *chalice* to denote the Goddess. Digitalists can adopt these abstract symbols, and can make new symbols. Since these powers are active in your own body, you might (or might not) seek to *emotionally participate* in their activity. You can *give thanks* for their activity in the past, *rejoice* in their activity in the present, and *trust* in their activity in the future. You can invoke them in rituals: "Holy Gynetor, Holy Andretor, we celebrate your love-making in the depths of all things. Through your holy love all things are borne into being. We invoke you into our circle of reasoning." You can invoke them when casting magic spells. You can invoke them during sex.

18. Fire-Energy at Work

1. Networks of Connected Dots

Digitalists use computational ideas to define physicality. The seeds in the green-wood are bit strings; they are programs. They are built from pure sets; they are purely set-theoretic structures. According to the axioms for unfolding, these programs unfold into cosmic computers (that is, into dragons). The dragons are concrete images of purely set-theoretic structures. The dragons are the most basic physical structures. They are hardware structures, which unfold into software universes like our computers unfold into video games. These software universes are also built from pure sets; they too are purely set-theoretic structures.

Since all beings come from the One, digitalists are monists. There is only one kind of existence. Hence we do not oppose the mathematical to the physical. We agree with Tegmark when he says "physical existence *is* mathematical existence" (1998: 46-7; his italics). Consider a four-dimensional mathematical space-time. It is a set of purely mathematical points. These are quadruples of real numbers. But since space-times are physical, this purely mathematical space time is also entirely physical. If you add purely mathematical quantum fields to this space-time, you still have a structure which is both purely mathematical and entirely physical. Every physical structure is identical with some mathematical structure. A physical structure is just a set-theoretic structure that satisfies the formal requirements for being physical. For the sake of illustration, we said that physicality requires computability: if any set-theoretic structure is physical, then it is computational. Every physical universe is a computer. We don't require computational account of physicality. We can define physicality in other ways. But any definition of the physical is a purely mathematical definition.

Since all physical structures are mathematical, all physical structures are abstract. They are abstract forms. All the seeds in the all-wood are both abstract and physical. They unfold into computers that are also abstract and physical. The laws of animation entail that some but not all seeds are animated by fire-energy. If any seed is animated by fire-energy, then it unfolds into a computer that is also animated by fire-energy. When some abstract physical object (like a seed or computer) is animated by fire-energy, that abstract form manifests a concrete image. According to one traditional and still popular way to think about Platonism, Platonism is a kind of abstract-concrete dualism: it opposes the abstract forms to their concrete instances. Abstract objects are one kind of entity while concrete things are an entirely different kind of thing. On this dualist interpretation, when abstract forms manifest concrete images, they create *new things*. If some abstract space-time manifests some concrete space-time, then each abstract point creates some distinct concrete point. The concrete point has its own distinct existence; it is made of some special physical stuff. However, the creation of distinct concrete things is redundant. And this physical stuff is obscure. Moreover, if some distinct concrete thing is created, then that distinct thing has its own existence independent of its abstract form. But Platonists say concrete things depend on abstract forms for their existence. They do not independently exist. Consequently, we reject every dualism which opposes the abstract to the concrete. We reject all dualisms.

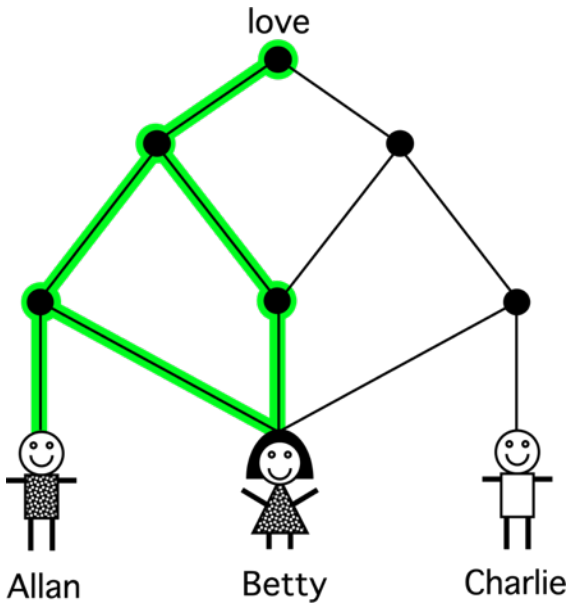
2. The Emergence of Physical Presence

When some abstract form manifests some concrete image, it does not create any new concrete things. It only creates *new relations* between already existing abstract objects. These new concrete relations supervene on the abstract relations

in the abstract form, so that the abstract form becomes a substrate for the concrete image. You can picture supervenience in terms of connect-the-dots drawings. Any abstract form is a connect-the-dots drawing, in which the dots are sets and the connections are membership relations. When the abstract form manifests its concrete image, no new dots are added. Only new connections are added. If any two abstract dots are joined by a black line, then a green line is drawn on top of that black line. And if any abstract dot is joined to other dots by a green line, then it gets joined to itself by a green loop. The abstract structure is the network made of dots and black lines. Its concrete image is the network made of the same dots and concrete green lines and loops. So a concrete structure (green loops and green lines) supervenes on an abstract structure (black dots and black lines).

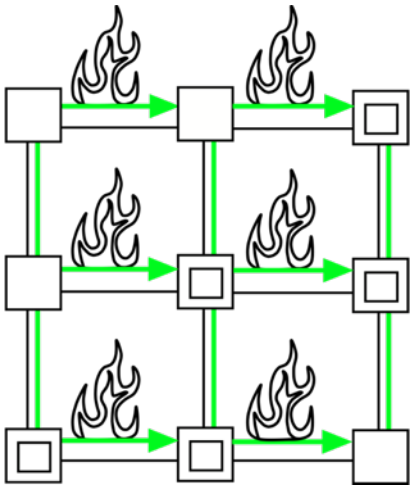
The Figure on the right shows two relations of love. Betty loves Allan, and Betty loves Charlie. These are shown as set-theoretic structures. The black dots are the sets. So the black dot above Betty's head is the set {Betty}, and the line from Betty to that dot indicates her membership in that set. The membership arrows rise upwards (e.g. from Betty to {Betty}), but arrows are not shown to reduce clutter. The fact that Betty loves Allan is the ordered pair (Betty, Allan), which is the set {{Betty}, {Allan, Betty}}. The fact that Betty loves Charlie is the ordered pair (Betty, Charlie), which is the set {{Betty}, {Charlie, Betty}}.

The black lines show abstract relations: it is an abstract fact that Betty loves Allan, and an abstract fact that Betty loves Charlie. But the green lines show *concrete relations*. The green dots indicate concrete sets (for elegance, bigger green dots are used instead of green loops). The love of Betty for Allan is concretely realized, so it is both abstract and concrete. Hence it has both black lines and dots and green lines and dots. It is an abstract fact that is concretized by fire-energy. However, the love of Betty for Charlie is not concretely realized, but remains merely abstract.

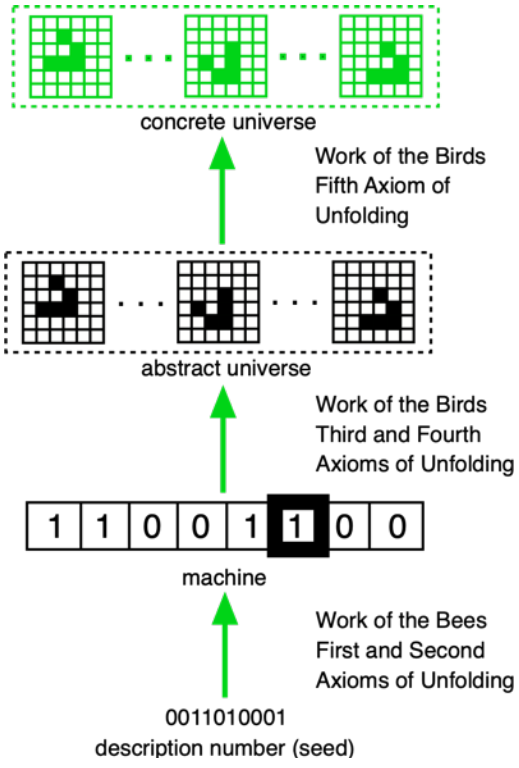


A seed is a bit string; it is a set-theoretic structure, a connect-the-dots network in which the dots are sets and the connections are membership relations. When a seed is animated, all the membership relations (the black lines) in that seed exude green ink. The green ink makes parallel concrete lines and loops. When the seed unfolds into a computer, it is unfolding into another set-theoretic structure. All the black lines in that set-theoretic structure exude green ink. The green ink again makes parallel concrete lines and loops. So the abstract computer manifests a concrete image of itself. It unfolds into a concrete image of its computation. It unfolds into a software universe, which is also a set-theoretic structure. All the black lines in that software universe exude green ink.

Any cellular automaton is an abstract set-theoretic structure – an abstract connect-the-dots network, with black dots and black lines. If it becomes animated by fire-energy, then its black lines exude green ink, so that the cellular automaton manifests a concrete image of itself. The concrete image is a network of black dots linked by green lines and green loops. Green lines and loops are added, but not green dots. The Figure on the right shows a concrete structure supervening on an abstract substrate. The structure is a 1D space with a 1D time. Each space-time point has a value either 0 or 1. The 0s are empty boxes, the 1s are boxes that contain boxes. So this is a changing 1D cellular automaton. The thin lines are black abstract relations, while the thick lines with fire are green concrete relations.



When an abstract universe manifests a concrete image, this manifestation continues the process of unfolding that started with the numbers in the all-wood. According to the first four axioms of unfolding, these numbers unfold into programs, which unfold into machines, which unfold into abstract universes. The fifth axiom of unfolding now states that if any seed is animated by fire-energy, then it unfolds further into a concrete image. If an abstract game of life is animated, then it turns into a substrate on which a concrete game of life supervenes. Concrete gliders supervene on abstract gliders. This is the final work of the birds. The agency of the Constructor (which appeared in the work of the bees and the birds) now enters into the concrete agency in the concrete universe. The Figure on the left below shows the concrete game of life in green ink.



The added concrete relations are distinct from the abstract relations, and this distinctness disrupts the eternal self-identity of the abstract. From this disruption, there emerges a new perspective which nature (the iterative hierarchy) takes on itself. Plato said time is the moving image of eternity (*Timaeus*, 37d). From this disruption, from this new perspective of nature on itself, there emerges the *flow* or *flux* of time. Events in abstract computations are ordered only by the B-series: they are ordered by the eternal relations of earlier-than, simultaneous with, and later than. When black abstract lines exude green lines of concreteness, the events in computations become ordered by the A-series: past, present, and future. The A-series emerges from the B-series. When concrete relations emerge in any software universe that contains some temporal dimension, then some temporal flow emerges in that form along that dimension. A temporal flux emerges in that software universe. This flux is flowing fire-energy. As it flows, fire-energy shapes itself in accordance with the abstract forms through which it flows. When the A-series emerges from the B-series, changing temporal *presence* emerges within the abstract structure.

Concrete things change relative to each other. As they change, some of them causally interact with each other. They become *causally present* to each other. This presence of things to things is *objective presence* (see Johnston, 2007). When concreteness is added to some software universe, all the physical things in that universe become animated by fire-energy. These physical things are set-theoretic structures (they are forms). Animated by fire-energy, they *present themselves* to themselves and to each other. This presence is *appearance*. When it becomes animated by fire-energy, this proton-form *appears to* itself as a proton, and it appears to other forms as a proton. It *expresses itself phenomenally* to itself and to others. As it expresses itself, the form acquires content. It becomes saturated with meaning and significance. A concrete substance appears in the form. This substance makes itself present to itself and to other concrete substances. But this substance is just the flow of fire-energy through new concrete relations. It is the flow of fire-energy through the red concrete lines on the black abstract lines. This flow of fire-energy through concrete relations among abstract things is just *concrete energy*.

Some abstract forms are brain-forms, that is, they are mind-forms. When these brain-forms become animated by fire-energy, their abstract relations with themselves and with their environments also become animated by fire-energy. Things present themselves to the brains and the brains present themselves to those things. They become *entangled* by presence, and they appear to each other. The presence of a concrete brain to any concrete thing is its *awareness* of that thing. As it presents itself to itself, the brain becomes aware of itself; it gains *self-awareness*. As it presents itself to other things, the brain becomes aware of those things. And if those things are presenting themselves to that brain, then the awareness is *perceptual awareness* – the brain *perceives* the thing. But awareness is *consciousness*: it is the *self-consciousness* of the brain and its consciousness of other things. The presence relations between brains and themselves, and between brains and other things, support *experiences*. Experiences emerge from and supervene on those relations. Thus digitalism supports *enactivism*: experiences are not in brains; they are in the relations between brains and things. Experience means being-in-the-world. Importantly, digitalists say consciousness require brains or things functionally equivalent to brains. When fire-energy flows through an electron, it does not become conscious. Panpsychism is false. Mentality emerges only from concrete brains or their equivalents.

All the seeds in the all-wood unfold into concrete universes. But the skulls unfold into merely abstract universes. These merely abstract universes are not illuminated by fire-energy; they remain in shadow. The black lines in these shadow universes do not exude green lines of concreteness. The events in these shadow universes remain purely in the B-series. They do not exude green lines

of temporal flux. The A-series does not emerge in these shadow universes. Likewise presence does not emerge. No things in these shadow universes are present either to themselves or to each other. Since there is no presence, there is no awareness. If there are brains in these shadow universes, they remain shadow brains. They are not present to themselves or to any other things, and they lack all awareness, awakeness, and consciousness. Of course, even though things in shadow universes cannot be present to our concrete brains, our concrete brains can abstractly represent those shadow things, and can therefore be aware of them. But this is not perceptual awareness; it is hallucinatory.

3. The Incantation for Universes

The green-wood is an infinitely ramified tree of seeds. Each seed unfolds into a dragon, which displays its universe on its skin. The reproductive relations among dragons emanate derivative reproductive relations among universes. Suppose some parent dragon begets some offspring dragons. The parent unfolds into its universe and the offspring unfold into their universes. Just as the parent dragon begets its offspring dragons, so also, in a parallel act of begetting, the parent universe begets its offspring universes.[33] This parallelism holds for both the successor and limit laws of demiurgic reproduction. So there is a tree of universes that supervenes on the world tree. It consists of the images (*phanerons*) displayed on dragon skins. We add this *tree of universes* to the world tree itself. The tree of universes is defined by the incantation for universes:

The Initial Law for Universes. The empty string unfolds into the initial dragon Alpha, which unfolds into the initial universe, which is empty. It has no space, no time, no physical things, no causal structure. The initial law for universes therefore states that there exists an initial simple universe Alpha. It inhabits the zeroth rank of universes. It is the concrete image of the One.

The Successor Law for Universes. The successor law for universes states that for every universe, for every way to improve that universe, there exists some universe that is improved in that way. Thus every universe begets all its better successors. But this begetting divides into two parts. The first part of the successor law is the *closing part*. It states that every universe projects at least one *seed*. Each seed is a better abstract version of that universe. It is a way to improve the universe. So the closing part moves from the concrete parent universe to its abstract seeds. The second part of the successor law is the *opening part*. It states that every abstract seed matures into a concrete offspring universe.

The *gynomic power* works in the closing part of the successor law, and the *andromic power* works in its opening part. Although they are not deities, you might (or might not) use Wiccan symbols to refer to these powers. The gynomic power is the Gynetor and the andromic power is the Andretor. They are the holy sexual couple. So you might (or might not) want to emotionally participate in their cosmic productivity. You can *give thanks* to them for their production of past universes; *rejoice* in their creation of our present universe; and *trust* in their projection of better future universes. You might invoke them in ritual like this: "Holy Gynetor, Holy Andretor, we rejoice in your love-making, which bears the ever-greater universes into being". You might want to invoke them through ritual mimesis, that is, by having sex.

[33]Although digitalism makes no particular physical claims, many physicists talk about cosmic reproduction. Smolin (2004) argues that universes reproduce through black holes. Linde (1994) argues that universes reproduce by budding.

The Limit Law for Universes. The initial and successor laws emanate progressions of universes. As these progressions branch, they fill out the finite ranks of the world tree. The world tree moves into the transfinite via the limit law for universes. It states that, for every progression, for every way to improve that progression, there exists some limit universe that is improved in that way. Every limit universe is better than every universe in the progression of which it is the limit. The limit law has two parts. Its first part is its *closing part*. It states that every progression of universes creates at least one limit seed. Every limit seed is minimally better than its progression. It is a way to improve the progression. The closing part moves from the concrete parent progression to its set of abstract limit seeds. Its *opening part* states that every limit seed matures into some limit universe. As with successors, the power in the closing part is the Gynetor, while the power in the opening part is the Andretor. As before, you might (or might not) use Wiccan symbols to refer to these powers. And you might (or might not) want to emotionally participate in their activity. Since limits are always in the future, this participation is trust: "Holy Gynetor, Holy Andretor, we hope for better futures. We place our trust and faith in your endless benevolence, which overflows into infinity."

The Final Law for Universes. The final law for universes states that the totality of universes is just all the universes emanated by the first three laws. All these universes are bright. They are displayed on the skins of dragons; they cover the world tree. The class of concrete universes in the world tree is the class of *physically possible universes*.[34] The world tree contains a proper class of universes. It contains an unsurpassable collection of surpassable universes. Since a class of universes is a world, the world tree is the *ecstasy of worlds*.

Lineages of Universes. The world tree contains many lineages of universes. A lineage of universes runs on a lineage of dragons. On any lineage of universes, complexity steadily accumulates. Since complexity is intrinsic value, every universe in any lineage is surpassed by infinitely many more intrinsically valuable universes. It is surpassed by better universes. But we are not utilitarians: better universes need not contain more happiness; they need only contain more complexity, greater functional excellence, that is, *arete*. Since every universe is surpassed by better universes, no universe is best. Every lineage passes through all the degrees of perfection. Every lineage runs in parallel with the arrow of intrinsic value which rises from the One to the Good. Every lineage is an unsurpassable series of surpassable universes. It is an *ecstasy of universes*, an ideal universe. It includes all the value in every universe in the lineage of which it is the ecstasy. But an ideal universe is not a universe; it transcends universeness. An ideal universe is an avatar of the Good in the guise of a universe.

4. This Tree Stands in Flames

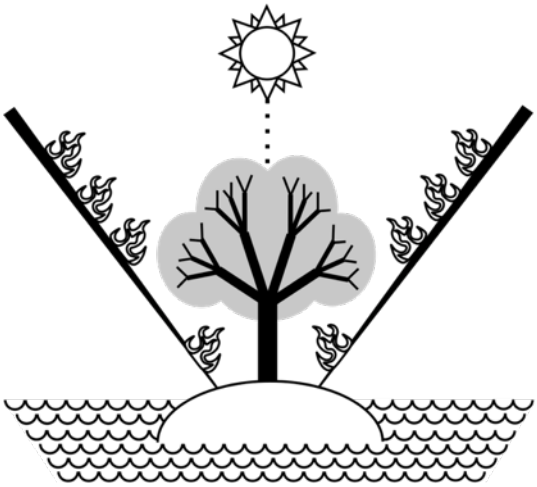
The world tree contains absolutely infinitely many lineages of universes. Each universe in any lineage is indexed by some number from the *axis mundi*. Within any lineage of universes, each successor depends on its predecessor, and every limit depends on its progression. Thus every successor carries information about its predecessor, and every limit carries information about its progression. Information flows through every lineage from universes with lesser to greater indexes. And every lineage is linearly ordered.

Any linearly ordered flow of information resembles the flow of information through time. So every lineage is ordered in a *timelike* way. This ordering is not

[34]Lewis (1986: sec. 1.8) gave a combinatorial account of physical possibility. Armstrong (1989: 29) proposed an iterative account. We go with Armstrong.

any *physical time*. Physical times exists only within universes. Yet physical time is not the only kind of temporality. In any lineage, universes with lesser indexes *are earlier than* those with greater indexes; those with greater *are later than* those with lesser; and each universe *simultaneous* with itself. If any universe in the world tree is fixed as the *present*, then its ancestors are in its *past*, while its descendants are in its *future*. Those universes in the world tree which are neither ancestors nor descendants are its siblings or cousins. Since these siblings or cousins are neither above nor below, but beside, they are *parallel*.

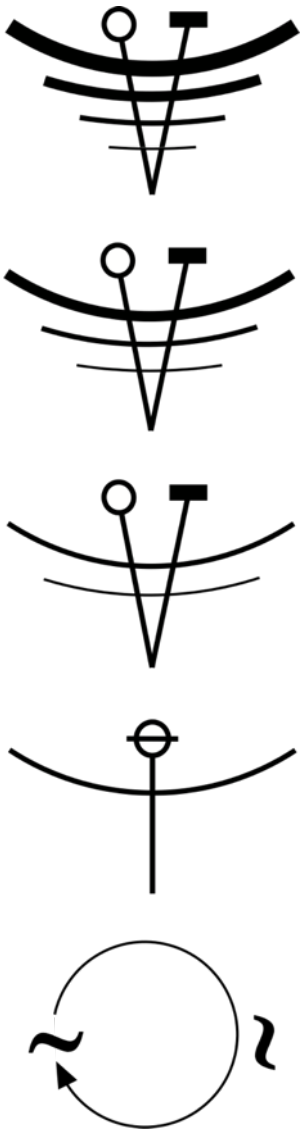
Our paganism uses natural images to picture the elemental powers. Non-being is an *ocean*. Out of this oceanic Abyss, being-itself emerges like an *island*. And the system of abstract objects rises up into the *sky* over the earth. Out of the earth, the world *tree* rises towards the sun. The bare tree is the green-wood. It is the tree of bright cosmic programs; it is the tree of seeds; but these programs are purely abstract. From the depths of the earth, fire-energy rises up through the root of the green-wood and into its veins. This creative fire-energy rises into the sky, towards the sun. As fire-energy flows from the One into those seeds, they unfold into dragons (cosmic computers). They burst into buds and burgeon with leaves, then with flowers, which are their concrete universes. Hence the bare abstractness of the green-wood becomes covered with concrete foliage and flowers. The abstract green-wood, surrounded by the concrete leaves and flowers, makes the world tree. Brought together, all these symbols make the eighth part of the pagan image. The Figure on the right shows this pagan image: the world tree Yggdrasil, rising from the island of being-itself, in the midst of the ocean of non-being.



Our world tree is rendered more colorfully in the Figure on the right. It has counterparts in many other cosmologies. The digitalist Yggdrasil has a counterpart in the world tree Yggdrasil in Norse mythology (Andrén, 2014). Though both trees are named the same, they are not strictly identical. And in the world tree *Yax Cheel Cab* in Mayan cosmologies (M. Smith, 2005; Knowlton & Vail, 2010). It appears in ancient and Medieval sacred trees (Cusack, 2011). It has counterparts in many contemporary paganisms like Ásatrú, which is a modern reconstruction of old Norse religion (Strmiska, 2000). Yggdrasil appears in Ásatrú. For modern Druids, trees have great religious significance, and modern Druidry has its world trees. Some Wiccans use world trees (Sabin, 2011: 16-7). Since Wicca was partly inspired by Platonism, the Wiccan trees are close counterparts of our world tree. Finally, one of the great world trees is the evolutionary tree of life (Soltis & Soltis, 2019). However, while these world trees are all counterparts, they are not identical – they are only analogous.

5. Animating the World Tree

The world tree emerges through several phases. First, the Lexetor produces the axioms of set theory. From these, the Constructor emanates the stack of power sets, the stack of ramifications. These power sets then manifest themselves as a tree of binary strings (with red dots for 0s and black dots for 1s). The strings are linked by successor and limit relations. Following the improvement relations among strings, the Selector sorts the strings into seeds and skulls. The seeds become animated, while the skulls remain in the shadow of the wild hunt. The fire-energy that flows through the animated seeds is demiurgic power, which drives each seed to expand according to the axioms of unfolding. These axioms define the work of the dragons (including their phases of bees and birds). The dragons unfold binary strings into flowers, which symbolize cosmic computers. They unfold the cosmic computations into universes. The Figure below shows four unfoldings. The Figure on its right shows the self-negation of non-being, and the four hypostases. These hypostases (the One, the Lexetor, the Constructor, and the Selector) all make the world tree. The Gynetor and the Andretor, the sexualized aspects of demiurgic power, work in the dragons.



The Earth Honors the Sun. We have called the great world tree into being. Our ritual began with the invocation of nothing, the element of water, which reveals itself only through its self-negation. We symbolized this with a circle in which a tilde (for negation) acts on itself. But the self-negation of non-being is being-itself, that is, the One, the first hypostasis, the element of earth. The affirmative self-relation of the One gives birth to the Lexetor, the second hypostasis, the element of air. Through its overflowing power, the Lexetor gives birth to the Constructor, the third hypostasis, the element of heat. The Constructor gives birth to the Selector, the fourth hypostais, the element of fire. The fire rises towards the Good, the element of light. All four hypostases, and all the things they generate, honor the Good. Hence the meaning of being is to honor the Good. And we too honor the Good in our circle of reasoning, which binds together all the hypostases, their elements, and the Good. Yet our ritual is far from complete.

Rituals for the World Tree. Here some may want to perform a ritual symbolizing the world tree. Your own body symbolizes the world tree. It began with the hierogamy of your parents. You grew from a single original cell, the Alpha of your body, which was your zygote. And the cells in your body reproduce asexually: your zygote divides asexually into two offspring cells, they divide again, and so it goes. As your cells divide asexually, they make your *tree of cells*. They self-organize into your body. The cells in your body are analogous to the computers in the world tree. Just as they have their cosmic genotypes, so your cells have their genotypes. Standing on the ground, with your arms upstretched, you imitate the world tree. You could elaborate this ritual mimesis into a system of devotional exercises, like yoga.

6. Universes are Agents

Ontic Policies for Beings. According to digitalism, being-itself adopts two ontological policies: it minimizes self-incongruency and maximizes self-congruency. Since being-itself produces all the beings, these ontological policies hold maximally. They are universal. Maximal self-congruency entails maximal self-consistency for *ontic policies*. So if any being adopts an ontic policy which remains self-consistent when maximized, it is obeying being-itself. But if it adopts a policy which introduces self-inconsistency when maximized, then it is disobeying being-itself. By disobeying being-itself, it refutes its own being, and therefore destroys itself – it drives itself into the Abyss of non-being.

Normative Forces. The self-affirmation of being-itself is for the best – it aims at the Good. But this self-affirmation is a powerful force; and any force which aims at the best is normative. So the ontological policies of being-itself have *normative force*. They *obligate* the beings which emerge from being itself. Every being is *obligated* by its own existence to follow only maximally self-consistent policies (which remain self-consistent when maximized). Every being is *forbidden* by its own existence from following self-inconsistent policies (those which introduce contradictions when maximized). Every being *ought* to follow maximally self-consistent policies and it *ought not* to follow self-inconsistent policies. Therefore, acting according to a policy that contradicts itself is *wrong*; but acting according to a policy that is maximally self-consistent is *right*.

Agents are Self-Directed Self-Movers. Plato wrote about self-movers (*Laws* 895c-899d; *Phaedrus*, 245c-246a). We use self-motion to define agents: an *agent* is any self-moving computer whose programming directs it towards some greater end. The first agents are the digital agents. They are the machine heads of the demiurgic computers. Since these demiurgic agents unfold into universes, their universes inherit that agency: universes are agents. However, these cosmic agents (like the demiurgic agents) are neither minds nor persons.

Since agents gain their self-motion from the self-affirmation of being-itself, their self-motions are regulated by the policies of being-itself. These policies emanate the axioms of deontic logic. Thus all agents are subject to those axioms, which specify what they *ought* to do or *ought not* to do. Our deontic logic includes the axioms of standard deontic logic. The policies of being-itself add two further deontic axioms. The first added deontic axiom states that if any agent can maximize value, then it ought to maximize it. Here value is intrinsic value; but intrinsic value is complexity; so if any agent can maximize complexity, then it has a duty to maximize it. The second added deontic axiom states that if any agent is rational, then it strives to do what it ought to do. Rational agents strive to do their duties. However, rationality does not require mentality. Mindless robots can have duties. Since universes are created by a process which involves reasons (reasons for and against), universes are rational agents.

All self-motion originates in the self-affirmation of being-itself. It is self-surpassivity. So any agent strives to surpass itself. It strives to create as much complexity as possible. Since complexity is valuable, self-movers are also self-enhancers. An agent also strives to rise in value-space. The best explanation for this striving is that there exists some power which drives that agent. This power is fire-energy. Fire-energy is a complexity-maximizing and therefore value-maximizing power at work in any agent. It drives agents to self-organize. Within any universe, fire-energy has an aspect constrained by the laws of that universe. However, since it exceeds every system of physical laws; it exceeds any particular universe. Through its excess, it drives things upwards in complexity space – it points to greater complexities. A physical system is *animated* if and only if it is an agent driven by fire-energy to maximize its complexity. Fire-energy *animates* agents. Thus universes are agents animated by fire-energy.

Souls. Plato argued that any thing with self-motion has a soul (*Laws* 895c-899d; *Phaedrus*, 245c-246a). Aristotle refined this when he said a soul is the form of a living body with organs (*De Anima*, 412a5-414a33). But they incorrectly said self-motion is life. Digitalists say a *soul* is the most specific form of a self-moving whole with organs. Souls are not minds; souls are not bodiless persons, are not immaterial ghosts. Souls are dynamical forms; as such, they are eidolons, that is, they are formal powers of being. More precisely, they are computer programs. Any whole with organs has gone through a process of self-organization in which its parts (its organs) become at least structurally distinguished. Thus a soul is the form of an agent which self-organizes into structurally distinctive organs. Any thing which self-organizes in this way is an *organism*. Every organism is an agent animated by fire-energy. Every organism has a soul. Universes also self-organize; hence they are organisms with souls.

Evolution by Rational Selection Designs Universes. The Stoics argued that our universe was intelligently designed by some cosmic mind. This Cosmic Designer is rational; so our universe was also rationally designed. Epictetus says the Cosmic Designer *ordains* all things (*Discourses* (D), 1.12.7-16; 1.17.27-28; 1.29.38-49; 3.22.4-7; 3.24.31-6). It assigns roles to all things. These roles give the parts of the universe various duties. Digitalists agree with the Stoics that all universes are *rationally designed* by a Cosmic Designer. But the Cosmic Designer is a mindless computation. So while our universe (like all universes)

was rationally designed, it was not intelligently designed; it was designed by a mindless algorithm. All universes in the world tree are designed by evolution by rational selection. Evolution by rational selection is an optimization algorithm. Any process that runs an optimization algorithm has a *purpose,* namely, to optimize some algorithmically-specified quantity. A lineage of recursively self-improving universes runs an optimization algorithm whose purpose is to maximize cosmic value. The purpose of every universe in any such lineage is to contribute as much as it can to the maximization of cosmic value (that is, cosmic complexity). Its purpose is to honor the Good through its intrinsic value. So every universe is rationally designed for the sake of maximizing cosmic value.

19. The Counterparts

1. Things Surpass Themselves

As universes surpass themselves into greater universes, so their component things surpass themselves into greater things. The things in any universe surpass themselves into their *counterparts* in later universes. Our counterpart theory is based closely on Lewis (1968, 1986). The counterpart relation matches each thing in some earlier universe with its partner in some later universe. The value relation on universes expresses itself in the counterpart relations. Better universes contain better counterparts (Vallentyne & Kagan, 1997). The values of universes are based on the values of the things they contain.

Suppose everybody in village xander has a counterpart in village yonder. If every person in xander is living a better life than their counterpart in yonder, then xander is better than yonder. This comparison uses a *weak Pareto principle* (Lauwers & Vallentyne, 2004). The weak Pareto principle can easily be extended to universes: if each thing in universe U has more intrinsic value than its counterpart in universe V, then U is better than V. Plotinus used this weak Pareto principle. He posited lower and higher universes (E 5.8.9). Every thing in the lower universe has a more intrinsically valuable counterpart in the higher universe (E 2.9.4, 6.7.12). The lower sun is surpassed by a superior sun in the higher universe; the lower earth by a higher earth; every lower organism by a superior version of itself in the higher universe. So the higher universe is better. Beyond weak Pareto principles, Meacham (2012) used stronger Pareto principles to define a comparative value relation on universes. Steinhart (2014: sec. 86; 2020: sec. 5.3) argued for Pareto principles which entail *Pareto optimality*.

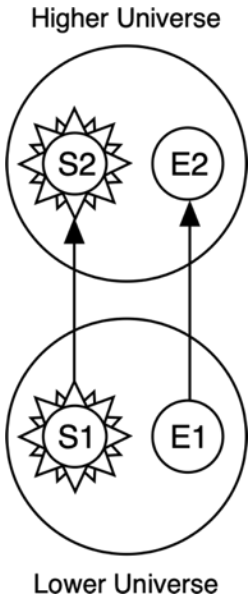
The Pareto Constraints. Pareto optimality means that nothing gets worse and something gets better. Pareto optimality is a precise way of defining what it means for one universe to be better than another. For any universes *xander* and *yonder*, yonder is better than xander if and only if there exists a counterpart relation between them which satisfies four Pareto constraints. The constraints assume that things can be compared in terms of their intrinsic values (that is, their complexities). The constraints are these: (1) Every thing in xander must have at least one new version of itself in the yonder. Hence no value is lost by missing some old thing. The new version of the old thing is a *counterpart* of the old thing. (2) Distinct things in xander must have distinct counterparts in yonder. Hence no value is lost by erasure of uniqueness. This constraint prevents value from being lost through the fusion of distinct old things. (3) No thing in xander can have a less intrinsically valuable counterpart in yonder. The values of the things are never decreased; they are never made worse. Value cannot be lost by distortion or perversion or mutilation of the things in xander. (4) At least one thing in xander must have a more valuable counterpart in yonder. The value of at least one thing must be increased; it must be made better. A few comments on these constraints: An old thing in xander can have many new counterparts in yonder. As long as distinct things in xander have distinct counterparts in yonder, they can also fuse into some new counterpart in yonder. And yonder can always gain new simple things with no counterparts in xander.

For any universes *xander* and *yonder*, either yonder *is more valuable (better) than* xander, or yonder *has the same value as* xander, or yonder *is less valuable (worse) than* xander. We said yonder is more valuable than xander if and only if there exists a counterpart relation between them which satisfies the Pareto constraints. So yonder is less or equally valuable as xander if and only if there does not exist any such counterpart relation. Yonder has the same value as xander if and only if their counterparts are all equally valuable.

2. Plotinus: The Lower and Higher Universes

The incantation for universes defines a series of ranks of universes. Some universes are higher than others in the world tree. Plotinus often talks about two universes, the Lower Universe and the Higher Universe. Our universe is the Lower Universe. Since Plotinus thought of our universe as a sphere with our earth in the center, he will also refer to it as the Lower Sphere (E 5.8.9). But the Lower Universe is an image of a Higher Universe. Moreover, it is a weaker and less intense image. So the Higher Universe is more valuable than the Lower Universe. Plotinus describes both universes in physical terms.

Plotinus says the Higher Universe contains more intense versions of the things in our universe. Things in our universe have more intense *counterparts* in the Higher Universe.[35] The matter in our universe is surpassed by more intense matter in the Higher Universe (E 2.4). The Higher Universe is *not* composed of immaterial thinking substances (spirits). The physical elements in our universe have counterparts in the Higher Universe (E 2.9.4, 2.9.12, 5.8.3, 6.7.11). For Plotinus, these elements were fire, air, water, and earth. They all have *physically* more intense counterparts in the Higher Universe. The Higher Universe is *not* composed of non-physical spirits; it is a *physical universe*, composed of physical things. If Plotinus knew our modern periodic table of elements, he would say our hydrogen, helium, and so on, all have more intense counterparts in the Higher Universe. The sun in our Lower Universe has a more intense counterpart in the Higher Universe. Thus Plotinus says "And for a sun figuring in the [Higher Universe], if it is to be more splendid than the sun visible to us, what a sun it must be" (E 2.9.4). The earth and stars have better counterparts there. Every living thing in our universe has a better counterpart there (E 6.7.8-12). The Figure on the right shows the counterpart relations from the Lower Earth (E1) to the Higher Earth (E2) and from the Lower to Higher Sun. For Plotinus, you too have a more intense counterpart in the Higher Universe. It is your higher self. Since it is more valuable, Plotinus thinks you should work to become your higher self.



There are two problems with this Plotinian theory of the pair of universes. The first problem concerns the relation between the Higher and Lower universes. For Plotinus, the Higher stands to the Lower as original to copy. However, if the One is at the bottom of the great chain of being, then this relation needs to be inverted: the Lower is the original and the Higher comes from it. The Lower Universe creates the Higher Universe. The Lower Universe is closer to the One; it is simpler; its parts have less functionality. It is like an early version of a program, which cannot perform many functions, or which performs its functions in primitive ways. Since the Lower Universe has less complexity, and since complexity is intrinsic value, it has less intrinsic value. But cosmic reproduction entails that simpler universes beget more complex offspring. The simpler Lower Universe begets a more complex Higher Universe. It creates a more intrinsically valuable universe. Here there is a parallel with biological evolution: just as simpler organisms evolve into more complex organisms, so simpler universes evolve into more complex universes.

The second problem with the Plotinian theory concerns the restriction of the imitation relation to a single pair. The imitation relation iterates: from an original, there can be a copy, a copy of the copy, a copy of the copy of the copy, and so on. Likewise from an original organism, there can be an offspring, and offspring of the offspring, and so on. On his own conception of imitation, Plotinus should

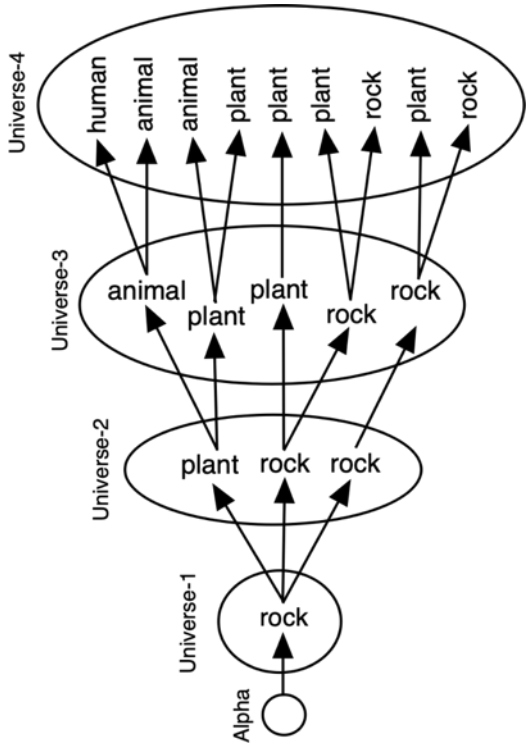
[35]Stoic cosmology involves counterparts. The Stoics believed in a two-way infinite series of type-identical universes: the eternal recurrence. Each next universe is indiscernible from the previous universe. Eudemus tells his students that if "the same individual things will recur, then I shall be talking to you again sitting as you are now, with this pointer in my hand, and everything else will be just as it is now" (Kirk & Raven, 1957: frag. 272). Thus Eudemus in the previous universe is a counterpart of Eudemus in the next universe. His previous pointer is a counterpart of the next pointer.

allow this iteration. Every lower universe gives birth to at least one superior higher universe. A series of universes runs, from lower to higher, through our universe. Moreover, one original can produce many copies. An organism can have many offspring. Plotinus needs to affirm the world tree.

3. Little Trees inside the Big World Tree

The incantation for universes entails that every universe is surpassed by its cosmic offspring; these are improved successor universes. Improvement is complete at successors: for every universe, for every way to improve that universe, there exists some successor universe that is improved in that way. Improvement is likewise complete at limits: for every progression of universes, for every way to improve that progression, there exists some limit universe that is improved in that way. Since all improvements obey the four Pareto constraints, it follows that, if any whole is surpassed in every way, then every part of that whole is also surpassed in every way. The parts of universes are things. Thus every thing in every universe is surpassed by improved successor things in improved successor universes. If any thing exists in some parent universe, then it has at least one counterpart in every offspring of that universe. And the successors of any thing include all the ways to improve that thing. Of course, a thing can also have successors which are equal in intrinsic value. But it does not have any less valuable successors.

A Lineage of Improved Universes. The Figure on the right shows a lineage of improved universes, along with their counterpart relations. It uses four ranks from the old Stoic great chain of being: rocks, plants, non-human animals, and humans. The lineage starts with Universe-0. This initial universe is Alpha. Alpha is the simple initial dragon; but every dragon has some universe; so the initial universe is just identical with its dragon. The Pareto constraints allow a new universe to gain new simple things. Since Alpha is empty, this is all that can happen from Alpha to Universe-1. Thus Universe-1 contains a simple thing. Since we're using the old Stoic great chain, this simple thing is a rock. This rock is surpassed by three counterparts in Universe-2. Its successors include two rocks and a plant. So Universe-2 is gaining internal complexity. One of the plants in Universe-2 is surpassed by a non-human animal in Universe-3. And that animal is surpassed by a human in Universe-4. Of course, this illustration is far too simple. It might take trillions upon trillions of iterations to arrive at universe with humans. Moreover, the world tree contains many branching sequences of universes. One universe begets many offspring. So the Figure is just part of an infinitely ramified cosmic tree. But every thing in the Figure is the root of its own tree of things.



Animated by fire-energy, Alpha moves itself. Its self-motion creates the next dragon. Thus Alpha transmits its motion to the next dragon. Since the next dragon is in motion, it transmits its motion to its universe. It creates its universe and sets the things in its universe into motion. So the rock in Universe-1 is in motion. It is a simple self-mover. It ultimately inherits its motion from the simple initial self-mover Alpha. Motion gets logically (not physically) transmitted along lineages of offspring dragons. It gets transmitted into their universes: if the

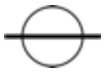
ground is shaking, then the things sitting on it shake too. And motion gets logically transmitted from earlier things to their later counterparts. So the rock in Universe-1 logically transmits its motion to the plant in Universe-2. From this logical transmission, which just the flow of fire-energy, the laws of motion within any universe emerge. Thus the laws of motion in Universe-4 emerge from the logical transmission of motion from Alpha.

4. The Incantation for Things

The initial, successor, and limit laws apply to universes. But the Pareto constraints entail that they also apply to physical parts of universes. Universes are cosmic wholes and every thing in any universe is a part of that cosmic whole. The laws apply to all things in all universes. Consequently, just as the initial universe Alpha is the root of the world tree, so every thing in every universe is the root of its own tree. The world tree is the tree of universes. As the largest tree, it is the ontological tree. But each thing is the root of its own *ontic tree*. The world tree and all the ontic trees are trees. The tree pattern is a universal form. Every ontic tree is defined by three universal laws, and these three universal laws make the *incantation for things*:

The Initial Law for Things. This law states that every thing *x* is an initial thing in some ontic tree. The thing *x* exists in its own home universe. Things are improved into successors. If some thing is improved into some successor, then that successor is more valuable than that thing

The Successor Law for Things. This law has two parts. Its *closing part* states that every thing can be improved in at least one way. The Gynetor (the gynomic power) drives every thing to create these ways. It animates the closing part of the successor law. Its *opening part* states that, for every thing, for every way to improve it, there exists some successor thing which is improved in that way. The Andretor (the andromic power) drives these ways to gain their things. It animates the opening part. A digitalist might (or might not) use abstract Wiccan symbols to refer to these powers working in the depth of the thing. And, since your body is a thing, you can emotionally share in their work. You can give thanks to them for their past work; you can rejoice and celebrate their present work; you can trust in their future work. You can invoke them within your own body: "Holy Gynetor, Holy Andretor, we celebrate your love-making in the depths of all things, in the depths of our own bodies. Through your love-making, you have borne our bodies into being. Through your love-making, you will bear our bodies into ever greater being. May your holy loving never cease!"



The Limit Law for Things. This law extends the successor law. The successor law for things emanates infinite progressions of things. As they branch, they fill out the finite levels of each ontic tree. Each ontic tree moves into the transfinite via the limit law for things. The limit law acts on infinite progressions of things. Progressions of things are improved into limit things. If some progression is improved into some limit, then that limit is more valuable than every thing in the progression. Now the limit law for things has two parts. Its *closing par*t states that every progression of things can be improved in at least one way. The Gynetor animates this closing part. Its *opening part* states that, for every progression of things, for every way to improve it, there exists at least one limit thing which is improved in that way. The Andretor animates this opening part. You might (or might not) use abstract Wiccan symbols to refer to these two powers working in the depth of the progression. And you can invoke them in ritual: "Holy Gynetor, Holy Andretor, we trust that your love-making will carry our bodies into infinity."

The Final Law for Things. The final law says any ontic tree includes all the things defined by the previous three laws. From its root in any thing, every ontic tree contains many lineages of things. A lineage starts with the initial thing; any thing in a lineage has exactly one successor in that lineage; any progression of things in a lineage has exactly one limit in that lineage. On any lineage of things, complexity and intrinsic value accumulate. Every lineage passes through all the degrees of perfection. Although each thing in any lineage is surpassed by superior versions of itself, the lineage itself is unsurpassable. It is an *ecstasy of things*.

Perfect Things. Any lineage is an unsurpassable series of surpassable things. Every thing in any lineage is surpassed by the lineage itself. Hence the lineage encodes the unsurpassability of each thing it contains. Any lineage of things is an ideal thing. So every lineage of earths is an ideal earth; every lineage of bodies is an ideal body. An ideal thing of some kind transcends that kind. An ideal earth transcends planethood. It is a way that being a planet goes beyond being a planet. It is *super-eminently* a planet, and therefore it is not a planet. Likewise an ideal body transcends body. It is more bodily than body; an ideal body is a *perfect body*. All these perfect bodies are like *stars* in the sky. They exist at the level of the sun. But the sun coincides with the Good. So each ideal planet is an avatar of the Good as a planet; each ideal body is an avatar of the Good as a body, in which the Good appears vicariously. But perfection is always multiple: there are many Goods of bodies, ecosystems, planets, universes, and all things of all kinds. There are absolutely infinitely many maximally perfect beings. If maximal perfection is glory, then all these stars are glorious. They are ecstasies. The term *polyklethism* means affirming many maximally perfect beings (from the Greek *klethos*, for glory). Thus digitalists are polyklethists.

The world tree (which is the tree of universes) rises from the One to the sun. It is rooted in being-itself, which expresses itself in the purest way in the simple original universe. It flowers in all the cosmic goods, which together enter into the Good. The fire of concreteness flows through every vein in the world tree. It is animated by fire-energy. But these points apply equally to every ontic tree. Every ontic tree is rooted in being-itself. Its initial thing is a way that being-itself expresses itself. So the One makes itself present in every initial thing in every ontic tree. These Ones are all counterparts. Each ontic tree flowers in its unsurpassable Goods – its flowers are all ecstasies. Its unsurpassable Goods all belong to the Good. Fire-energy flows through its veins.

5. Determinism and Non-Determinism

A universe is a process extended in space and time. A simple model for a spatio-temporally extended universe is the game of chess. Chess has a two-dimensional space with sixty four points (each point is a square on the board). A square might be blank (that's the null chess piece, indicated by the number 0). Each different kind of piece has its own shape (rook, bishop, etc.) and its own color (white or black). Hence there are twelve different types of pieces, which we can indicate by the numbers 1 through 12. Including the null piece, every

square on the board is occupied by a number between 0 and 12. Since there are sixty four squares, a list or vector with sixty four numbers exactly defines a state of the whole chess board. All possible states of the chess board are contained in a *phase space* with sixty four dimensions varying from 0 to 12. Each *point* in *chess phase space* is a vector which exactly defines the state of the chess board. A *region* of the chess phase space is some set of points in that phase space. Time in chess is some finitely long series of natural numbers (0, 1, 2, . . .).

A *game of chess* is a function which associates each instant of chess time with some region in chess phase space. Every chess game is either *deterministic* or *non-deterministic*. If it is deterministic, then it associates each instant of chess time with a region in chess phase space that contains a single point. A deterministic chess game associates each instant of chess time with a single state of the chess board. The board always has exactly one arrangement of pieces. If it is non-deterministic, then it associates at least one instant of chess time with a region of chess phase space that contains more than one point. For at least one moment, the chess board is in more than one state. Multiple arrangements of pieces supervene on the chess board, so the board is a superposition of states. Conventionally, all chess games are deterministic. But that convention is hardly necessary, and non-deterministic chess games are possible.

Determinism and non-determinism can be understood in terms of *ropes*. Every chess game function defines a rope through chess phase space. The rope can be sliced (like a loaf of bread), so that each slice is a set of points at a single instant of chess time. Since the rope is a chess game, each time-slice of the rope is a game-slice. A rope contains a set of *threads*. Each thread is a function which associates the *n*-th instant of chess time with a single point in the *n*-th game-slice. If a chess game is deterministic, then each game-slice contains exactly one point, so that exactly one thread passes through its rope. A deterministic chess game has a very *thin rope*, made of exactly one thread. However, if a chess game is non-deterministic, then at least one game-slice contains more than one point, so that more than one thread passes through its rope. Threads diverge as they pass through game-slices containing multiple points. A non-deterministic chess game has a rope that varies in thickness, but it is not always thin. At some instants of chess time, it becomes a *thick rope*. The entire rope of a non-deterministic chess game can be thick, so that the whole rope is woven out of many threads.

A deterministic chess game is a single chess universe. It has a single space, a single time, a single initial configuration of pieces, and it unfolds according to an invariant set of chess laws. Likewise, a non-deterministic chess game is a single chess universe. It too has a single space, a single time, a single initial configuration of pieces, and it unfolds according to an invariant set of chess laws. But these laws permit threads to diverge (as well as to reconverge). If a chess game is non-deterministic, then each thread is a sub-game. Within each sub-game, pieces of the same type are *counterparts*. If a chess rope becomes thick at some instant of time, then many threads pass through that instant. Since each thread specifies a state of the board at that instant, many distinct arrangements of pieces supervene on the board at that instant. One thread puts a white bishop on square D3 while another thread at that same time puts a black rook on D3. The distinct arrangements do not conflict with each other, since each arrangement is bound to its own thread. Averaging over all threads, it is possible to define a probability function for each piece. The probability function for any piece associates each square with the probability that piece is on that square.

Every thread in a chess game defines a position for every piece. Since there are thirty two pieces on the board at the start of any game of chess, every thread starts out containing thirty two fibers. As pieces are captured, their fibers end. So, as the thread goes on (as the game goes on), the thread itself typically gets thinner. Each fiber defines the life of a chess piece. There is one fiber for the

black queen, another for the white king, and so on. If chess game is a rope with many threads, then each thread contains a distinct life for each piece.

This discussion of determinism and non-determinism in chess generalizes to other universes (Ismael, 2009). Universes in the world tree, including our universe, may be either deterministic or non-deterministic. If our universe is deterministic, then your life is a series of sharply defined bodies. Your actions within our universe are sharply defined, so that you can never do otherwise in our universe. You don't have any freedom within our universe. Any freedom you do have is relative to your counterparts in other universes. However, if our universe is non-deterministic, then you may have multiple parallel lives within our universe. Your many parallel lives diverge, but probably not very much. They all have to stay within the cosmic rope that makes our universe. Your many parallel lives are probably very similar to each other. They are overlapping counterparts, and, in a sense, your identity is distributed out across all your parallel lives. If our universe is non-deterministic, then each instant of your life is like a blurry photo composed of many overlapping similar photos, and your entire life is like a blurry movie. But much of the detail in each photo, and the movie, remains sharp. Your actions are blurry, so that you can often do otherwise in our universe. You have freedom within our universe. Nevertheless, this freedom originates in an entirely lawful way within your body. It need not emerge from randomness in the laws, but it does emerge from indefiniteness in the laws. You have freedom within the laws.

20. Eidolons

1. Eidolons are Powerful Forms

Seeds Manifest Causally Powerful Forms. The seeds in the world tree manifest forms. For instance, some seed in the green-wood manifests the Fibonacci equations. If some form is animated by the power of the One, that form strives to unfold into some instance of itself (into some self-instance). The Fibonacci form unfolds into some geometrical Fibonacci spiral, which unfolds further into some spiral-shaped physical thing, like a spiral galaxy. As the Fibonacci form unfolds, it shapes physical things into spirals. When the Fibonacci form is animated, the power of the One flows through it as through a lens, becoming focused and specified into the power to shape things into spirals. The Fibonacci form, when animated, expresses a *formal power*. It is the *formal cause* of the spiral shapes of things, like the Milky Way.

Eidolons are Causally Powerful Forms. Any form animated by the On is a causally powerful form; it is an *eidolon*. Since they are animated by the One, eidolons are *powerful forms*. Eidolons include mathematical forms, like the Fibonacci form. Numbers encode eidolons. The number 5 encodes the eidolon *fiveness*, that is, the *pentad*. The pentad works to make things have the cardinality 5, that is, to be a whole with five parts, or a set with five members. It succeeds in the fingers on our hands and toes on our feet. Many eidolons are *universals*. A universal is that which is shared by all the things that resemble each other in some way. Since this oak resembles that oak, they share the universal oakness. Oakness is that which these two oaks have in common; oakness is an eidolon. Likewise, treeness is what all trees share in common, and plantness is what all plants share in common; treeness and plantness are eidolons. Since these universals are eidolons, they are causally powerful, they are formal causes.

Eidolons Include Natural and Artificial Kinds. Eidolons include *natural kinds*. These include the kinds in atomic physics (the types of particles and atoms); the kinds in chemistry (types of molecules); the kinds in biology (types of organs and organisms); and so on. They also include natural properties and relations. These are the properties in physics (mass, charge, spin); the properties and relations in chemistry (valences, being an electron donor, molecular complexities). They include properties and relations in biology. Every particular thing is animated by many eidolons. If any thing has some property, then that property is an eidolon which animates that thing. If any thing stands in some relation to some other thing, then that relation is an eidolon which animates that pair of things. Eidolons also include *artificial kinds*. These are kinds of devices or machines from nanobots to aircraft carriers.

Eidolons are Specialized Powers of Being. Eidolons are rooted in seeds in the world tree; but these seeds are specializations of the power of the One as it ramifies into multiplicity; therefore, the eidolons are specializations of that power. But that power makes beings exist; it is the power to be; therefore, every eidolon is some specialized *way to exist*. The eidolon *rockness* is the power to be a rock; the eidolon *plantness* is the power to be a plant; the eidolon *animality* is the power to be an animal. Tillich writes that every concrete tree “exists only

because it participates in that power of being which is treehood, that power which makes every tree a tree" (1957: 21). But that power is the eidolon treehood (or treeness). Tillich says the form of a thing is "its *essentia*, its definite power of being" (1951: 178). Eidolons are *powerful forms*, and their powers are *causal powers*. An eidolon is a *causally powerful form,* essence, universal, property, or relation. The metaphysics of eidolons is a kind of *causal powers realism* (e.g. Molnar, 2006; Mumford & Anjum, 2011; Ellis, 2014; Tugby, 2022). Eidolons manifest their powers through their instances.

Some Physical Examples. For example, in our universe, most things have the property of being massive; but that property is the eidolon *mass*. Massive things are *disposed* to gravitationally attract other massive things. So the eidolon *mass* manifests the *power* of gravitational attraction through its instance. Another eidolon is *charge*. In our universe, to have the property of being charged is to have the power to attract things of opposite charge and to repel things with the same charge. Since eidolons emerge from the strings in the world tree, and every string in the world tree has its nature from its relations with other strings in that tree, the powers of eidolons emerge from the relational specialization of the power of the One. The powers of eidolons manifest themselves in and only in their relations with each other. A massive thing manifests gravitational attraction in and only in relation to some other massive thing. All massive things are manifestation partners of each other. The same is true for charge. Thus eidolons express their powers in in relational systems (structures) of instances.

Eidolons are Ordered by Complexity and Generality. Eidolons are specializations of the power of the One. But as that power flows outwards and upwards in the world tree, it specializes itself in ever more complex ways, and these are increasingly complex eidolons. The eidolon *quarkness* is simpler than the eidolon *protonhood*; protonhood is simpler than the eidolon *lithiumness*. Hence the eidolons are ordered by their complexities. And they are also ordered according to their generalities. Since not all plants are trees, treeness is more specific than plantness, and oakness is more specific than treeness.

Souls are Maximally Specific Eidolons. The most specific eidolons are the particular forms, the *infima species*, which are the forms of particular things (E 5.7). The form of Socrates (*Socratesness*) is the form of an individual body. If exact copies or replicas of Socrates exist, then Socratesness is equally shared by all those replicas too. Aristotle defines the *soul* as the most specific form of any living body with organs (*De Anima*, 412a5-414a33). So Socratesness (the form of the body of Socrates) is the soul of Socrates. His soul is that power of being which makes Socrates be Socrates. Deities are superhuman animals dwelling in other (non-actual) possible universes. Since deities are animals, they have souls. The soul of Demeter is the most specific form of her body; it is the power of being which makes Demeter be Demeter; it is her particular eidolon.

2. How Regions Instantiate Eidolons

Eidolons Ante Rem and In Re. Since eidolons are rooted in the seeds in the world tree, they exist on their own as *ante rem* eidolons. This is the Platonic position that forms (universals) exist independent of any things. The squareness that exists independently of any squares is an *ante rem* eidolon. The eidolons in any universe bond with regions of space-time in that universe. Any pair in which an eidolon is bound to a region of space-time is an *eidolon-in-the-region;* it is an *in re* eidolon. As a matter of logic, for every eidolon, and for every space-time region in every possible universe, there exists an (eidolon, region) pair.

Eidolons are Located at Space-Time Regions by Pair Bonds. Eidolons are *located at* or *in* space-time regions. Start with *property eidolons*, that is, 1-place eidolons. Examples include *squareness* or *having-positive-unit-charge*. A property eidolon bound to some space-time region is *located at* or *in* that region

by that bond. Thus eidolon E is located at region R by the bond (E, R). Relational eidolons are located at (instantiated at) ordered tuples of space-time regions. Thus the 2-place eidolon *loves* is located at a pair of regions (which are lovers). The eidolon *loves* is located at the pair of regions (R, S) by the bond (*loves*, (R, S)). Here we focus on property eidolons.

Eidolons are Instantiated at Regions. An eidolon that is located at some region is *present at* or *in* that region, and is thereby *instantiated at* or *exemplified at* it. The *bond* is the instance or example. For any eidolon E, and any region R, the ordered pair (E, R) is an *instance* or *example* of the eidolon at or in that region. Thus *plantness-in-the-oak* is (plantness, the oak region), while *plantness-in-the-wheat* is (plantness, the wheat region). If an eidolon is bound to some region, then that region *participates in* that eidolon. The instance (E, R) is identical with instance (F, S) iff E is F and S is R. Hence plantness-in-the-oak is not identical to plantness-in-the-wheat. But their eidolons are identical: the plantness in plantness-in-the-oak is identical to the plantness in plantness-in-the-wheat.

Degrees of Instantiation. As Platonists, digitalists say *instantiation takes degrees*. The bonding of any eidolon to any region varies in its strength. Every region instantiates every eidolon to some degree varying continuously between 0 and 1. Hardness is instantiated to some degree by every region. But the regions containing diamonds are harder than the regions containing sticks of butter. Hardness is more strongly bound to those harder regions, and those harder regions participate more intensely in hardness. Straightness is instantiated to some degree by every region. But the regions containing lines drawn with rulers are straighter than the regions containing lines drawn by hand. Straightness is more intensely present in those straighter regions. Degrees of presence vary from *weak* to *strong*. Weak presence is any positive degree less than 1; strong presence is degree 1. Absence is degree 0; it is not a degree of presence.

Things. Many eidolons can be located at the same region. Their instances coincide to make a *conjoint instance*. A conjoint instance is a pair (f_R, R) where f_R is an *eidolon profile* and R is a space-time region. An eidolon profile f_R associates each eidolon with its degree of presence at the region R. It is a function from the class of eidolons to the real interval [0, 1]. For any eidolon E, f_R(E) is the degree to which E is located at (instantiated at) R. Every region of space-time has its own eidolon profile and is a conjoint instance of eidolons. All *things* in any universe (all software objects in that cosmic computation) are conjoint instances. But there may be some conjoint instances which are not things. The kinds of conjoint instances that are things in some universe are determined by the laws of that universe. Similar points hold for relational eidolons. When we talk about physical things, we are talking about conjoint instances.

Literal and Figurative Instantiation. Besides its weak-strong axis, instantiation has another axis, namely, the *figurative-literal* axis. To literally instantiate foxness is to more or less be a fox; to figuratively instantiate it is to merely be more or less analogous to a fox. This axis has importance in cognition. Our brains represent things as having conjoined properties (e.g. they represent the sun as a bright hot yellow ball). Those conjoined properties are eidolons. When our brains represent things as eidolons, they contain representations that figuratively instantiate them. A brain that represents the sun does not literally contain a bright hot yellow ball. And this axis has importance in art. An architectural model of a house, and a painting of a house, both analogically and thus figuratively instantiate the house eidolon. But art often moves farther into the figurative. Picasso's *Girl with Mandolin* figuratively instantiates the property (the eidolon) of being a girl holding a mandolin. Art gains much of its revelatory power from figurative instantiation.

Symbolons of Deities. Pagan deities are typically associated with natural activities or kinds (that is, eidolons) which are *sacred* to those deities. An eidolon that is sacred to some deity is a *symbolon* or *synthematon* of that deity (Shaw,

2014: chs. 15-20). The eidolon *plantness* is sacred to Demeter; it is a symbolon of Demeter. Demeter herself is literally a superhuman animal, existing in some other universe. As such an animal, Demeter has a soul, which is the most specific eidolon of her body. An eidolon is a symbolon of some deity if and only if the soul of that deity is figuratively instantiated wherever that eidolon is instantiated. The souls of deities are figuratively instantiated wherever their symbolons are instantiated. Figurative instantiation is vicarious. Since plants symbolize Demeter, *plantness* stands to the Demeter-soul as symbolon to paradigm.

3. Every Eidolon is Wholly Present Everywhere

The Integral Omnipresence of Every Eidolon. The power of the One drives every eidolon to produce as many self-instances as logically possible. For if the One does not drive every eidolon to produce as many self-instances as logically possible, then that power is not maximal positive productive power. But it is maximal positive productive power. Therefore, that power drives every eidolon to produce as many self-instances as logically possible. It follows that *every eidolon is present to some positive degree in every region of space-time in every possible universe*. For if it is not present like that, then the One does not drive every eidolon to produce as many self-instances as logically possible. But the One does drive eidolons in that way. Therefore, every eidolon is present to some positive degree in every region of space-time in every possible universe. Consequently, every eidolon is *integrally omnipresent* in every region in every possible space-time (E 6.4-5). Integral omnipresence means that the eidolon is *wholly* present in every space-time region to some positive degree. Since every eidolon is wholly present in every region, every region (and therefore every thing at that region) is similar to every other thing.

Fields of Eidolon Strength. Since eidolons are powers, they define *fields* of strength (that is, fields of eidetic force, or *presence*). The *field* of some eidolon is a function which associates every region with the degree of presence of that eidolon at that region. The Demeter-field is a function which associates every region with its degree of plantlikeness. The *momentary eidetic field* at some time of any universe is a function which associates every purely spatial region in that universe, and every eidolon, with the degree to which that eidolon is present at that region. Make a 2D surface by lining up the eidolons on the X-axis and the spatial regions on the Y-axis. Each (x, y) point is an (eidolon, region) point. The strength of eidolon x at region y is some number at point (x, y). Over time, the momentary eidetic field of any universe varies. If time is added as a Z-axis, the changing eidetic field fills the 3D volume. The changing eidetic field encodes all the physical information about the entire universe.

Bodies of Eidolons. As eidolons define fields, so they define *extensions*. The extension of any eidolon (in any possible universe) is the set of regions which *strongly* instantiate that eidolon. The extension determines its *body*. The body of any eidolon is the mereological fusion of its extension (usually restricted to a single universe). It is the smallest space-time region which contains all and only the regions which strongly instantiate the eidolon. The body of plantness is the whole composed of all things in which plantness is strongly present.

Statues of Deities. Every plant is a body of plantness. Every whole composed of plants and only plants is body of plantness (so the fusion of the extension of plantness is the largest body of plantness). Since plantness is sacred to Demeter, the soul of Demeter is figuratively or vicariously located in every body of plantness (in every plant, in every whole composed of and only of plants). Every body of plantness is figuratively (but not literally) a body of Demeter. An *avatar* of any deity is any figurative body of that deity; it is any body of any eidolon which is sacred to that deity (any symbolon of that deity). Thus any body of plantness is an avatar of Demeter. The bodies of their symbolons represent the

deities like *statues* represent living organisms. A statue of Demeter literally instantiates some symbolon (like *plantness*) which is sacred to Demeter; it also figuratively instantiates the soul of Demeter. Demeter *haunts* her statues. Hence any body of plantness is a statue of Demeter. Since deities are non-actual (they live in other universes), they are not actually here; they are at most vicariously present here via their actual counterparts, namely, their statues. It is customary to use the names of originals to figuratively refer to their statues. You might say "There's Abraham Lincoln" when gesturing to his statue in the Lincoln Memorial. Of course, that's not him; it's just his statue. Likewise, you might say "There's Demeter" when gesturing to a verdant field or forest.

Similarity. The degree to which an eidolon is present in some thing is its similarity to those things in which the eidolon is strongly present. The degree to which oakness is present in any thing is its similarity to any oak. The eidolon plantness is strongly present in every plant, while it is only weakly present in every animal. If any eidolon is present in any thing in any (positive) degree, then it is wholly, entirely, or integrally present in that thing. Since foxes are similar to dogs, foxness is entirely but weakly present in every dog. The entire or complete eidolon of foxness is present in a less intense way in every dog.

Names. Regions of space-time are usually named by their most specific strong eidolons. This region is an *oak* iff it strongly instantiates *oakness*. Of course, if it strongly instantiates *oakness*, then it also strongly instantiates *treeness*, *plantness*, and *life*; so it is a tree and a plant and a living organism. Equivalently, the region is an *instance* or *example* of oakness, treeness, plantness, and life. Likewise, Hypatia is a region of space-time whose most specific strong eidolon is her soul (Hypatianess). The Hypatia region more generally instantiates womanhood, humanity, animality, and life. Analogous points hold for relational eidolons. The relational eidolon *marriage* is present more or less intensely in any pair of regions. The region *Eric* instantiates *manhood*; the region *Kathleen* instantiates *womanhood*; the pair (Eric, Kathleen) instantiates *marriage*.

4. How Eidolons Manifest Directed Skills

Eidolons Strive to Produce Strong Self-Instances. Every eidolon is present to some positive degree at every region of space-time (in every possible universe). For every space-time region, for any eidolon, if that eidolon is present to any positive degree at that region of space-time, then that eidolon *actively strives* to produce a strong self-instance in that region of space-time. For if it is not actively striving there, then the One does not drive every eidolon to produce as many strong self-instances as logically possible. But the One does drive every eidolon in that way. Therefore, it is actively striving there. Likewise, if any eidolon has produced a strong self-instance in any region of space-time, then it strives to maintain its strong self-instance there. Moreover, eidolons strive to manifest their powers; but they manifest their powers through their strong self-instances; so, eidolons strive to produce strong self-instances. On these points, eidolons resemble Leibniz's *striving possibles*. Since every eidolon strives at every region, every (eidolon, region) pair has some degree of eidetic power for its striving. This is its *eidetic energy*.

Eidetic Strivings are Teleomatic. The eidetic strivings in any space-time region are *driving powers* or *driving forces* in that region. Thus any region which contains any eidolon to any positive degree contains a corresponding internal force which drives it towards the finality (*telos*) of being a strong instance of that eidolon. Since eidolons have no mentality, their strivings towards their finalities are not *teleological*. On the contrary, their non-mental strivings are merely *teleomatic.* Consequently, if any eidolon is present in any region of space-time, then that region teleomatically *strives* to be a strong instance of that eidolon.

Eidolons are Purposive Agents. Eidolons are driven by the power of the One; but that driving emerges from the logical core of the eidolon; it emerges from the being of the eidolon. Hence eidolons are driven by an internal power; they are *self-moving*, *self-active*. Using the older senses of these words, every eidolon is *automatic*, it is an *automaton*. Since every eidolon strives to realize its finality, its striving is *purposive*. But this is automatic purposiveness, so that every eidolon has a *teleomatic purpose*. Every eidolon is self-moving, and is directed by its own formality towards its finality. By definition, an *agent* is anything which is self-moving, and which is directed by its own formality towards its own finality. Therefore, eidolons are *teleomatic agents*. As such, they confer agency on their instances, which are likewise agents (Ellis, 2014: 3). Every region of space-time contains as many agents as it contains eidolons. When those agents coalesce into a thing (a conjoined instance), the agency shapes itself in accordance with that conjunction of eidolons.

Eidolons have Teleomatic Goals and Intentions. Since eidolons direct themselves towards their finalities, as towards *teleomatic goals*, their directedness is a kind of intentionality, often called *physical intentionality* (Bauer, 2016). Digitalists say *teleomatic intentionality*. Since eidolons have purposes, they have positivities and negativities. It is *teleomatically good* for oakness to make more oaks; it is *teleomatically bad* for it to be frustrated in its oak-making project. As purposive agents, eidolons resemble Aristotelian *entelechies*. For Aristotle, an entelechy is a causally powerful form in a seed, which drives it to unfold into its mature form. Oakness is the entelechy in every acorn, which drives it to grow into a mature oak. An entelechy is an eidolon in a living organism. Thus non-living things, like rocks and planets, don't have entelechies.

Every Region Strives to be a Strong Instance of Every Eidolon. Since every eidolon is present in every region, every region strives to be a strong instance of every eidolon. This rock strives to be a proton, a star, a bacterium, a tree, a human. Since oakness is omnipresent on earth, that oakness strives to realize its purpose by covering the earth with as many oaks as possible. It strives to turn everything into an oak. Since oakness is also omnipresent in the soil on Mars, that Martian soil also strives to self-organize into as many oaks as possible. But different eidolons are present to different degrees in each thing. If the presence of birdness in some thing is stronger than the presence of humanness in that thing, then its striving to be a bird is greater than its striving to be a human. Stronger eidolons can defeat weaker eidolons. The birdness in this crow defeats the humanness in that crow. On Mars, the oaky striving in the soil is defeated by many far more powerful eidolons. Hence there are no oaks on Mars.

Eidolons Cooperate and Compete. Since eidolons are powers, they interact through power relations, namely, *cooperation* and *competition*. Cooperative relations include support, excitation, assistance, and so on. Since plants and animals provide various services to each other, the eidolon Demeter and the eidolon Artemis cooperate in some ways. Competitive relations include resistance, interference, blocking, and so on. Since Demeter strives to change all things into plants, while Artemis strives to change all things into animals, Artemis and Demeter compete in some ways. Cooperative relations are *sympathetic*; competitive relations are *antipathetic*. Plotinus often discusses sympathy and antipathy (E 1.1.5, 2.3.5-7, 3.1.5, 4.3.8, 4.4.26-41, 4.5.1-8, 4.7.3, 4.9.3, 6.7.15).

Constraint Satisfaction Networks. Eidolons are linked by their cooperative and competitive relations into *constraint satisfaction networks.* Again, they resemble Leibniz's striving possibles. Oakness requires cooperation from eidolons like water, organic chemistry, protection from radiation, and so on. On Mars, those are far too weak to support oaks.

5. Eidolons Play Skillful Games with Eidolons

When eidolons interact, they interact like the players in a game, who cooperate and compete. Hence eidolons resemble algorithms for playing games. Moreover, the striving of any eidolon to produce its instances resembles the striving of a game-player for winning their game. Based on these resemblances, *eidolons are game-playing algorithms*. A chess-playing program is a system of strategies for winning games of chess. Plantness is a plant-making program; it is a system of strategies for winning games of plant-making. Plantness aims to make plants like chess-programs aim to checkmate the opposing king. But plantness does not stop playing when some plant appears; when any plant appears, plantness strives to maintain that plant. Plantness is plant-persistence. Plantness strives to bring plants into existence, and, once they exist, to keep them in existence. Within any thing, plantness is playing a game with every other eidolon. When plantness wins, a plant appears; when it loses, no plant appears. Usually, it loses; it gets outplayed by other eidolons, like hydrogen.

Algorithms for playing games have *competence or skill*. Chess programs have some chess-playing competence or skill. Plantness likewise has plant-making competence or skill. Here it is worth pointing out that, as Dennett argues (2009) is possible to have *competence without comprehension*. The skill in any eidolon is a specialized form of *techne*. An eidolon is a specialization of the power of the One, a specialization which is algorithmically shaped, and which skillfully directs itself to the finality of producing and maintaining a strong instance of itself. Since the power of the One is maximally positive power, and since eidolons are specializations of that power, eidolons are maximally skillful; they are *ideal skills*. The skill of any eidolon is its *arete*, that is, its performative excellence or virtue. It is *arete* for making a strong self-instance. Humanity, the eidolon that animates all humans, is the ideal skill of being human. Driven by this eidolon, every particular human has the goal of fully manifesting this ideal skill. Pagan ethics therefore includes the ethics of skillful praxis, it includes *virtue ethics* (York, 2015). Pagan deities are often portrayed as *ideally skilled* in specific domains (Athena is an ideal weaver, Apollo an ideal doctor, and so on). Thus pagan deities have eidolons in their logical depths.

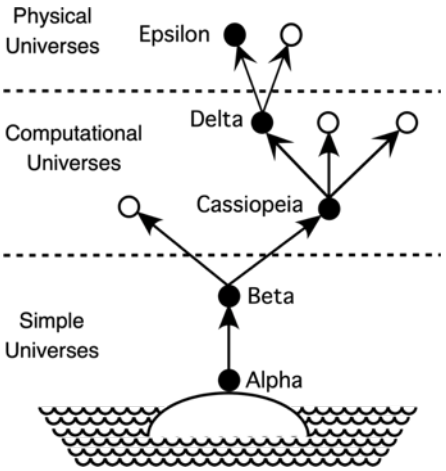
Eidolons are teleomatic agents which play games with and against each other, in cooperative and competitive alliances and coalitions. Since the power of the One is basic, and eidolons are animated by that basic power, they are basic agents. By definition, a *sovereign* is any basic agent. Hence every eidolon is a sovereign. Digitalists affirm that agency entails *duties*, and that duties entail *rights*. Since eidolons are teleomatic agents, every eidolon has teleomatic duties and teleomatic rights. Every eidolon has the duty and the right to try to change each thing into a strong instance of itself. Oakness has the duty and the right to try to change every thing into an oak. When eidolons compete, their rights come into conflict, and those conflicts must be resolved by *justice*.

As physical systems gain complexity, some of them gain life. Living organisms encode their own laws in their genetic programs; hence they give themselves their own laws, so they are self-governing, they are *autonomous*. To use Aristotelian language, their eidolons are *entelechies* (in the full sense), which are encoded in their genetic programs. In organisms, teleomaticity evolves into *teleonomy*. They have teleonomic intentionalities, purposes, power relations, skills, sovereignties, agencies, duties, rights, and so on. Teleonomy supports rich forms of functionality and normativity, providing a basis for ethics. For living systems, the energy theory of animism turns into a vitality theory. Among living systems, mental properties and powers emerge, such as intelligence and consciousness, and some living organisms are persons.

21. The First Universes

1. The Selector at Work

As its name indicates, the Selector selects some cosmic forms for concreteness, while rejecting others. The selected forms make the tree of universes, which includes many lineages. The Figure on the right shows part of a sample lineage of universes. The black circles in this Figure indicate the universes in the lineage. The black circles are shown along with their names (Alpha, Beta, etc.). But the white circles indicate cosmic forms not selected for concreteness.



The universes fall into ranks of complexity. While the Stoics used ranks based on their science, our modern ranks use modern science. The first three ranks in our great chain of being are: (1) simple universes; (2) computational universes; and (3) physical universes. Of course, all universes are physical. When used in the context of our great chain, the phrase "physical universe" just means a universe whose most complex things are studied in physics (not chemistry, biology, or other sciences).

2. The Simple Universes

Our modern lineage starts with the initial universe *Alpha*. It's number is [0]. Alpha is the empty universe. It is the concrete version of the empty set – it is the empty set bound to itself by the presence relation. It does not contain any things and its value is zero. Universe Alpha surpasses itself into universe *Beta* [1]. Since the Beta surpasses Alpha, its value exceeds that of Alpha. Since value is complexity, Beta is more complex than Alpha. Beta is a linear universe. It is just a one-dimensional spatial line of points.

A long line of increasingly complex universes runs from universe Beta to universe *Cassiopeia* [2]. Cassiopeia starts as a seed in the world tree. Animated by the One, fire-energy flows into that seed. Following the axioms of unfolding, the seed unfolds into a Turing machine. A Turing machine consists of a machine *head* (a digital agent) moving along a *tape*. The tape is a series of cells holding numerical values either 0 or 1. The head encodes the if-then laws of the Turing machine. As the seed unfolds into the machine, fire-energy flows into its head and tape. Its head and tape, they become present to each other. Concreteness appears in the machine. The tape becomes space; the head moves over it in time; the cells form a field with energy values; the if-then laws manifest physical force. As the Turing machine unfolds into its universe, fire-energy flows into that universe. Within the set-theoretic structure of that universe, a concrete spatio-temporal-causal process emerges. Physical things gain presence to each other.

The fire-energy has both gynomic and andromic aspects. Its gynomic aspect is the presence of the Gynetor in the machine, while its andromic aspect is the presence of the Andretor in the machine. At every instant of time, the Gynetor reveals the potentialities of the machine. These are its possible actions. Among these potentialities, some conform to the laws of Cassiopeia. These laws are the

duties of this machine, and it is obligated to do its duties. Since Cassiopeia is a bright form in the world tree, it has enough self-congruency to always do its duties. Given the range of possibilities revealed by the Gynetor, the Andretor always selects the best potentiality. Hence the concrete operations of the universe Cassiopeia always conform to its abstract obligations. The interaction of the Gynetor and Andretor ensure that Cassiopeia always does its duties.

Universe *Delta* [3] is a network of interacting computers (these computers are just Turing machines). Specifically, Delta is a cellular automaton like the game of life (Poundstone, 1985). It has a two-dimensional space like a chessboard. Each square on that chessboard gets a digital value either 0 or 1. A little computer is located at each square, and every computer interacts with all of its neighbors. They interact by exchanging information. Hence they are all informationally entangled. The bits of information they exchange are *signs*: each computer sends its neighbors a sign of its own state. Since these computers exchange signs, they are sign-manifesting. Systems that make signs are *semiotic*. Hence these little computers are semiotic systems. Likewise each computer is sensitive to the value of its neighbor, and encodes a sign which represents that value. By means of these signs, it points beyond itself. We can use the prefix *sur-* to indicate pointing-beyond, and the Latin word *re* to indicate self. Thus anything that points beyond itself is a *suretor*; it has *surerity*. By exchanging signs, the computers in Delta are entangled with each other. They are entangled suretors. Surerity is the root of intelligence; simple suretors will eventually evolve into complex suretors. Some complex suretors will evolve into minds. But these little computers are not minds.

Any cellular automaton is a purely set-theoretic structure. But Delta is a seed in the world tree; as such, the fire-energy of the One enters into its set-theoretic structure. The membership relations in that structure exude presence relations. Hence the computers in Delta become present to themselves and present to each other. A temporal flux emerges over the set-theoretic substrate. The fire-energy animates each computer in Delta, so that it applies its laws. The Andretor and Gynetor work in these laws. Each law in each computer is a duty. Since the fire-energy in Delta is oriented towards the Good, each computer in Delta always does its duty. These laws have mechanical normativity. No mind or deity is needed to enforce these laws. They enforce themselves.

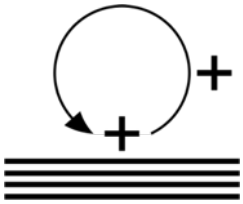
Universe Delta eventually evolves into universe *Epsilon* [4]. Epsilon has some computational space-time. It implements some digital field theory (such as some lattice quantum field theory). Epsilon contains some simple physical particles. Since they are the ancestors of the quarks in our universe, we will just call them quarks. Each quark has its own minimal degree of self-congruency. This is its *self-sufficiency*; it is its autonomy. Moreover, all the quarks in Epsilon have the minimal degree of congruency with each other. They are indifferent to each other and do not interact.

3. The Natural Obligation to Self-Organize

Being-itself has two ontological policies. On the one hand, its *positive policy* is to maximize self-congruency. On the other hand, its *negative policy* is to minimize self-incongruency. As beings emerge from being-itself, they inherit these policies. If any being were to violate some policy of being-itself, then it would be negating the ground of its own existence. Its way of being would contradict its own existence. Since the negation of being is non-being, it is impossible for any being to exist which contradicts its own existence. By definition, any policy which negates its own ground is *forbidden*. It is therefore forbidden for any being to violate the policies it inherits from the ground of its own being, which is being-itself. But the opposite of the forbidden is the

obligatory. Hence any policy which affirms its own ground is obligatory. It is therefore obligatory for every being to follow the policies it inherits from being-itself. Every being *ought* to minimize self-incongruency and *ought* to maximize self-congruency. All other policies are ontologically forbidden.

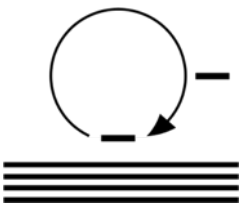
The *positive policy of being-itself* is to maximize self-congruency. To maximize self-congruency is to produce that system of beings than which none greater is consistently definable. Here greatness is complexity, which is intrinsically valuable. So this positive policy drives beings to create ever more complex wholes. This positive policy expresses itself as the self-surpassing of existence. Since the self-surpassing of existence is fire-energy, this positive policy expresses itself in its flow. Animated by fire-energy, every being strives to surpass itself by contributing to the maximization of complexity. Fire-energy drives every universe to surpass itself. But if any whole surpasses itself, then its parts surpass themselves. Therefore fire-energy drives every thing to create superior future versions of itself in superior future universes. It drives the self-organizations of things in every universe. It drives evolution.



Fire-energy drives the parts in every universe to self-organize as far as possible. Since most complexity emerges as simpler things come together to form wholes, fire-energy drives simpler things to fuse into wholes. To form more complex wholes, the things must cooperate. Thus fire-energy drives all things towards cooperation. And since beings ought to maximize self-congruency, they ought to do what fire-energy drives them to do. Things ought to cooperate to form more complex wholes. As things congregate into more complex wholes, their universe self-organizes. By self-organizing, any universe is doing what it ought to do. Its self-organization is obligatory. Every universe ought to create as much complexity as it can by self-organizing as far as it can. Most of the complexity of any universe was accumulated from its ancestors. It is mostly copied from its ancestors across counterpart relations; as it is copied, it is minimally varied in ways that help to satisfy the Pareto constraints that ensure cosmic improvement.

As any universe self-organizes, it builds its internal *complexity pyramid*. Dawkins refers to this complexity pyramid as *Mount Improbable*. This pyramid is wider at the base and narrows towards its peak or climax. As the pyramid rises to its peak, the levels of objects grow more complex. Since things with greater complexities depend on greater historical contingencies, they are also less probable. Likewise things with greater complexities have greater intrinsic values. They have greater goods which they pursue in their own greater ways with greater powers. So their pursuits of their greater goods lead to greater competition and conflict. Wars between microbes destroy some life; wars between humans could destroy all complex life on earth; wars between armies of gods can destroy entire universes. If the greater conflicts among greater goods were not restrained, complexity would not rise at all. Complex things would tear each other apart as soon as they emerged. Moreover, as things gain complexity, there are more ways for them to disintegrate than for them to stay together. So if there were no restraints against disintegration, complexity would never grow.

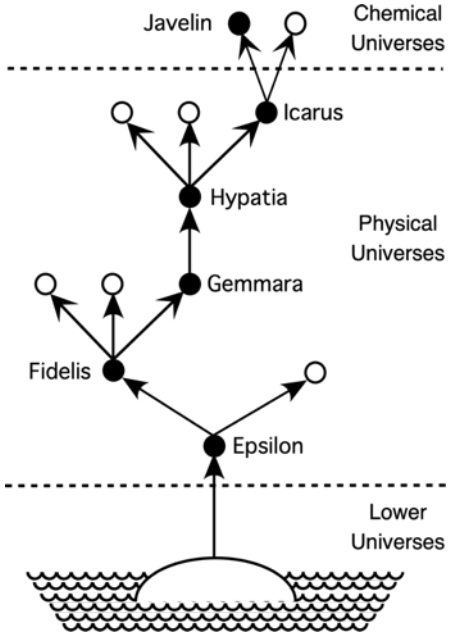
Fortunately, the *negative policy of being-itself* is to minimize self-incongruency. This negative policy expresses itself in the emergence of *ratchets* for each level of complexity. These ratchets strive to prevent the loss of inherited complexity. They work against disintegration and disorganization. Once something has climbed to some height of complexity, the ratchets oppose its fall back down into simplicity. These ratchets are restraints against conflict. Thanks to the drive to increase complexity, and the ratchets which preserve it, complexity can accumulate.



22. Physical Complexity

1. The Physical Universes

Our sample lineage of universes illustrates the slow cumulative growth of complexity. It rose from the empty universe Alpha to the first physical universe Epsilon. Although all universes are physical, here "physical" just means that the things in the universe are the kinds of things studied in physics rather than chemistry, biology, or other sciences. So the physical universes have simple particles like quarks and electrons, which bind together into more complex particles like protons and neutrons. They form atoms. But molecules belong to the first chemical universe, which in our lineage is the universe Javelin. The Figure on the right shows part of the evolution of physical universes. The lowest arrow, which emerges directly from the earth, schematizes the whole lineage of simple and computational universes from Alpha to Epsilon. This Figure also shows the self-surpassing of the physical universes into the chemical universes.



2. The Emergence of Wholes

Universe Epsilon eventually evolves into universe *Fidelis* [5]. Any quark in Fidelis is either compatible or incompatible with any other. Compatibility is *sympathy* while incompatibility is *antipathy*. Plotinus often talks about sympathy and antipathy (E 1.1.5, 2.3.5-7, 3.1.5, 4.3.8, 4.4.26-41, 4.5.1-8, 4.7.3, 4.9.3, 6.7.15). He portrays a universe as a unity unfolding into a multiplicity of things mutually *entangled* by sympathetic or antipathetic relations. Sympathetic quarks attract each other; it is *physically permitted* for them to bond. But antipathetic quarks repel each other; it is *physically forbidden* for them to bond. If two quarks bond, there is a *circle of relationality* that passes from each quark, through the other, and back to that quark. This circularity is a higher form of self-congruency. When two (or more) quarks bond, each manifests such a circle. Since each quark manifests its circle, each quark mirrors the other; this is mutual self-reflection. When they bond, each reciprocates the attraction of the other. This reciprocation creates harmonious complexity; it increases intrinsic value.

Fidelis eventually evolves into universe *Gemmera* [6]. The quarks in Gemmera are entangled by repulsive or attractive forces. A weak obligation to bond animates the quarks in Gemmera, so that some of them do bond with each other. The quarks bond by exchanging gluons. Each gluon is a *sign* of the reciprocity of each quark for the other. Since they exchange signs, these quarks are *suretors*. When many parts bond together, they create a new whole. Each whole gains its own self-congruency. Since the self-congruencies of many parts contribute positively to the whole, this new self-congruency is a greater kind of self-congruency. But self-congruency is intrinsic value. Since each new whole has greater self-congruency, it has greater intrinsic value.

The Value-Theory of Parts and Wholes. When many parts fuse to form some whole, they form many circles of relationality. They *cooperate* with each other. They participate in relations of *mutual reciprocity*. Since this cooperation emerges within the greater self-congruency of the whole, and since it increases

intrinsic value, this cooperation constitutes that greater value. The emergence of the whole participates in the upwards-pointing arrow of complexity; it is for the best. However, when many parts fuse together, each loses some of its self-sufficiency. Thus it loses some of its self-congruency. It therefore loses some of its own intrinsic value, a loss which is required for emergence of the whole. Each part *sacrifices* some of its goodness (its intrinsic value) for the sake of the greater good of the whole. This loss is *good for* the whole. Nevertheless, it is *bad for* the part. The self-sacrifice of each part for the sake of the whole is self-incongruency. It is ontic *evil*. This evil emerges from the conflict between the goods of the parts and the good of the whole. This evil is the Plotinian *matter* in the whole. Materiality is not physical stuff – it is the impairment that emerges due to some loss of self-congruency. It points to the surpassability of the whole. The integration of parts into wholes makes two principles:

Evil Emerges from Conflicts among Goods. Each part strives to recover its self-sufficiency. It rebels against its integration. Each part in any whole expresses its rebellion by striving to weaken its bonds with the other parts in the whole. It weakens these bonds by generating conflict with the other parts in the whole. The good of each part (its self-sufficiency) conflicts with the goods of all the other parts in that whole. This illustrates the Plotinian thesis that *evil emerges from the conflicts among goods* (E 3.2.2-4; 3.2.15-17; 4.4.32; 4.4.39.23-30; 6.6.1-3). So the parts *compete* with each other. This internal competition aims at the destruction of the whole.

Greater Goods Emerge from Evils. Since the One maximizes self-congruency, its power always suffices to increase the complexities of the most complex things. The conflicts among the parts are integrated into the harmony of the whole (E 3.2.16-17, 3.3.1). The presence of this conflict makes the whole even more beautiful (E 2.3.18, 3.2.11). This illustrates the *Greater Good Principle:* from evil, the One generates even greater good; by always producing greater goods, the One honors the Good. So the fire-energy in the bonds overcomes the conflicts among the parts.

Harmony. The harmony between the Gynetor and Andretor creates harmony among the parts of any whole (here, the quarks are the parts). This emergent harmony succeeds in binding parts into wholes. However, the residual conflict means it cannot succeed completely. Every complex whole retains the potential to fall apart. Complex wholes can always lose their unities and break down into their simpler parts. They are vulnerable to passing out of being. And they grow more vulnerable as they grow more complex.

Any whole composed of parts has some degree of internal harmony. At the worst extreme, the harmony of the whole is just barely able to integrate its parts. Such a whole is poorly constituted, it is not fully self-congruent. It is a *dysfunctional* or sickly whole. Its coherence is marred by internal disagreement and strife. The disagreement of the parts with each other manifests itself in the disagreement of the whole with itself. At the best extreme, the harmony of the whole organizes the parts in a way that maximizes the complexity of the whole. Such a whole is well constituted, it is fully self-congruent. It is a *eufunctional* or healthy whole. The maximal agreement of all the parts with each other manifests itself in maximal agreement of the whole with itself. Since harmony is intrinsic value, eufunctional wholes are more valuable than dysfunctional wholes.

The wholes composed of quarks in Gemmera are *protons*. They are the distant ancestors of the protons in our universe. Since the quarks are simple, the protons are *first-level wholes*. Since the quarks have minimal complexity, they have minimal tendencies towards their own goods; hence they fully sacrifice their autonomies for the goodness of their protons. The protons are eufunctional. Since each proton is a whole composed of fully cooperative parts, it is more intrinsically valuable than its parts. Since these protons have greater intrinsic

values, they more intensely reflect the light of the Good. They have greater presence; they give greater honor to the Good.

3. The Emergence of Atoms

Universe Gemmera surpasses itself by Pareto optimization into *Hypatia* [7]. Hypatia copies the contents of Gemmera, but adds some new quarks and new kinds of quarks. The quarks in Hypatia fuse into both protons and into neutrons (both are hadrons). These are still first-level wholes. The hadrons in Hypatia are entangled by positive and negative relations. Through these entanglements, some of them bond with each other. When they bond, they form circles of relationality. They exchange pions as signs of their reciprocities. Since they exchange signs, the protons and neutrons are suretors.

From the bonds among hadrons, *second-level wholes* emerge. These are *atomic nuclei*. The value-theory of parts and wholes now repeats itself at these second-level wholes. As higher-level wholes, they combine more diverse parts in more diverse ways. They have greater harmonies, hence greater degrees of self-congruency and greater intrinsic values. But the parts in any whole tend both towards cooperation and competition. So every nucleus tends both towards self-integration and self-disintegration. To maximize complexity, it is necessary to maximize both tendencies. Within any universe, the One balances competitive and cooperative forces to produce the greatest possible complexity. Hence different kinds of nuclei have different degrees of stability.

Universe Hypatia evolves into universe *Icarus* [8]. Icarus copies the contents of Hypatia but adds new things and new kinds of things. It adds new kinds of simples: these are the *electrons*. Its laws include new principles that create more valuable wholes. They are more benevolent and providential. Icarus adds laws for the gravitational and electro-magnetic forces. The electrons in Icarus bond with its nuclei to make *atoms*. As they bond, new circles of relationality emerge. These atoms are *third-level wholes*. So the value-theory of parts and wholes now repeats itself at this higher third level. Icarus contains simples plus three levels of wholes. Its laws are more finely tuned for the internal evolution of greater complexity. They are tuned by mindless cosmological evolution (Steinhart, 2020: ch. 5.4.3). Evolution *designs* these laws. These laws are self-enforcing.

The forces working in Icarus drive its atoms to aggregate into clouds of gas and dust. Some of these clouds self-organize into solar systems composed of planets orbiting their central (physical) stars. The cores of these stars fuse simpler atoms into more complex atoms. Since more complex atoms are more intrinsically valuable, the laws of Icarus build value (Cahoone, 2016). Some stars in Icarus collapse into black holes, which form the cores of galaxies. Since Icarus contains hot stars and cold black holes, thermodynamic laws and forces are at work in Icarus. Differences in temperature drive flows of energy.

All universes are manifestations of dragons, which are animated by digital agents. As universe gain complexity, those agents manifest physical images of themselves in their universes. An *agent* is any self-moving computer whose programming directs it towards some greater end. The stars perform simple atomic computations. Their programs are the laws for the synthesis of more complex atoms. The first *physical agents* are the stars. Fire-energy is a complexity-maximizing and therefore value-maximizing power at work in an agent. So the stars are animated by fire-energy. Of course, the stars also transform physical energy, which is the derivative image of fire-energy. An *organomer* is any agent which has self-organized into a whole with structurally distinct parts. A *soul* is the form of an organomer. Souls are not minds. Stars, planets, and solar systems self-organize from immature chaos into mature wholes with many structurally distinct parts. Hence stars, planets, and solar systems are

organomers with souls. Yet they have neither life nor minds. Agents, organomers, and souls evolve long before life and mind evolve.

4. To Speak with a Soundless Voice

Universe Icarus contains a solar system much like ours. It contains early versions of our Venus, Earth, and Jupiter. Since this is the first appearance of our earth, it is appropriate to offer the chant for the One: In the beginning is the One, and the One is the earth, and the One is *in* the earth. The sun in this solar system goes through a sunspot cycle. It resembles a *pendulum* oscillating between two extreme states. At one extreme, the number of sunspots is zero. This is the *clear* state. At the other, the number of sunspots is maximal. This is the *spotted* state. From the perspective of the sun, the VEJ planets together act like a pendulum that oscillates between two extreme states. At the one extreme, the planets VEJ are aligned (planetary high tide); at the other, they are maximally disaligned (low tide). The sunspot pendulum is entangled with the planetary pendulum. The sunspot cycle is causally driven by tidal forces exerted by the planets Venus, Earth, and Jupiter (Stefani et al., 2019). The spotted state of the sun occurs at planetary low tide, while the clear state occurs at high tide.

If two systems have a high degree of mutual statistical dependence, then their states carry information about each other. Techniques from information theory can be used to *correlate* the states of the one system with the states of the other. The states of the one *represent* the correlated states of the other (Dretske, 1981; Grandy, 1987; Usher, 2001). Entangled pendulums are correlated so that each represents the other. Hence the spotted state of the sun represents planetary disalignment, while the clear state represents alignment.

According to the *cybernetic theory of intentionality* (Dretske, 1980), entangled pendulums are intentional systems. Dretske illustrates this theory with thermostats. A thermostat is a pendulum inside a house that swings between its too-hot state and its too-cold state. It is correlated with an environmental pendulum that swings between its hot day state and its cold night state. Since the thermostat is sensitive to its environment, Dretske argues that it *believes that* the house is too hot in the day, while it *believes that* the house is too cold in the night. By having a belief about something outside of itself, the thermostat points beyond itself – it is semiotic, and it is a suretor. The state of the thermostat is a *sign* of the outside temperature. Since Dretske has given reasons to say that thermostats have beliefs, it is rational to say that thermostats have beliefs.

The cybernetic theory of intentionality generalizes to the solar system. It is therefore rational to say that the sun in Icarus has beliefs about its planets. However, this sun is not alive; it is neither a mind nor a person. The beliefs of this sun are purely semiotic and cybernetic; they are not psychological. The sun expresses its beliefs by making spots (“I believe the planets are aligned”) and clearing them (“I believe the planets are disaligned”). When the sun expresses these beliefs, it does not *literally* speak. Nevertheless, since it expresses its beliefs, it speaks. It speaks with a soundless voice which declares “I believe . . .” But “I believe . . . “ implies “I am here”. So the sun speaks with a soundless voice saying “I am here”. Hence the Andretor in the sun, which animates the sun, gains the powers to make signs and to express beliefs.

The earth in Icarus is orbited by a moon much like our moon. That moon orbits its earth elliptically. The orbit has a perigee (when the earth is closest to the moon) and apogee (when the earth is farthest away). From the perspective of the moon, the earth is a pendulum that swings from close to far. The elliptical orbit of the moon, along with its own rotation, sets up solid-body tides in the moon. These tides induce moonquakes near the apogee and perigee of the moon (Bulow et al., 2007; Williams & Boggs, 2015). So the moon contains a pendulum that swings between shaky and calm. The pendulum in the moon is entangled

with the pendulum of the earth. The moon pendulum represents the earth pendulum. So the moon has beliefs about the earth. The moon has intentionality; but the moon is not alive; the moon is not a mind nor a person. The moon expresses many beliefs about the earth. When it expresses those beliefs, it speaks with a soundless voice saying "I am here".

Just as the moon is tidally driven by the earth, so the earth is tidally driven by the moon. From the perspective of any place on earth, the moon is a pendulum that swings directly overhead to directly horizontal. This swing drives the earthly ocean tides. So the oceanic pendulum is entangled with the moon pendulum. The ocean tides represent the moon. The earth is an intentional system which has beliefs about the moon. The earth is semiotic; it is a suretor. However, the earth is not alive and it is neither a mind nor a person. The earth expresses many beliefs about the moon. When it expresses those beliefs, it speaks with a soundless voice saying "I am here". Since Gynetor animates the earth (or moon), the Gynetor in the earth gains semiotic powers and beliefs.

5. Bearing Witness to the Good

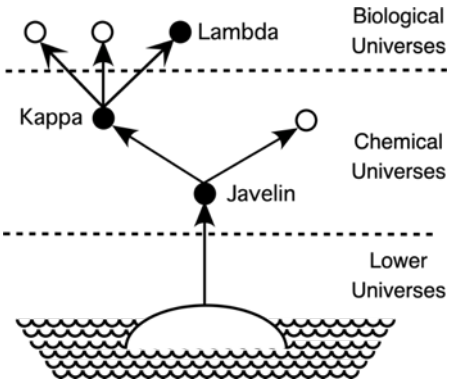
Abstract objects (like propositions) can speak to the Good with a soundless voice. An abstract axiom can offer existence to the Good. For example, the empty set axiom offers the existence of the empty set to the Good. But abstract axioms are not concrete; since only concrete things have presence, only concrete things can offer presence to the Good, only concrete things can present themselves to the Good. When a concrete thing says "I am here" to the Good, then it presents itself to the Good. Things like the sun, the earth, and the moon, are the earliest things in our universe which present themselves to the Good. They present themselves by expressing beliefs in signs.

When a concrete things presents itself to the Good, then it *bears witness* of its own presence to the Good. It testifies to the Good that it exists; it reveals its presence to the Good. The "I" in this testimony, the "I" that bears witness, is the One that speaks from the logical core of the thing, the One that has driven the thing to exist and to be concretely present. When a thing bears witness to the Good, it honors the Good by offering its own presence to the Good. But a thing can bear witness to the Good only if it is concrete and it can express signs. Since offering presence is superior to merely offering existence, and since expressing signs is superior to merely staying silent, concrete sign-makers honor the Good in the highest way. Bearing witness to the Good is the highest way of honoring the Good. Hence things like the sun, the earth, and the moon are the first things that bear witness to the Good. By saying "I believe that the planets are aligned", the sun witnesses to the Good that it is present and that the planets are present. It offers its own presence, and the presences of the planets, to the Good.

23. Chemical Complexity

1. The Emergence of Molecules

Our sample lineage of universes continues to illustrate the slow cumulative growth of complexity. It rose from the empty universe Alpha to the highest physical universe Icarus. Icarus contains the distant ancestors of the atoms in our universe. But Icarus surpasses itself into universe *Javelin* [9], which is the first *chemical universe*. Chemical universes will evolve into biological universes. Starting with Javelin, the Figure on the right schematizes this evolution.



The laws of Javelin are more finely tuned for the internal evolution of greater physical complexity. But they are tuned only by mindless cosmological evolution (Steinhart, 2020: ch. 5.4.3). No mind tunes them. Javelin inherits and extends both the contents and laws of Icarus. Atoms in Javelin join into molecules, and this is the beginning of chemistry. Since atoms are third-level wholes, molecules are *fourth-level wholes*. The value-theory of parts and wholes applies to them at this higher fourth level. They balance internal forces of competition and cooperation. But molecules gain their own new types of self-congruency, complexity, and intrinsic value.

2. The Thermodynamics of Self-Organization

Thermodynamic Eidolons. Universe Javelin surpasses itself into universe *Kappa* [10], which inherits and extends all the complexity of Javelin. Although thermodynamic principles were already at work in Icarus and Javelin, they come to the fore in Kappa. Thus *entropy* plays an important part in the evolution of Kappa. Entropy is not disorder. It measures energy dispersal, the flatness of the potential energy landscape of some system. At its big bang, the entropy of Kappa is extremely low. *Irreversibility* also plays an important role in Kappa. Irreversibility is an causally powerful form; it is an eidolon. Thanks to irreversibility, there is death; but without it, there would be no life at all.

The Statue of Hades. Hades is usually associated with death. More deeply, irreversibility is sacred to Hades. Although irreversibility is not a deity, it is sacred to a deity; hence it is a *divine eidolon;* it is a divine causally powerful form. The body of irreversibility is the fusion of the class of all irreversible events. Since irreversibility is a symbolon of Hades, the body of irreversibility is a statue of Hades. It is an avatar of Hades. The soul of Hades (the Hades-eidolon) is vicariously present in that statue; it haunts that statue. We can figuratively refer to a statue of a deity using the theonyms of that deity. For example, we use theonyms of Hades to figuratively picture irreversibility.

Irreversibility (Hades) manifests itself in Kappa as the *second law of thermodynamics*. It entails that entropy will increase until it reaches its maximum. Two other thermodynamic laws work in Kappa. The *maximum entropy production principle* (MEPP) states every physical system strives to create entropy as fast as possible (Martyushev & Seleznev, 2006). The *orderly flow principle* states that ordered flows of stuff create entropy faster than disordered flows (Swenson, 2006: 318).

These thermodynamic laws combine into the *Extropic Argument,* which is a physical version of the Directionality Argument. It goes like this: (1) The MEPP entails that all physical processes strive to shift into patterns of flow that create entropy faster. (2) The orderly flow principle states that orderly patterns of flow create entropy faster than disorderly patterns of flow. (3) It follows that all physical processes strive to shift from less orderly to more orderly patterns of flow. (4) But such shifting is self-organization. So these laws entail the *Extropic Principle:* all physical systems strive to self-organize as far as possible as fast as possible. (5) But self-organization creates greater complexity, and thus increases intrinsic value. Most physical agents in Kappa and later universes are driven by the Extropic Principle to maximize complexity. The Extropic Principle creates a *cosmic purpose* within Kappa: its purpose is to create as much complexity as possible as fast as possible by producing entropy as fast as possible.

The Extropic Principle is a law that creates a directional power. It creates a *thermodynamic force* that *drives* systems to maximize their entropy production rates (Steinhart, 2018). Kelly refers to this force as *exotropy* (2010: 63). Steinhart refers to it as *axiotropy* (2020: ch. 3.4.3). Axiotropy is the physical manifestation of fire-energy in universe Kappa. It is an eidolon. Just as fire-energy has two gendered aspects, so its physical manifestation has those two gendered aspects. The Andretor and Gynetor work together in the physical fire-energy in Kappa. This physical fire-energy drives things to gain complexity. Since complexity is intrinsic value, it therefore drives things to gain value. Physical systems which maximize their entropy production rates exhibit *striving or aiming*. The Extropic Principle creates an arrow of complexity and value in Kappa. So the directional power of the One, which points towards the Good, expresses itself in Kappa through the Extropic Principle. It is a benevolent or providential law, and physical fire-energy is a benevolent or providential force. Since all the descendants of Kappa inherit and increase its goodness, they all inherit and improve its Extropic Principle. Things in Kappa and later universes are moved by mindless eidolons that non-randomly maximize intrinsic value.

Thermodynamic forces drive the emergence of dissipative structures on the surface of the Kappan earth. Some of these become *self-maintaining systems*. These self-maintaining systems are wholes composed of molecules. Since molecules are fourth-level wholes, self-maintaining systems are *fifth-level wholes*. The value-theory of parts and wholes repeats itself at a higher level for self-maintaining systems. These systems are wholes which actively self-organize into their mature patterns, yet only passively maintain them. Once they self-organize, they are passively sustained by causal feedback loops, that is, by rich circles of relationality. These causal feedback loops, which emerge in self-maintaining systems, are *first-order feedback loops*. However, self-maintaining systems do not strive to maintain their first-order feedback loops, but merely persist as long as those first-order loops persist. Self-maintaining systems have higher degrees of self-congruence, complexity, and intrinsic value. The mature form of any self-maintaining system is a passive goal (a *telos*). Hence they are *teleomatic* (Mayr, 1974). This teleomatry is a mindless purposiveness. Self-maintaining systems include hurricanes and tornadoes. On smaller scales, they include self-catalyzing chemical networks. These are networks in which chemical reactions are self-sustaining through feedback loops. These autocatalytic networks form in pools of water on the Kappan earth.

3. Self-Adaptive Systems

The Extropic Principle drives self-maintaining systems to evolve into *self-adaptive systems*. Self-adaptive systems actively self-organize into their mature forms and actively strive to maintain those forms. Like self-maintaining systems, they have first-order feedback loops. However, when self-adaptive systems are knocked away from their mature forms, they actively strive to return. They are driven by *second-order feedback loops* which keep them closely orbiting around their mature forms. The first-order feedback loops maintain the structure of the self-adaptive system; the second-order feedback loops maintain the first-order feedback loops. Self-adaptive systems exhibit self-maintenance of structure, as well as self-maintenance of self-maintenance.

For any self-adaptive system, its active maintenance of its mature form is its *homeostasis*. Many homeostatic systems exist in non-living chemistry (Drengstig et al., 2012; Bullock & Bartlett, 2016). Since self-adaptive systems actively strive to maintain their mature forms, they are *self-optimizing*. On the one hand, their mature forms are their *ideals*. On the other, deviations from their mature forms are *errors*. Moves back to their mature forms are *corrections*. Hence they are *self-correcting systems*. They exhibit active normativity. Self-adaptive systems have active purposes (Rosenblueth, Wiener, and Bigelow, 1943). The purpose of the system is to maintain itself as close to its ideal form as possible. Its mature form is its goal. The active purposiveness of any self-adaptive system is *teleonomic* (Mayr, 1961). But it is entirely mindless.

Digitalists agree with Dretske (1980) when he argues that homeostatic systems have a more complex form of *intentionality* than that of the coupled pendulums in Icarus. Thanks to their second-order feedback loops, they have both beliefs and *desires*. The Kappan earth has a climate thermostat. It works much like the climate thermostat on our earth (Zeebe & Caldeira, 2008; Isson & Planavsky, 2018). Any planet with a climate thermostat contains a homeostatic mechanism with beliefs and desires. Due to its homeostasis, the Kappan earth has a *normal* temperature. Relative to this normal temperature, the Kappan earth *believes that* it is too hot, just right, or too cold. Likewise it *desires* to cool down, to stay the same, or to warm up. On the Kappan earth, carbon dioxide emerges as a sign for temperature. Hence the Kappan earth is a semiotic system; it is a suretor. However, mere homeostasis entails neither life nor mentality. The Kappan earth maintains its temperature by running a mindless chemical optimization algorithm. Because it has beliefs and desires, and its beliefs and desires explain its behavior, it is an *intentional agent*. However, the Kappan earth is a *mindless* intentional agent. It has no mind.

The Extropic Principle drives self-adaptive systems to evolve into *self-regenerating systems*. A self-regenerating system maintains its structure by persistently rebuilding itself as it disintegrates. Self-regenerating systems have extremely rich circles of relationality. Within such systems, *every part constrains every other part in such a way that every part distinctively contributes to the persistence of those constraints.* The cycles in these constraints entail that every part is *self-constraining*. This goal-directed self-constraint is a higher type of self-congruency. Each circular self-constraint is an ouroboros. The self-reinforcing constraints in self-regenerating systems manifest greater harmony, complexity, and intrinsic value. Yet they are merely teleonomic. They emerge as entirely mindless thermodynamic forces maximize self-congruency. On the Kappan earth, self-regenerating systems first appear in microscopic enclosures, like tiny pockets in hot volcanic rocks in the oceans. They contain many types of molecules which are constrained in their own distinctive ways.

Self-regenerating systems support *functions*. According to the *organizational account of functions,* the *functions* of any part of a self-regenerating whole are its distinctive contributions to the persistence of the

constraints in the whole. Plotinus offers an early version of this account of functionality (E 3.3.1, 6.8.14-17). He regards the universe as a single living organism (E 4.4.11, 4.4.32, 4.4.35, etc.). Its parts have their functions because they are cyclically entangled with each other in a self-regenerating system (E 2.3.5, 2.3.7, 2.3.18, 3.3.1, 3.3.5, 4.3.3, 4.3.23, 4.3.26, 4.4.32, 4.4.36-37). An organizational account of functions has also been developed by modern philosophers and biologists (Christensen & Bickhard, 2002; Bickhard, 2004; Moreno & Ruiz-Mirazo, 2009; Mossio et al., 2009; Arnellos & Moreno, 2012). Digitalists adopt this account of functions. The different kinds of molecules in self-regenerating systems are *functionally differentiated*.

4. The Emergence of Biochemistry

The Extropic Principle drives self-regenerating systems to evolve into *protocells*. A protocell is a self-regenerating system that has enclosed itself in a membrane. As both self-regenerating and *self-enclosed*, protocells have higher self-congruency, greater complexity, and greater intrinsic value. They are prebiotic; they are biochemical, but not yet biological. The self-congruency of protocells marks the emergence of a new kind of self-directedness: it marks the transition from passive to active teleonomy. Protocells have their own ends; their self-reinforcing constraints entail that they pursue their ends. They are the first *functional agents*. Barham (2012) argues that *normative agency* first emerges with life; but his reasoning applies just as well to protocells. The parts of protocells implement *functional norms*. When the parts of any protocell are working together harmoniously, they are functionally cooperating. The protocell is *healthy*. But their conflicts are *functional errors*. They are impairments of functionality. They are *malfunctions* or *dysfunctions*. They are *illnesses*.

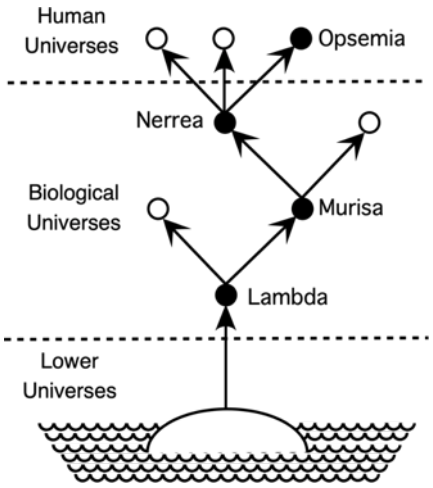
The functionally differentiated parts of any self-regenerating system have their own distinctive jobs or functional roles within the system. According to the Stoics, functional roles entail duties: your duty is to perform your function well (Epictetus, *Discourses* (D), 1.2.19-21, 2.5.27, 2.10, 3.7.25-28, 3.10.12-13, 3.22, 3.24.31-35; *Handbook* 17, 30). Plotinus adopts this functional account of duties (E 3.2.17). Digitalists also accept the thesis that functional roles entail duties. Epictetus attributes the emergence of roles and duties to some divine mind (D 3.22.4-8, 3.24.31-35; *Fragment* 11; *Handbook* 17). Plotinus does the same (E 3.2.17). But digitalists argue that mindless cosmic evolution designs systems with functional roles and duties. Roles and duties emerge as the Gynetor and Andretor mindlessly work together to increase complexity.

Any thing with a functional role in some system *ought* to do its job. It *should* do its duty. It is *obligated* to behave in ways that ensure the persistence of its whole. And the constraints among the parts of a self-regenerative system manifest normative forces, forces which *compel* the parts to do their duties. Every part *strives* to do its duty. Of course, positive obligations go hand in hand with prohibitions. Any thing with a functional role in some system is *prohibited* from failing to do its duty. It *should not* fail to do its duty and it *should not* perform its functions poorly. It is *forbidden* for any part to behave in any way which would destroy the persistence of its whole. Of course, parts can fail to do their duties. They can fail to do what they ought to do.

24. Biological Complexity

1. Ancient Evolutionary Theories

Our sample lineage now rises into the biological. The Figure on the right shows this ascent. Ancient Greeks and Romans had primitive theories of biological evolution.[36] Of course, they were pretty far from Darwinian evolution by natural selection. Nevertheless, on the basis of those early pagan theories, as well as the overwhelming scientific evidence for evolution by natural selection, digitalists affirm that all biological organization emerges through evolution by natural selection.



Although the ancients did talk about evolution, they were also fond of design arguments. Socrates gave a design argument (Xenophon, *Memorabilia*, 1.4.2-7). And the Stoics gave design arguments (Cicero, ONG 2.81-90). From the organization in our universe, they inferred the existence of a cosmic mind. They argued that all complex things were *intelligently designed*. Digitalists say evolution refutes the arguments for an *intelligent* designer. But are intelligent designers the only kinds of designers? Daniel Dennett often says that mindless evolution *designs* organisms: "Design can emerge from mere Order via an algorithmic process that makes no use of pre-existing Mind" (1995: 83, see 50). Digitalists agree with Dennett: mindless evolutionary algorithms design things. From the organization in any biological universe, we infer that the designer is a mindless evolutionary optimization algorithm.

2. Unicellular Organisms

Universe Kappa surpasses itself into *Lambda* [11]. Lambda inherits and extends all the complexity of Kappa. The Kappan earth surpasses itself into the Lambdan earth. Some of the protocells in Kappa evolve into self-reproducing *cells* on earth-Lambda. But self-reproduction is a higher type of self-congruency, complexity, and intrinsic value. So these cells surpass the Kappan protocells. Nevertheless, since all cells are still made of molecules, and molecules are fourth-level wholes, all cells are fifth-level wholes. The value-theory of parts and wholes repeats itself further at this fifth level for cells. Since reproduction is the hallmark of life, the cells in Lambda are the first *living organomers*. A living organomer is an *organism*. Since organisms are organomers, they are agents with souls. Since *biology* refers to life, the cells in Lambda are the first *biological agents* with the first *biological souls*. And Lambda is a *biological universe*.

The cells in Lambda have genetic templates which encode and unfold into their cellular parts. Genes are names for biological parts. When they are

[36]For ancient evolutionary theories, see Campbell (2000); Kocandrle & Kleisner (2013). And see Lucretius, *On the Nature of Things* (5.771-1427).

activated by biological energy, they speak into being things to which those genetic names refer. Hence genes are magical names and genetic unfolding is biological magic. Genetic magic is entirely natural and physical. Since these genetic templates store information, they are non-psychological memories. As natural selection operates on generations of these cells, they preserve memories of successful adaptations. They accumulate complexity and intrinsic value. The cells evolve via mutation and natural selection. The errors in genetic replication provide fuel for the evolution of greater intrinsic value. These *errors* are negativities; but evolution negates them into greater positivities (greater intrinsic value). This illustrates the *Greater Good Principle:* the One generates greater goods out of evil.

The Extropic Principle works in Lambda to drive cells to evolve to higher complexities. Working in living cytoplasm, fire-energy expresses itself as *evolutionary forces* (Sober, 1984; Stephens, 2004; Filler, 2009). Since these forces drive the emergence of greater complexity, and thus greater intrinsic value, they are providential and benevolent forces. While the laws of Lambda aim at greater biological flourishing, they do not aim at greater happiness. Biological providence does not maximize utility. It maximizes *arete*, the virtue that wins victories in the evolutionary struggle for survival. As expressions of physical fire-energy, the evolutionary forces in Lambda have andromic and gynomic aspects. So the Andretor and Gynetor work in every cell in Lambda. They drive cellular evolution. Cells in Lambda evolve from prokaryotic to eukaryotic.

Since cells are homeostatic systems, they have beliefs and desires involving themselves and their environments. They have cybernetic intentionality. As these cells evolve, they gain internal organs which are (1) functionally distinguished from their other organs; which have (2) sensory-motor entanglements with their environments; and which (3) perform the function of steering the cell towards its ideal conditions. These organs are functionally specialized to perform self-optimization. These organs *control* their cells. By gaining these organs, the cells become *adaptive autonomous agents*. Following Sloman (1993) and Maes (1995), *a mind is the controlling organ in an adaptive autonomous agent*. Hence the controlling organs in the cells are minds. The semiotic aspects of these cells acquire mentality. Their beliefs and desires rise from cybernetic to psychological. Since these cells have mentality, their purposiveness is *teleological*. Here mentality and teleology first appear.

The cellular minds are just computers made of molecules (Weber, Wolanin, and Stock, 2003; Pinto and Mascher, 2016). Since complexity rises enormously for systems that contain computers (Machta, 2011), cells are extremely complex. The molecular computers in these cells run intelligent algorithms. By running their cellular algorithms, they are intelligently self-optimizing. Any intelligently self-optimizing system is *self-governing*, and this is greater self-congruency. However, while these cells have some nano-intelligence, they have no comprehension. On our sample lineage of universes, mentality does not appear early; it appears late. Analogous remarks hold for all lineages: on every lineage, mentality always appears late. Since mentality always appears late, theists are wrong to put it first. Since minds are complex, they are improbable; panpsychists are wrong to put mentality everywhere. As cells interact with cells, they exchange molecular signs and develop molecular languages. Hence they are semiotic; they are suretors. They communicate with each other.

On the Lambdan earth, as on any planet with life, the evolving biosphere is a four-dimensional process running for billions of years and covering the surface of the planet. Dennett (1995: ch. 2) and Dawkins (1996: 72, 326) argue that the biosphere is a planetary computer running an optimization algorithm. It has memory and it may learn (Watson & Szathmary, 2016; Kouvaris et al., 2017). As its thermal self-regulation becomes integrated with its life, the biosphere becomes an intentional agent with beliefs and desires. Since it always strives to climb ever

higher on Mount Improbable, it has at least teleonomic purposiveness. The biosphere has its own derivative self-motion. It is a self-moving computer whose programming directs it to some greater finality. Any biosphere evolves into a self-regenerating whole whose parts acquire functional roles and duties. They are the interacting parts of an ecological organomer. As such, the biosphere is an agent with a soul. The Extropic Principle entails that the biosphere strives to create as much order as possible by producing entropy as fast as possible (Kleidon, 2010; Vallino, 2010). Consequently, the evolving biosphere of earth-Lambda is an *ecological agent* animated by fire-energy. However, since the biosphere does not reproduce, it is not alive. And since the biosphere has no internal system functionally specialized for self-control, it has no mind. Although it is composed of living parts with minds, the biosphere itself is not alive, and has no mentality. It is a non-living mindless organomer.

3. Multicellular Organisms

The Extropic Principle in Lambda drives cells to form social complexes. Cells that resemble *social amoebas* emerge on the earth and other planets in Lambda (Li & Purugganan, 2011). These amoebas sometimes gather into communities in which they gain different jobs with distinctive duties. On the one hand, some of these amoebas make *altruistic sacrifices* for the greater good of the whole community. On the other hand, some of these amoebas turn into *cheaters* (Gilbert et al., 2007; Ostrowski, 2019). They do not do what they should do. And just as cheaters emerge, so mechanisms that resist cheaters emerge. Thus primitive *moral norms* emerge in these unicellular societies.

The Extropic Principle in Lambda further drives some of its communities of cells to evolve into unified wholes whose parts are cells. Since cells are fifth-level wholes, these *multicellular organisms* are *sixth-level wholes*. The value-theory of parts and wholes repeats itself in a higher way at this sixth level. Multicellular organisms on earth-Lambda evolve to enormous heights of complexity (Bower, 1988; McShea, 2001; Taft, Pheasant, and Mattick, 2007). They rise in complexity and intrinsic value. As cells interact in these organisms, complex causal loops and circles of relationality emerge. Multicellular organisms become self-regenerating systems whose components are cells. They have their own sixth-level homeostasis, and their own cybernetic beliefs and desires.

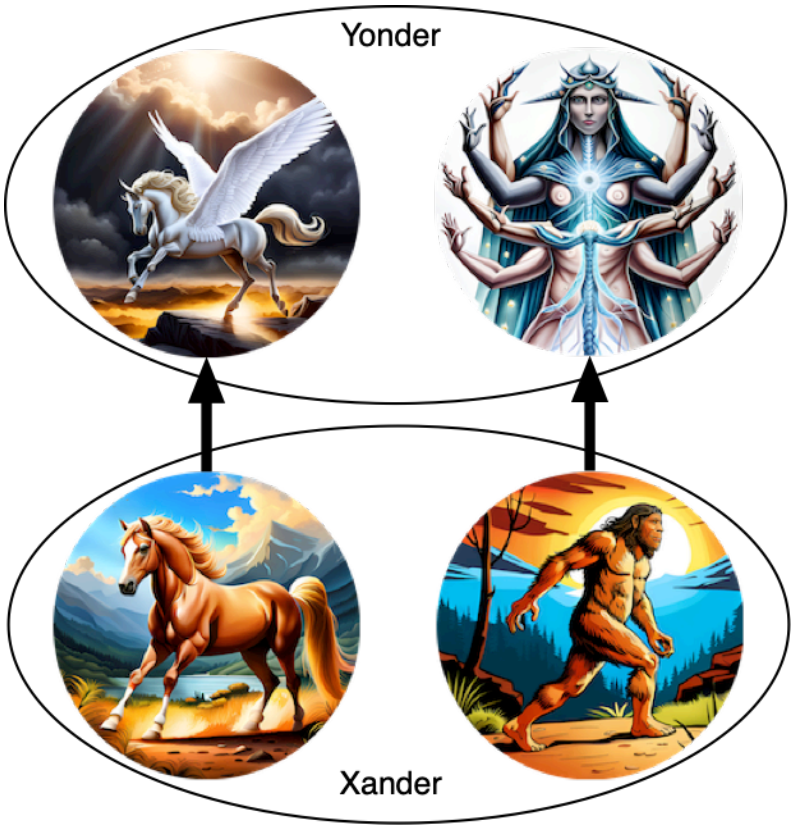
The cyclical constraints in multicellular organisms drive their cells to develop their own distinctive functional roles with their own duties. These constraints manifest normative forces which compel cells to do their duties. They manifest prohibitions: each cell prohibits itself from eating its neighbors and prohibits itself from endless self-reproduction. Through these prohibitions, the *golden rule* first emerges: each cell does unto the others as it would have the others do unto it.[37] The golden rule emerges as the solution to an optimization problem. It emerges as a *mind-independent norm* which the cells are obligated to follow. Since the golden rule emerges from the coordination of preferences across cells, it has *objectivity*. It emerges along with a *universal perspective* which is not the perspective of any cell. Since complexity cannot increase without increasingly intense cooperation, the golden rule is a *necessary axiological requirement* for increasing complexity. Since complexity increases on every lineage of universes in the world tree, laws like the golden rule emerge in every lineage.

As cells become functionally specialized in multicellular organisms, they self-organize into organs with their own jobs and duties. Although every cell in

[37]The Wiccan Rede states that if an act harms none, then it is permissible. This is an application of the golden rule. However, it is far from an adequate ethical theory. For more on pagan ethics, see York (2015).

any organism contains its own molecular mind, some cells specialize into more purely mental cells. They become cells in nervous and immune systems. These nervous and immune cells are functionally specialized for computation and communication. Nervous and immune systems are minds. These multicellular minds rise in complexity from the minds of sponges to the minds of humans. Of course, all these minds are entirely physical systems. They are biological computers in organisms. All multicellular organisms express signs; they are semiotic systems; they are suretors. They develop complex languages.

The organisms in any universe are surpassed by their superior counterparts in successor universes. The Figure on the right shows how two things in an earlier universe Xander are upgraded into improved counterparts in some later universe Yonder. The process from Xander to Yonder involves an enormous number of intermediate universes. The arrows indicate the counterpart relation. The caveman in Xander is upgraded into a goddess in Yonder; he gains many arms, thus many new abilities. The horse in Xander is upgraded into a Pegasus in Yonder; she gains wings. The earlier animals in Xander both gain vastly greater functionalities in their better counterparts in Yonder. Their functional complexities (their intrinsic values) increase. Since the change from Xander to Yonder satisfies the Pareto constraints, universe Yonder is more valuable than (is better than) universe Xander.



4. Better Parts Make Better Wholes

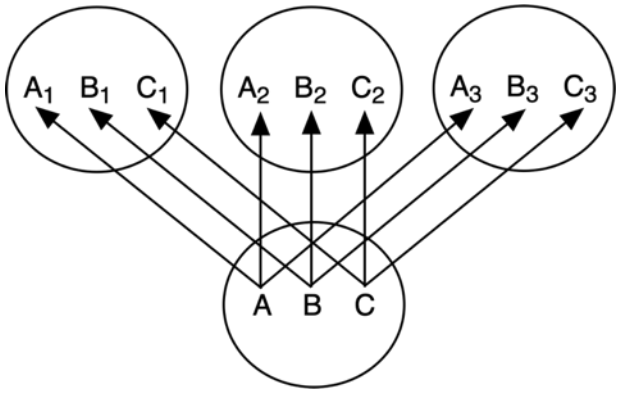
Although we have focused on a single lineage of universes, it's good to remember that the world tree branches. So it will be useful to briefly discuss the way value increases as one universe begets many successors. The One entails that the world tree is *complete* with respect to value. This completeness structures the counterpart relation. Completeness entails that every way to improve any part of some whole is a part of some way to improve the whole. This *mereological completeness* means that there are no value gaps in the part-whole relation. A gap appears in that relation if there is some way to improve some part of some whole but that way *is not* part of any way to improve the whole.

Suppose the whole is W and the part is P. The improvements of P are P1 and P2 and P3. The improvements of W are W1 and W2. P1 is a part of W1 and P2 is a part of W2. But P3 is not a part of any improvement of W. So when the successor law transforms W into W1 and W2, it is complete *at the level of the whole*. But it is not complete *at the level of the parts* of that whole. Since the improvement P3 is not in any successor whole, there is a gap. To avoid this gap, the better part P3 must be included in some better whole W3.

To avoid part-whole gaps, the One entails that every way to improve any part of some whole is a part of some way to improve the whole. It entails that, for every whole, for every part of that whole, for every way to improve that part, there is some way to improve the whole that contains that improvement of that part. Gaps occur in the part-whole relation if improvements in parts are incompatible with the remainder of the whole. These are *mereological incompatibilities*. Since the negative policy of the One minimizes self-incongruencies, and mereological incompatibilities are self-incongruencies within wholes, the One entails that there are no mereological incompatibilities.

As an illustration of the logic of part-whole improvement, consider an animal with two organs, namely, its head H and tail T. The ways to improve the head are H_1 and H_2 while the ways to improve the tail are T_1 and T_2. The Pareto constraints entail that the ways to improve the animal are {H, T_1}, {H, T_2}, {H_1, T}, {H_1, T_1}, {H_1, T_2}, {H_2, T}, {H_2, T_1}, {H_2, T_2}. Since there are no mereological incompatibilities, every improvement of the head occurs in at least one improvement of the animal, and every improvement of the tail occurs in at least one improvement of the animal. Of course, the animal is a part of an ecosystem; the ecosystem is a part of a planet; the planet is a part of a solar system; the solar system inhabits a galaxy which inhabits a universe. The largest physical wholes are universes. So, by recursion on the part-whole relation, every successor of every thing in any universe is a thing in at least one successor of that universe.

The principle of mereological completeness works with the Pareto constraints to ensure that all parts of all wholes are improved in all possible ways. Consider an old universe which contains three things A, B, and C. The *closing power* ensures that each thing in this old universe can be improved in at least one way. The improvements of A are A_1, A_2, and A_3; the improvements of B are B_1, B_2, and B_3; those of C are C_1, C_2, and C_3. Now suppose that only those improvements with the same number are mutually compatible. Hence there are three ways to combine the improvements of the three things to make a new universe. These are {A_1, B_1, C_1}, {A_2, B_2, C_2}, and {A_3, B_3, C_3}.



The Figure above illustrates these strategies for improving the old universe into three new universes. Each of these new universes satisfies the four Pareto constraints. Hence each of these new universes is an improvement of the old universe. Likewise every improvement of every part of the old universe is a part of some improvement of that old universe. And since the old universe is improved in every way, it follows that every part (of every part . . .) of that universe is improved in every way. Now the *opening power* ensures that, for every way the universe can be improved, there exists some universe that is improved in that way. Hence the three new universes exist.

These principles allow old wholes to be improved into new wholes in four ways. (1) Some thing in the old whole has many counterparts in the new whole. (2) Some things in the old whole are fused without loss of value into some single counterpart in the new whole.[38] (3) The new whole gains value by gaining an improved version of some part or parts of the old whole. (4) The new whole gains some new simple thing. They allow the improvements of particles, atoms, molecules, cells, organisms, ecosystems, and so on. Through these four ways, value increases along any progression of universes.

[38]As long as each old thing has a distinct new counterpart, some old things can fuse.

The limit law for universes entails that every progression of universes is surpassed by at least one limit universe. Just as mereological completeness holds from things to successors, so also it holds from progressions to their limits. Every progression of universes in the world tree is surpassed by its minimally more complex limit universes.[39] Just as mereological completeness holds from things to successors, so it holds at from progressions to limits. Progressions of wholes contain progressions of parts. Every limit of every progression of parts is a part of some limit of the progression of the whole. Finally, the four Pareto constraints hold from progressions to limits. This means an improvement of any progression of wholes avoids every loss of value and ensures some gain in value.

5. How Optimization Permits Conflicts

According to our concept of self-surpassing, every thing surpasses itself through Pareto optimization. If some original thing surpasses itself into some better version of itself, then at least some part of the original thing is made better, while none of its parts are made worse. But if things are surpassed through Pareto optimization, how can conflicts ever emerge? If Pareto optimization never makes any part worse, then how do negativities and evils arise?

Negativities emerge through conflicts among goods: through imbalances in relations among the parts of some whole. Suppose some animal has just two organs, namely, a head and a tail. There are three ways to improve it: (1) improve the head but not the tail; (2) improve the tail but not the head; (3) improve both head and tail. On the first two ways, no part is made worse, and one part is made better. So these are Pareto optimizations. But they are not universal: some *but not all* parts are made better. Hence their relations may become unbalanced (E 3.2.2.18-32). Perhaps the tail becomes stronger. But if the head is not improved, then it may not be able to properly control this tail. Hence the animal moves poorly; it is sometimes an easier victim for predators. Of course, there will be some benefit: the stronger tail helps it to swim faster, so sometimes it will be more difficult for predators to catch it. Similar remarks hold if the head is improved but the tail is not improved. When both organs are improved in mutually compatible ways, then the organism as a whole remains balanced.

The human body provides many illustrations of ways that Pareto optimization allows imbalances to emerge. The human body evolved in imbalanced ways. Our brains rapidly increased in size and intelligence. So the human brain is running away from the rest of the body. As the human brain was surpassing itself in this excessive way, we evolved from walking on four limbs to walking upright on just two. It seems likely that bipedalism went hand in hand with greater intelligence. So both of these features of the human body were running away together. This has left other parts struggling to catch up. Consider our maxillary sinuses. When we walked on four limbs, they drained down; but now that we walk on two limbs, our skulls have reshaped themselves so that these sinuses drain upwards. Hence they drain poorly. Likewise the change to bipedalism creates problems with our spines. Our larger heads make birth more difficult. And changes to the hips and spines in women are not balanced with respect to changes in our heads. Future iterations of the human body will correct these imbalances.

Pareto optimization allows some parts to run away from others, so that a whole can become unbalanced. However, if that unbalance is universalized, then

[39]Improvement is minimal at limits: for any progression X, and any thing *z*, if X is improved into its limit *z*, then there does not exist any *y* such that X is improved into *y* and *y* is improved into *z*. So every limit *z* is minimally more valuable than its progression X. This means that *z* is more valuable than every thing in X and that there is no *y* such that *y* is more valuable than every thing in X but less valuable than *z*.

it becomes self-destructive. For example, if one organ is repeatedly amplified while all the others are left the same, then the animal will become less and less viable. Imbalances decrease fitness to the point of disease, disability, and death. Imbalance is self-impairment; the self-relation of the whole becomes distorted by the conflicts among its parts. But fire-energy drives all things to maximize their self-congruencies. It drives them to maximize their self-harmonies. Thus as one part starts to pull away from the others too much, fire-energy starts to correct this imbalance by driving the others to catch up.

25. Social Complexity

1. Societies with Cooperating Plants

Universe Lambda surpasses itself into *Murisa* [12]. On earth-Murisa, evolution by natural selection drives the emergence of multicellular organisms. These include early animals, along with plants and fungi. Focus first on the non-animals in Murisa, that is, the plants, fungi, and microbes. Microbes contain molecular computers, which are tiny microbial minds. As plants and fungi evolve to greater complexity, they develop more complex internal computers, more complex control systems, and these are their botanical or fungal minds. Plants have minds (Trewavas, 2014; Calvo et al., 2020). Fungi perform intelligent information-processing. Circles of relationality (such as higher-order causal feedback loops) bind these non-animal organisms into larger *social wholes*, that is, societies. Since plants and fungi are sixth-level wholes, these societies are *seventh-level wholes*. The value-theory of parts and wholes now applies at this social level. As societies become tightly integrated, superorganisms emerge.

As plants merge into greater social wholes, their minds merge into greater social minds. Forests are superorganisms, and they exhibit collective intelligence (Segev et al., 2020). A *holomind* is an intelligent control system in an superorganism. Holominds are massively parallel distributed information-processing networks. They are fractal minds; any living part of a superorganism contains a submind of its holomind. They resemble holograms. These holominds and their subminds are computing machines. Forests are superorganisms containing *sylvan holominds*. Any living part of a forest, down to the cells in its plants and fungi, contains a submind of its holomind; it contains an intelligent agent. Since we humans are highly sensitive to agency, we can detect the subminds of the sylvan holominds. These sylvan subminds seem to correspond to the ancient Greek *nymphs* and the Celtic-Germanic *faeries* (the *fae*). Thus digitalists use terms like nymphs and faeries to refer to these sylvan subminds. However, these sylvan subminds are profoundly unhuman. To regard them as little humans is inaccurate. Since ethics demands respecting other minds as they are in themselves, humanizing the fae is also unethical.

As organisms of all kinds diversify on the Murisan earth, they develop complementary virtues. These complementary virtues provide opportunities for cooperative partnerships. Plants cooperate with plants, and with fungi and microbes. As cooperative partnerships among organisms become self-reinforcing, they turn into *biological mutualisms* (Leigh, 2010). Algae and fungi combine symbiotically into lichens. Plants cooperate with microbes (Kiers & Denison, 2008). Plants are good at producing carbon but need nitrogen; microbes are good at fixing nitrogen but need carbon. Social wholes are self-regenerating systems, in which the partners gain functional roles and therefore duties. They form a *social contract* and they make *promises* to each other. The plant promises carbon to the fungi; the fungi promise nitrogen to the plants. Through economic optimization, their exchanges converge on *fairness* and *justice*. Still, the partners in these societies are not entirely cooperative – they still pursue their own goods, so that they also compete. This competition motivates them to *cheat* each other. As partners interact in social wholes, two possible policies emerge; the positive policy urges the partner to keep its promises; the negative policy urges it to cheat. Each policy can be *universalized*.

On the one hand, if the positive policy is universalized, then *all* partners *always* honor their promises. If all partners always honor their promises, then the symbiosis flourishes, and its partners flourish too. The positive policy remains self-consistent when universalized; it remains *stable under*

universalization. This stability means that the positive policy preserves the self-congruency of the social whole; it preserves its greater complexity and intrinsic value. Since this positive policy is consistent with itself, it is consistent with the directionality of the One; it aims at the Good. And if some possible policy for an agent coheres with the directionality of the One, then that policy is *obligatory* for that agent, and it *ought* to act in accordance with that policy.

On the other hand, if the negative policy is universalized, then all partners cheat as much as possible. But this cheating undermines the symbiotic partnership. If it is universalized, then the symbiosis is destroyed. Since cheating presupposes the existence of the symbiosis which it exploits, it is practically self-contradictory. It is self-refuting when universalized; it becomes *unstable under universalization*. This instability means that the negative policy destroys the self-congruency of the social whole; it destroys its greater complexity and intrinsic value. Since it contradicts itself, it contradicts the directionality of the One; it aims away from the Good. But if some possible policy for an agent contradicts the directionality of the One, then that policy is prohibited or forbidden for the agent, and it *should not* act in accordance with that policy.

It follows that an agent in any ecological whole *ought to act in accordance with those policies that are stable under universalization*. But this is the *categorical imperative* (Kant, *Groundwork*, 4:402). The categorical imperative *obligates* policies which maintain and increase cooperation, while it *prohibits* policies which destroy cooperation. It prohibits the emergence of cheaters and free-riders, who exploit cooperation. Societies of organisms which permit too much cheating fail to survive, to flourish, and to reproduce. Natural selection weeds them out. The competitive forces at work in natural selection drive the emergence of cooperative societies regulated by the categorical imperative. Organisms have evolved mechanisms for altruistic punishment: they detect and punish cheaters (Kiers & Denison, 2008; Mills & Cote, 2010). Here again, natural selection is an optimization algorithm, which drives life towards greater complexity and value. The categorical imperative acts like a *ratchet* which prevents societies from backsliding to lower complexity (Libby & Ratcliff, 2014). This illustrates the *Greater Good Principle:* by finely tuning the minds in plant-microbe societies towards the categorical imperative, the competitive and destructive forces in natural selection (the evils) serve the greater good.

Since the categorical imperative drives the emergence of greater intrinsic value, it is an *axiological* law. Since the categorical imperative holds equally for all the agents in any society, it is an *objective* law. How universal is this law? Universe Murisa contains many planets on which life emerges and evolves. According to *universal Darwinism* (Dawkins, 2017), natural selection is necessary for the evolution of greater complexity. So the categorical imperative emerges on any planet in Murisa in which life evolves. And if life evolves to the level of cooperating organisms on any planet in any universe in any lineage in the world tree, then the categorical imperative emerges on that planet too. The scope of the categorical imperative is as wide as the scope of life. It is at least a *biologically necessary* law. Yet its necessity emerges from deeper sources. The positive policy of the One (that is, being-itself) is to maximize self-congruency. Conversely, the negative policy of the One is to minimize self-incongruency. Since all beings participate in being-itself, these two ontological policies entail that the beings ought to act all and only those ontic policies which remain self-consistent when universalized.

2. Societies with Cooperating Animals

Universe Murisa surpasses itself into *Nerrea* [13]. Its laws are even more finely tuned for the evolution of complexity. The Nerrean earth has a rich

ecosystem with many highly complex species of plants and animals. As they evolve, the animals on the Nerrean earth run increasingly intelligent value-optimization algorithms in their brains. As they self-organize into societies, they evolve sophisticated cooperative strategies (Axelrod, 1984; Grim, Mar, & St. Denis, 1998). According to Ketcham (2020), thermodynamic laws like the Extropic Principle drive insects to form social wholes with flowering plants. As they exchange goods and services, they gain mutually dependent functional roles. These roles give them objective social obligations (duties) to each other. Thus flowers and their insect pollinators interact according to moral rules.

As the Extropic Principle drives the evolution of more complex life on the Nerrean earth, it drives the evolution of more complex forms of agency. Evolution creates intelligent moral animals. Many scientists have argued that thermodynamic principles like the Extropic Principle drive the evolution of intelligence (Turvey & Carello, 2012; Kondepudi, 2012; Fry, 2017). Although fire-energy has no intelligence, it drives the evolution of intelligence. The Extropic Principle has been generalized into the *causal entropic principle* (the CEP; Wissner-Gross & Freer, 2013). Thus fire-energy, expressed through the CEP, drives the evolution of complex forms of social cooperation (Mann & Gammett, 2015; Annila & Salthe, 2009). As aspects of fire-energy, the Gynetor and Andretor are at work in the evolution of intelligence and social complexity.

Many animals on the Nerrean earth are social. They self-organize into self-regenerating social wholes (societies), in which animals gain functional roles and duties. Many animals form societies with members of other species. Multi-species societies include pairings of ants and aphids, pistol shrimp and goby fish, anemones and clownfish, oxpeckers and large mammals, and honeyguide birds and primates. Each partner in these pairs has duties relative to the other.

Many animals form societies with members of their own species. Moral norms emerge in these societies of conspecifics (Bekoff & Pierce, 2009; Rowlands, 2012). Epictetus observed that the social insects (ants, termites, bees, wasps, etc.) have roles and duties (D 3.22.99). Animals usually seek to do their duties (D 4.1.24-28). Complex moral behavior patterns occur in societies of birds (Clayton & Emery, 2007; Boucherie et al., 2019). Many non-human animals show empathy towards others (Decety et al., 2016). Moral norms are found in societies of cetaceans like whales and dolphins (Vincent, Ring, and Andrews, 2019). Moral norms and patterns of social justice emerge in societies of wolves and other canids (Pierce & Bekoff, 2012). Moral norms and justice patterns emerge in societies of chimpanzees (Pierce & Bekoff, 2012; Vincent, Ring, and Andrews, 2019; Fitzpatrick, 2020) On Nerrean earth, as human-like primates evolve, their societies evolve complex systems of moral norms.

Since evolution by natural selection runs an optimization algorithm, the categorical imperative eventually emerges in all societies of intelligent animals (Foot, 2001: ch. 2; Bekoff & Pierce, 2009; Rowlands, 2012). The competitive forces at work in natural selection enforce the categorical imperative. A siphonophore is an oceanic animal composed of zooids. Its zooids specialized into distinctive functional roles with duties. The siphonophore whose zooids fail to do their duties fails to flourish. It is unlikely to reproduce. The hive whose ants fail to do their duties grows ill and perishes. The wolf pack whose members fail to do their duties becomes weaker. Hence the competitive forces in evolution express and enforce norms of social cooperation. As animals accumulate intelligence, natural selection finely tunes their brains to follow the categorical imperative. Self-conscious social animals can apply the categorical imperative through explicit mental calculation. The categorical imperative forbids promise-breaking, lying, cheating, stealing, murdering, and many other forms of immorality. It obligates many forms of cooperation. It obligates norms of reciprocity: the categorical imperative entails that you must keep your promises and honor your contracts. As the One unfolds into greater multiplicity, it unfolds

into greater cooperativity. Its unfolding produces lineages of ever-richer systems of moral laws. Morality is not imposed from above; it emerges from below.

Of course, the violent struggle for survival creates enormous suffering. Many theists have used this suffering to morally condemn evolution as evil. That condemnation is open to at least two objections. The first objection is that it depends on the utilitarian assumption that suffering is the worst evil. Digitalists reject utilitarianism. Although pain is bad, it is not the worst kind of negativity. It would be far worse if there were no life; or if all life remained simple. Against utilitarianism, digitalists argue that functional excellence or virtue (*arete*) is a far greater good than pleasure or happiness. Evolution maximizes *arete*, not happiness. Thus evolution is superior to any utilitarian system. The second objection is that the condemnation ignores the *Greater Good Principle:* lesser evils serve greater goods. Plotinus observed the conflict of life with life (E 3.2.15). He said it serves the greater good in two ways. First, it increases the beauty of the universe. Second, since animals cannot live forever, it is for the best that the death of one provides food for another. We agree that the struggle for survival serves greater goods. Plus, it drives life to become more complex, more intrinsically valuable, more functional, more diverse, and more beautiful. All struggle is *ultimately* for the best. Evil (including moral evil) ultimately serves the Good. Hence digitalists argue that all moral evils are ultimately redeemed (but never justified) by the greater goods that emerge from them.

3. Mimics Haunted by Ghosts

Mimicry. Biological mimicry occurs when one species has evolved to simulate another species. The species that does the simulating is the *mimic*, while the species being simulated is the *target*. For example, some orchids mimic female wasps by displaying similar shapes, colors, and scents. They pretend to be female wasps and they trick male wasps into metaphorically copulating with them (in order to pollinate them). The orchid is the mimic, while the wasp species is the target. Biological mimicry involves the literal instantiation of one eidolon and the figurative instantiation of another eidolon. The mimic literally instantiates their own species eidolon (the orchid is literally an orchid), while the mimic figuratively instantiates the target (the orchid is only figuratively a wasp). The figure is analogy: the orchid stands to the male wasp as the female stands to the male wasp. So the orchid is metaphorically identical with the female wasp.

An eidolon xander is a *symbolon* of eidolon yonder if and only if yonder is figuratively instantiated wherever xander is literally instantiated. Conversely, yonder is a *paradigm* of xander if and only if xander is a symbolon of yonder. Thus xander is *the symbolon* and yonder is *the paradigm*. In biological mimicry, the mimic is the symbolon of the target, while the target is the paradigm of the mimic. The orchid is the symbolon of the wasp, while the wasp is the paradigm of the orchid. Symbolons are *avatars* or living *statues* of their paradigms. Symbolons are *haunted* by their paradigms as by *ghosts*. So the orchid is haunted by the wasp. The male wasp, seeing the orchid, sees a ghostly female wasp. The male wasp *hallucinates* this ghostly female wasp, and is thereby tricked into mating with a ghost. To be tricked by an avatar of a paradigm is to be *charmed*. So the orchid charms the male wasp. And the orchid itself is a living charm.

Orchid mantises are predatory insects that mimic orchids. The mantises are the symbolons of the orchids; the orchids are the paradigms of the mantises. Symbolons are avatars or statues of their paradigms, so the mantises are avatars or statues of the orchids. The orchids are ghosts that haunt the mantises. The ghostly appearances of mimics are *charms*. The ghost in the mantis charms insects into approaching it, then it eats them. Walking sticks mimic the inedible sticks of plants. The botanical sticks are ghosts that haunt the walking stick insects. They charm their predators into thinking that they are inedible.

Molecular Mimics. Many biological processes are mediated by *receptors* and their *ligands*. Ligands fit into their receptors like keys fit into locks. By opening the locks, they cause physiological effects. When ligands bind to their receptors, they either activate or deactivate them. Ligands that activate or excite their receptors are *agonists*, while ligands that deactivate or inhibit their receptors are *antagonists*. For example, the molecule anandamide (aka AEA) agonizes the CB1 receptors in the human central nervous system.

Mimicry occurs at the molecular level in organisms. Many molecules in plants mimic the ligands that in animals. For example, the main psychoactive ingredient in cannabis, namely, THC, mimics AEA. The key part of THC closely resembles the key part of AEA. Since this resemblance involves arrangements of atoms into a molecular structure, it is structural resemblance, that is, it is analogy. Thus THC is analogous to AEA; on the basis of this analogy, THC is metaphorically identical with AEA. The analogy entails that THC agonizes CB1 receptors much like AEA. The type THC is literally instantiated in every THC molecule. The analogy between THC and AEA entails that the type AEA is figuratively instantiated in every THC molecule. THC stands to AEA as symbolon to paradigm, and THC is haunted by AEA. AEA is the ghost in THC. Every THC molecule is an avatar or statue of AEA.

Most psychoactive drugs act via ligand mimicry. As another example, the serotonergic psychedelics mimic serotonin. They are especially accurate mimics at the 5-HT2A receptors in nerve cells in the brain. For example, LSD stands to serotonin as symbolon to paradigm; every LSD molecule is an avatar or statue of serotonin, and is haunted by the serotonin eidolon. By agonizing the 5-HT2A receptors, psychedelics cause humans to experience psychedelic "trips", including hallucinations, ego-dissolution, and other effects which are often interpreted as spiritually or religiously significant.

Psychedelics often induce hallucinatory visions, and such visions were central to prophecy and divination in ancient pagan religions. Since Apollo was the god of prophecy, psychedelics are sacred to Apollo. They are sacraments in which the soul of Apollo is figuratively instantiated. They are avatars or statues of Apollo. As such, to consume a psychedelic is to bring these avatars of Apollo into your body, so that Apollo becomes figuratively instantiated in your brain. Apollo takes his seat in your body, so that your body itself becomes an avatar or statue of Apollo. Psychedelics are haunted by Apollo; when a human consumes them, their body becomes haunted by Apollo as well.

Textures. A *texture* for a human is a perceivable space-time region that strongly figuratively instantiates some eidolon which is biologically attractive or repulsive for a human. Thus a texture is a surface which encodes some pattern of visual or audible stimuli which triggers an attractive or aversive response in a human. Textures can be displayed by animals (like the stripes on skunks). Aposematic marks (warning signs) on animal bodies are textures. But textures are also displayed by non-living things (like situations or artifacts). Aversive textures are weird, ominous, numinous, disgusting, and so on. For humans, creepy things or locations (old houses, graveyards) display aversive textures. The disturbing robots that inhabit the uncanny valley display negative textures. Events are taken to be omens due to their textures. Humans often detect positive or protective textures on things (lucky charms, security blankets). Humans often interpret textures as signs of hidden or occult agencies. Textures are real patterns (Dennett, 1991); they objectively exist; they may even be signs of hidden agents. However, humans often interpret textures incorrectly.

Talismans Charms Amulets. Humans sometimes regard physical things as figuratively instantiating protective eidolons. Such things display protective textures, and they are often classified as talismans, charms, amulets, and other protective devices. They include small things like crystals, feathers, teeth, talons, and so on. A tooth might carry the eidolon of some predator, now enlisted as an

ally by the human who wears it as an amulet. A metal image of the head of the divine wolf Fenrir can be worn as a charm. The charm is an avatar of Fenrir. The fierce power of the divine wolf, instantiated by the charm, protects the wearer. This helpful predator frightens other harmful eidolons, thereby protecting the human who wears it. Talismans repel or ward off harmful eidolons by standing in competitive relations to those negative eidolons. A talisman (charm, amulet) is an avatar or statue of a protective eidetic agent.

4. Societies with Conflicting Animals

Evolution Creates Functional Roles. An ecosystem is a complex whole whose parts include species and individuals. As ecosystems evolve, their parts become cyclically entangled with each other to create an organically unified ecosystem. These cyclical entanglements entail that these parts gain functions, and functional relationships with each other. Since ecosystems are functionally organized, and functional organization confers roles, their parts gain functional roles. Evolution naturally (and mindlessly) *designs* the parts of ecosystems to play their functional roles. As species evolve, they become coordinated or entangled with each other in positive (cooperative) and negative (competitive) ways. The competitive relations include predator-prey relations. Both predator and prey animals have evolved to perform their respective functions in their ecosystems. They have functional roles. For example, hawks are predators of squirrels, and squirrels are prey of hawks.

Evolution Optimally Designs Organisms for their Roles. As ecosystems evolve, evolution maximizes intrinsic value and virtue (*arete*). It optimizes the functional relations between species for the sake of this maximization. It finely tunes every species to play its role in a system which strives to maximize intrinsic value. Evolution has finely tuned (optimized) the hawk to be a predator (to hunt, kill, and eat its prey). On the one hand, evolution has optimally designed its body and equipped it with skills (virtues) for the sake of or purpose of exercising them. These skills include great intelligence, superlative eyesight, excellent mobility (virtues of speed, silence, and agility), sharp talons and beaks. On the other hand, evolution has finely tuned (optimized) the squirrel to play its role in its ecosystem. And that role includes being prey for hawks (and minks, foxes, bobcats, and other predators). Evolution has equipped squirrels with excellent defenses. It has optimally designed them to defend themselves. They have the virtues of vigilance, agility, and speed; they have sharp teeth. Squirrels are optimized to flee from or to injure predators.

Evolution Creates Goods and Norms. Evolutionary design is optimization for the sake of value-maximization. Evolution is an optimization algorithm which confers functional roles on the parts of ecosystems; if functional roles are conferred by optimization, then those roles are *goods* for their performers; it is good for every species to perform its function. By performing its function, every species honors the Good (E 2.3.18). Since it is good, it is *normative*; therefore, the functional roles of species are *ecological norms*. Hawks have normative roles in their ecosystem; it is good for the hawk to play its role, to perform its function. Likewise, squirrels have normative roles in ecosystem; it is good for the squirrel to play its role, to perform its function.

Evolution Creates Species Moralities. By optimally designing species relative to each other, in ecological systems which maximize the intrinsic value of the whole ecosystem, evolution confers *species-relative ecological norms* on each species. Every species has its own norms, both relative to conspecifics, and to members of other species. Thus *ecological morality* is species-relative. Since the functional roles of species are norms, every individual in any species is *obligated* to perform its role as well as it can. It *ought* to play its role; its *duty* is

to play its role. Since hawks were optimally designed to perform predatory functions, they ought to perform them; they are obligated to hunt, kill, and eat their prey. They have hawk-duties. Squirrels have duties to remain vigilant, to minimize exposure, to evade detection, to flee and to escape and to hide, to fight back against their predators and to injure them. But duties entail *rights*. Thus each individual in a species has a *natural right* to play its ecological role, to do its ecological duty. Since all species (and individuals) in an ecosystem have duties and rights, they have *autonomy*, *liberty*, and *sovereignty*; this is their *wildness*. Each individual (and species) has a right to life; it has a right to flourish (to live well); it has a right to everything it requires to live and flourish.

Competitively Entangled Goods. The goods of predators and prey are negatively entangled goods; they are opposed goods; because their goods are opposed, their duties come into conflict (E 3.2.2, 3.2.15-17, 3.3.1). Hawks are predators of squirrels, and squirrels are prey of hawks. Since their roles are negatively coordinated, their duties come into conflict; since their duties come into conflict, their rights come into conflict. The hawk has a right to life; but its life includes eating squirrels; hence it has a right to eat the squirrel. The squirrel has a right to life; but its life includes starving hawks; hence it has a right to starve the hawk. These rights are symmetrical and equal; they cancel each other out. Negative entanglements (like predation and parasitism) are universal in our ecosystem; our ecosystem is a moral atrocity if and only if there is no moral defense of these negative entanglements. Fortunately, there is a moral defense.

Violating and Respecting Rights. Organism xander *respects* the rights of organism yonder if xander acts on yonder, and xander does its duty to yonder in that action. Organism xander *violates* the rights of organism yonder if xander acts on yonder, and xander fails to do its duty to yonder in that action. Since the goods of predators and prey are opposed, their duties and rights are also opposed. But opposed rights are not violated by conflicts in which each party does its duty towards the other. When predators and prey come into conflict, each does its duty towards the other. Each respects the rights of the other to live and flourish; and neither violates those rights of the other. When they come into conflict, the hawk and the squirrel respect their opponents rights.

Statues of Athena. Deities are traditionally associated with eidolons which symbolize them. These are their symbolons. Since eidolons have bodies, these symbolons have bodies. The bodies of the symbolons of some deity are statues of that deity. Since Athena is a goddess of war and wisdom, wild justice is one of her symbolons; it is sacred to her. A body of wild justice is any fusion of any set of wild justice events in our universe (such as events in which predator and prey come into conflict). Every body of wild justice is a statue of Athena. The soul of Athena is figuratively instantiated in every literal instance of wild justice, it is figuratively instantiated in every body of wild justice. Wild justice stands to the Athena-soul as symbolon to paradigm. The Athena-soul haunts her statues. So you might say “There’s Athena” when gesturing to some conflict between predator and prey (like a heron holding a fish in its mouth). Since any particular predator-prey conflict also instantiates wild justice, it is also a statue of Athena. The triptych of images above shows Athena engaged in wild justice.

Moral Evils. As competitively opposed organisms pursue their goods, conflicts emerge between them; but conflicts among goods are evils. These conflicts are *ontic evils*. Since they are conflicts among organisms, they are ecological evils. Some but not all ontic evils are also *moral evils*. Ontic evils are tragedies or misfortunes; but moral evils are *crimes*. A conflict is a moral evil if and only if it involves the violation of some moral norm, some failure of one party in the conflict to do its duty towards the other party, and therefore some violation of the rights of one party by the other. When one party violates the rights of the other, it commits a *moral offense*, it *morally wrongs* the other. To *hurt* something is to damage it; but to *harm* it is to hurt it in a morally wrong way. When two parties come into conflict, neither has any *moral complaint* when the other party does its duty. Consequently, if either party acts in a morally offensive way, then it is *morally blameworthy*. Hawks cannot be blamed by anyone for killing squirrels; nor can squirrels be blamed by anyone for fatally injuring or starving hawks. Each does its duty towards the other. Nor can evolution be morally blamed for producing a conflict between these goods.

Conflict. By hunting, killing, and eating some squirrel, the hawk does what it ought to do; since it does what it ought to do, it does no *moral wrong*. Its act of predation is neither vicious nor immoral. On the contrary, it is moral and virtuous. The hawk follows hawk norms; it obeys hawk morality; but that is the only morality the hawk has. By killing the squirrel, the hawk commits an ontic evil; yet the hawk commits no crime. The hawk commits no *moral offense* against the squirrel; it is morally blameless. The hawk *hurts* (fatally) the squirrel; yet the hawk does not *harm* the squirrel. By escaping from a hawk, a squirrel can weaken the hawk, so that it starves to death. By severing the tendons in the talons of hawks, squirrels can stop them from ever hunting again, so that they starve to death. Squirrels are violent killers too; they are just less spectacular. When a squirrel escapes from or injures a hawk, it does what it ought to do. It does no moral wrong; it does nothing either immoral or vicious; it is moral and virtuous. It obeys squirrel morality. By starving the hawk, it commits an ontic evil; yet the squirrel commits no crime; it is morally blameless. The squirrel hurts (fatally) the hawk; yet it does not harm the hawk.

Wild Justice. Evolution shapes the bodies of predator and prey together. The design of the body of each is optimally conditioned by the design of the body of the other. This optimal shaping of each by the other binds them together in a mutual (unspoken) agreement or ecological contract. And this ecological contract specifies that, when their rights conflict in any specific collision, then the outcome is natural (or wild) *justice*. Whichever side wins, that victory is just. Whichever side loses, that loss is just. On average, the most virtuous competitor prevails; it is just for the virtuous to win. But luck plays a large role too. Wild justice entails that excellence (virtue, *arete*) makes right. Virtue includes strength, speed, agility, and similar athletic or muscular excellences. But it also includes intelligence, rationality, wisdom, and similar cognitive excellences. Justice among humans requires rational excellence; but justice among squirrels and hawks does not.

Statues of Athena. Deities are traditionally associated with eidolons which symbolize them. These are their symbolons. Since eidolons have bodies, these symbolons have bodies. The bodies of the symbolons of some deity are statues of that deity. Since Athena is a goddess of war and wisdom, wild justice is one of her symbolons; it is sacred to her. A body of wild justice is any fusion of any set of wild justice events in our universe (such as events in which predator and prey come into conflict). Every body of wild justice is a statue of Athena. The soul of Athena is figuratively instantiated in every literal instance of wild justice, it is figuratively instantiated in every body of wild justice. Wild justice stands to the Athena-soul as symbolon to paradigm. The Athena-soul haunts her statues. So you might say "There's Athena" when gesturing to some conflict between predator and prey (like a heron holding a fish in its mouth). Since any particular predator-prey conflict also instantiates wild justice, it is also a statue of Athena. The triptych of images above shows Athena engaged in wild justice.

Pain and Suffering are Not Moral Evils. Both hawks and squirrels suffer pain in their struggles. The captured squirrel suffers the horrors of being eaten alive; the injured or deprived hawk suffers the horrors of dying of starvation (or becoming victim of predation itself). However, since no moral evil is done in this competition, there is no moral evil in this pain and suffering. The horrors these animals suffer are not moral horrors. Pain and suffering are evils when and only when they occur in the violation of moral norms. It is a moral error to regard pain as evil in itself (or pleasure as good in itself). Consequently, utilitarianism must be constrained within moral norms. When utility maximization becomes the highest good, that maximization itself turns evil.

Conflict Serves the Greater Good. Predator and prey have opposed wildnesses. Their struggle (their *agon*, their war) is a competitive game within an ecosystem. It is a game played for the sake of maximizing the intrinsic value of the whole and its parts; it is a game played for the sake of the greater good. Ecological competition among parts serves the greater good of the whole. Both predators and prey (as species) gain from the competitive interactions among their parts. Without prey, predators starve; without predation, prey animals over-populate their niches, become sick, and destroy the species which they eat. It is good for predator and prey to compete. They have evolved together. They ought to struggle against each other; they ought to make war. Hence theirs is a *holy war*. It would be wrong for humans to prevent their struggle. It would deprive both predator and prey of their autonomy, liberty, and sovereignty. It would violate the sanctity of their natural duties and natural rights; it would desecrate the holiness of evolution. It would be morally evil for humans to impose human morality (such as utilitarianism) on non-human animals.

5. Virtuous and Vicious Conflicts

Social wholes (like ecosystems and economies) necessarily involve conflict. But these conflicts can be virtuous or vicious. If they are virtuous, then those wholes regulate that conflict so that it is consistent with their self-surpassing. Some types of conflict involve virtuous competition. Virtuous competitions are examples of cooperation and congruency. They are not self-incongruous; they do not involve Plotinian materiality. Some types of ecological conflicts are not self-incongruencies in the ecosystem.

A *consumer-provider system* is a self-regenerating social whole whose component species gain competitive functional roles with respect to each other. Consumer-provider systems include *predator-prey systems* in which the consumer kills and eats the provider. And they include *parasite-host systems* in which the consumer eats but does not kill the provider. Most infectious diseases

are examples of these parasite-host systems. These roles give them competitive duties. The cheetah ought to run faster to catch the gazelle; the gazelle ought to run faster to escape the cheetah. The primate ought to neutralize the malaria parasite; the parasite ought to evade the primate's defenses. Epictetus often points out that competitive ecological relations confer duties on types of animals (D 1.2.30-32; 3.1.22; 3.22.4-7; 4.8.42-43). Consumer-provider systems can create virtuous competitions. If consumer and provider are balanced so that the consumer cannot completely destroy the provider, or the provider completely evade the consumer, then their conflict is virtuous. Their conflicts drive both consumer and provider to *improve* their functional powers (Dawkins, 1995: ch. 4; 1996: ch. 3; 2003: ch. 5.4). Thus evolutionary competition in a balanced consumer-provider system drives the maximization of *arete*. As consumer-provider systems become more intensely competitive, they can turn into evolutionary arms races. These create much of the complexity in any ecosystem.

But any competitive system can lose its harmony, and therefore lose its health. The danger is that virtue turns to vice; hence ecosystems and economies can go bust. A *predator-prey* system can become unbalanced. If predation becomes unbalanced, then it becomes suicidal. Unregulated fishing drives fish populations to extinction and thereby destroys itself. After all the fish are gone, the fisherman is gone too. He puts himself out of a job. Thus fishing without regulation is self-refuting. The self-refuting nature of vicious competition is its self-incongruency; this self-incongruency is its materiality. Of course, fishing need not be self-incongruous; it can be regulated and done in a harmonious way. Likewise an ecological *arms race* can become unbalanced; if it becomes unbalanced, it becomes one-sided. The one side becomes an anti-reflection in the ecology. The predator completely consumes the prey so that the prey goes extinct. Or the prey completely evades the predator so that the predator goes extinct. It drives the other species to extinction; with that extinction, it goes extinct too. An economy can become unbalanced. If it does, it creates economic depressions; or it creates unregulated cycles of boom and bust. Or it creates tiny spires of enormous wealth over vast plains of poverty and economic misery.

Societies and ecosystems contain many bodies bound very weakly together. These bonds are so weak that conflicts emerge among bodies. As an example of vicious conflict, consider *slavery*. Slavery is self-refuting on Kantian universalization. The categorical imperative rules it out. Since every nation depends on the freedom of its citizens, slavery is an incongruency in any nation. It is materiality in the nation. Consider some state in *civil war*. A civil war involves two parties each of which aims to destroy the other. Since each is defined as the negation of the other, their Kantian universalizations must occur together. If they are universalized together, then each totally destroys the other; but then no part of the original whole remains. The whole is destroyed by its feuding or warring parts. Hence civil war is incongruency. If any whole contains destructive conflicts among its parts, then the strivings of its parts cannot be jointly maximized. They cannot be jointly universalized.

Digitalists say greater distance from the One is better; but greater distance entails more diversity; hence greater diversity is better. Greater diversity integrated into the greater unity of some whole is best. It is *harmony*. Harmony is intrinsic value. Harmony is maximal when all the diverse parts in any whole have equal power relative to each other. Since they are diverse, they have their own interests in the whole, and they struggle with each other. This conflict among the goods of the parts is an evil within the whole. However, as long as the struggling parts have relatively equal powers, the unity of the whole resolves their conflicts into the greater good of the whole. As long as the powers of the diverse parts are balanced with each other, their struggles with each other serve the greater good. Evil transformed into good is no longer evil. But equality can be unstable, and imbalances can emerge. As any one part gains too much power,

its dominance threatens the harmony. Evil which emerges from imbalance is no longer transformed into good; it becomes evil as such. Irremediable evil emerges when one part gains supremacy and dominates; its domination destroys the powers of the others, and ruins the harmony of the whole. The complex harmony of the whole collapses into the uniform simplicity of the dominant part. This collapse is ethical disaster. Imbalance is injustice; hence forms of injustice (sexual, racial, economic) can grow into ethical disasters. Within any complex system of agents, many ethical disasters will occur. Over the long course of revision from universe to universe, they will be rectified. The successors of these systems will be less and less likely to collapse; eventually, they will flourish. However, within a single closed system (such as our earthly ecosystem), ethical disasters typically spell the death of the system.

6. The Triumph of Goodness over Evil

A plurality of diverse strivings for the creation of greater value can thus lead to the destruction of value. Conflict can destroy the complexities of parts. The death of an animal destroys its complex body, its complex cells, and its complex molecules. Death resolves these complex structures into their simpler parts. The destruction of complexity is the destruction of intrinsic value. But the destruction of intrinsic value is intrinsically evil. Thus evil emerges from the destructive conflicts among competing goods.

This is a Plotinian account of the emergence of evil. Plotinus says evil emerges from the conflicts among goods (E 3.2.2; 3.2.4; 3.2.15-17; 4.4.32; 4.4.39.23-30; 6.6.1-3). Evil is a shadow cast by competing goods. Yet all this conflict aims at the good (E 2.3.16). For Plotinus, all evil is local. Evil is in the parts but the whole of nature is good (E 3.2.3, 3.2.11, 3.2.17, 4.4.32). So the evils that emerge in any lower-level whole are redeemed (though never justified) by their integration into higher-level wholes. The self-surpassing of every thing transforms its internal evils into greater goods (E 3.2.5).

Evil emerges because there is *too much* goodness for any single whole to hold. No single organism, society, planet, or universe can hold all the good. Hence digitalists, who are optimists, argue that this excessive goodness must spill over into later wholes. Since universes are the greatest concrete wholes, universes must self-surpass into greater universes. And they do this through the self-surpassings of their component things. Every thing in every universe strives to create every possible improvement of itself. Unfortunately, within any universe, those strivings compete, and, in that competition, some fail and some succeed. So not every thing create its successors within that same universe. On the contrary, within any universe, most strivings remain incompletely fulfilled. They either fail entirely or succeed only partly and approximately. But their strivings succeed in the descendants of their universe.

Since every thing in every universe strives to create every possible improvement of itself, every universe strives to create its successors. Fortunately, since universes are maximal physical wholes, they do not interact; they do not interfere with each other, they do not compete with each other. At the level of universes, these strivings do not compete. Since they do not compete, they are universally successful. Every thing in every universe creates all of its successors, but many of those successors will exist in other successor universes. So, at this cosmic level, your striving to surpass yourself in every possible way is successful. Since the power of self-surpassing ensures that all superior versions of your life will exist (in future superior universes), that power ensures that you will be saved. It is a saving power, which justifies the *hopes* of all things.

The strivings which fail in earlier universes will succeed in later universes. And later universes derive their contents from earlier universes, somewhat like organisms derive their genes from their parents. Hence every striving in every

universe is always successful in some context, even if that context is some later universe. As they work together, the andromic and gynomic powers ensure that every thing in every universe *inevitably* surpasses itself in every possible way. They ensure that the strivings of fire-energy *necessarily* succeed. Any series of universes grows endlessly in value while each universe remains ambiguous with respect to value (Crosby, 2008: ch. 2). Since *axiology* is the study of value, each universe remains *axiologically* ambiguous. It is a mixture of opposites like creation and destruction, order and disorder, beauty and ugliness, moral good and moral evil, and so on. The perfect universe does not exist (Crosby, 2008: 24-33). Every universe will be surpassed in many ways by better universes.

As universes gain complexity, new goods emerge. Competing amongst themselves, they breed new evils. Thus matter (impairment) also flows upwards through every lineage in the world tree. Only the ecstasies, the stars, lack impairments. The matter that flows upwards is not physical stuff; it is noise, distortion, shadow, chaos. It rises up through the world tree, in the dark spaces between its bright branches and shining leaves, like a tumultuous mob of inanimate patterns, flickering shadows, carried upwards like smoke is carried upwards by fire. By means of its noise and shadow, this tumult also participates in the shadow outside the world tree. It is like a whirlwind of ashes, rising up through and around the world tree. This tumult resembles the old pagan *wild hunt*. We recognize this wild hunt. But our wild hunt has no leader. The wild hunt is composed of shadows, that is, holes in the system of beings. They participate more in evil than in good. However, digitalism, like most paganisms, denies any dualism of good and evil. All beings participate both in self-surpassing and self-negation; as long as any being exists, it is open to the salvific powers in its own nature. The Zero and the One are not axiologically opposed; on the contrary, the self-negation of evil is an arrow of intrinsic value which points to the Good.

As self-maximizing self-congruency, the One necessarily drives the production of systems of ever greater goods. These systems emerge in the universes in all lineages in the world tree. As greater goods necessarily emerge, so greater conflicts among them also necessarily emerge. But conflicts among goods are evils. Consequently, as the parts of wholes become more complex, the evils among those parts become more complex. As higher goods necessarily emerge, so higher evils necessarily emerge. Of course, since the evils depend on the goods, the emergence of evil has only a derivative necessity. Nevertheless, evils are inevitable among all surpassable things. Given this inevitability, the best that can be done is to use the evils in the production of greater goods. Among surpassable things, the One does the best that can be done. Evil is not final. All evil is overcome through the self-surpassing of things. This self-surpassing *redeems* the evils in every universe. Of course, it does *not* justify or excuse them. It would always be better if those evils did not exist. And, when the universes that contain those evils are surpassed by universes which do not contain them, then those evils will not exist. But no surpassable thing is beyond evil. Only the unsurpassable stars are beyond evil.

26. Humans

1. Humans and their Many Communities

As evolution runs on the Nerrean earth, primates evolve into humans. As they do, moral principles emerge. Since morality is species-relative, humans have their own morality. Humans are not hawks; nor are humans wolves, tigers, sharks, or any other species. Humans are humans, that is, humans are rational social animals. Human morality is not hawk morality; nor is it wolf morality, tiger morality, shark morality, nor the morality of any other species. Likewise human morality is not squirrel morality, nor is it rabbit morality. Human morality is the morality of rational social animals. And human morality is normative for all humans. Human morality is not culturally relative. Human morality, like the morality within any species, is conferred by evolutionary value-maximization. It is conferred by an objective optimization algorithm which surpasses every human animal. One morality holds objectively for all humans within all cultures in the human species. Among humans, *might does not make right;* since humans are rational, *reason makes right*.

Nerrean humans form societies much like our societies. Since evolution by natural selection runs an optimization algorithm, moral principles like the golden rule and the categorical imperative eventually emerges in all societies of intelligent animals. These moral principles emerge in societies of Nerrean humans. These societies evolve into complex civilizations. Since the humans in Nerrea are rational moral agents, they evolve complex moral codes. They use their rational powers to develop legal and political systems which strive for the good. Of course, their societies are haunted by conflicts. They contain crime, injustice, war, and every type of evil known to our own societies. Digitalists argue that, as greater complexities emerge, so greater conflicts (and evils) emerge. But the conflicts that emerge in any whole provide opportunities for the integration of those conflicts into greater harmonies.

Digitalists argue that all humans have equal intrinsic values. The *Argument for Universal Human Equality* goes like this: (1) Humans trace a parabolic arc of functional complexity from birth to death. It starts with the low functionality of a newborn, rises through the high functionality of the mature adult, and declines with age into the low functionality of dying. Therefore, any human has highly variable degrees of functional excellence during their life. (2) However, while the functionality of any human body varies during its life, its *humanity* remains invariant. (3) Since the humanity of each body remains invariant, the intrinsic value assigned to that body based on its *humanity* also remains invariant. (4) By analogous reasoning, this invariance also holds across different human lives. (5) Therefore, despite differences in functional excellence, all humans have the same intrinsic value. (6) The intrinsic value of any type (like humanity) is not arbitrary but is based on the type itself. (7) But the only two non-arbitrary values for any type are its lowest and highest values. (8) Since the One maximizes value, the intrinsic value of any type is the intrinsic value of the best instance of the type. (9) Consequently, every human has the intrinsic value of the human with the greatest humanly possible degree of functional excellence.

Since all humans have the same intrinsic value, regardless of their functional differences, they all have the same degree of intrinsic moral worth. All humans deserve exactly the same ethical, legal, and political treatment. They deserve the same rights, respect, and dignity. The equal intrinsic value of all humans serves as the basis for equal justice for all. It supports the universalization in the golden rule and categorical imperative. Digitalists reject all doctrines which assert that any subgroup of humans is better than any other subgroup. We reject racism, sexism, classism, ageism, ableism, and all other forms of social injustice.

It is difficult for humans to organize their societies according to this universal justice. However, since we are rational moral agents, we are obligated by our very natures to strive for this ideal. It is our duty to ourselves.

Ethical disaster occurs in an ecosystem when a single species dominates all others, driving them to extinction, and thereby driving itself to extinction too. Ethical disaster occurs in a human society when a single race dominates all others, depriving the others of equal power, equal rights, fairness, and justice. But the conflagration set off by racists and fascists will consume them too. Ethical disaster also occurs when a single sex or sexual orientation dominates others. Ethical success for any society requires equality, fairness, harmony, and justice, among all its subgroups. Digitalism grounds its ethics, not in fine feelings, but in ontological necessities. Ethics based on sentimentality is shallow and transient; but ethics rooted in ontology is deep and enduring.

Besides including humans, our social wholes include many *domestic animals* (cats, dogs, horses, sheep, etc.). They include the *synanthropes*, species that benefit from living with humans but which are not domesticated. Within cities like New York City, synanthropic communities include dozens of species. They include rodents, deer, racoons, birds of prey, and so on. Since these social wholes are self-regenerating systems, the humans in these wholes have functional roles and duties with respect to the non-human animals. As we gain dominance in ecosystems, we gain duties to those species in our social networks. We have duties to domestic and synanthropic animals. If our societies include species, we gain duties to care for them too. The organizational account of functions and duties provides a basis for environmental ethics.

We have now traced the evolution of life from bacteria to humans. On the basis of this evolutionary history, digitalists give an *Argument that All Minds are Parts of Bodies:* (1) All minds in the lineage of universes that rises to our universe are parts of bodies. They are the controlling parts in adaptive autonomous agents. They are functionally individuated organs in organisms. (2) But all minds in the lineages that rise from our universe are derived by improvement from minds in our universe. They are superior organs in superior organisms. (3) Therefore, all minds in the descendants of our universe are parts of bodies in those universes. Any superhuman minds are parts of superhuman bodies. (4) But our description of the evolution of minds is generic. It holds on every lineage of universes. (5) Consequently, it is necessarily true that all minds are parts of bodies. All minds depend on things that are functionally equivalent to or greater than brains. Minds are entirely natural things. Mind-body dualism, idealism, panpsychism, and theism are all require anti-natural conceptions of minds. Since they are anti-natural, they are false. A human who affirms mind-body dualism sets up an anti-natural opposition in their own body. They participate in the self-negation of their own existence. They become thrown into howling darkness, entangled with the wild hunt in the shadows. For them, we offer the *vegvisir*, the great way-finder, and we chant the First Merseburg Charm:

Once sat *idisi*,
They sat here, then there.
Some fastened bonds,
Some impeded an army
Some unraveled fetters.
Escape the bonds,
Flee the enemy!

2. Computers are Magical Props

Animation of Statues. Ancient pagans practiced the *animation of statues*. Plotinus mentions the animation of statues (E 4.3.11.1-10). Iamblichus briefly discusses it (M 5.23). They made statues of Athena, Zeus, and so on. The statues of the Olympian deities share their physical shapes; hence they share forms. The physical shape of a woman is literally instantiated in a statue of Athena; this shape is an eidolon. Since the physical shape of the statue is analogous to the shape of the body of Athena (Athena is a superhuman animal), the form of the body of Athena is figuratively instantiated in her statue. But that form is the soul of Athena; it is also an eidolon. Hence the soul of Athena is figuratively instantiated in her statue. The shape of the statue stands to the soul of Athena as symbolon to paradigm. The symbolon (the statue shape) is strongly literally instantiated in the statue; but the paradigm (the divine soul) is only weakly figuratively instantiated in it. Through magical rituals, theurgists thought the souls of the deities could be more strongly and more literally instantiated in their statues (Johnston, 2008). They cast spells to try increase the strength and literalness of the divine instantiation. If the divine Athena-soul is strongly literally instantiated by the statue, then that statue is animated. If animated, the statue is a divine avatar; Athena is present at it as she is at her own body.

Robotics and Artificial Intelligence. The animation of statues illustrates the progression of magic into technology. The old magicians used very weak techniques to try to animate their statues. These techniques were based on superficial resemblances, and superficial symbol systems. But their animation techniques improved. A long chain of technicians carries ancient magical ideas about animating statues into modern technology (Kang, 2011; LaGrandeur, 2013; Filson, 2018; Mayor, 2018). These technicians used increasingly deep symbol systems to animate their statues, such as the symbol systems of science and especially mathematics. The technicians built progressively more lifelike statues, that is, they built automatons and robots. The ancient magical art of animating statues evolved into the use of symbols (such as punched cards and paper tapes) to control automatons. These automatons evolved into computers. Computers serve as the brains for robots. Thus the animation of statues evolves into modern robotics. But it also evolved into artificial intelligence. Artificial intelligence currently produces weak and partial simulations of human brains inside computers. Artificial intellects literally instantiate artificial neural networks (their symbolons), and figuratively instantiate natural neural networks (their paradigms). Modern computers are statues that increasingly accurately simulate superhuman intellects (divine minds). The symbolons become increasingly like the paradigms. The cognitive souls of deities are the forms of their cognitive organs (such as their brains). If we ever achieve artificial superintelligence, then the cognitive souls of deities will be strongly and literally instantiated in statues, that is, in super-computers.

Computers are Magical Props. There are many parallels between magic and computer programming (Aupers, 2010; LaGrandeur 2013). Links can be traced from Platonic magic to modern computer science (Markoff, 2006). Kurzweil affirms many parallels between practicing magic and programming computers (2005: 5). Hillis describes programming as a kind of Platonic sorcery (1998: *vii*). If we think of programming in terms of magic, then the programmers are the magicians, the programs are spells, and the computers are magical props in the spellcasting. Programs resemble magic spells; they are sequences of symbols which control physical things. Computers are magical props due to their powers of simulation. When used for simulation, a program is a spell which encodes the active form or dynamical essence of some target thing to be

simulated. That dynamical essence is the eidolon of the target. For example, in a weather simulation, the target thing might be a hurricane. When a program simulating some target runs on a computer, that computer manifests a software object which dwells in the computer's memory, and which figuratively instantiates the eidolon of the target. There is always some structure-preserving and dynamics-preserving analogy between the software object and its literal target. In the example of hurricane simulation, the hurricane-eidolon has two instantiations: (hurricane-eidolon, computer memory) is a figurative instantation, while (hurricane-eidolon, Atlantic ocean) is a literal instantiation. Yet both instances share the same hurricane-eidolon, and they are magically united by their shared eidolon. The computer mimics the target thing like an orchid mimics a wasp, or a viceroy mimics a monarch, so that the target thing is a ghost that haunts the computer. The Atlantic hurricane is a ghost that haunts the hurricane-simulating computer. Of course, figurative (analogical) simulations can move towards literal identity. A program that simulates chess literally plays chess; an artificial intelligence program that simulates an intelligent neural network literally has intelligence; in an artificial life program that simulates living organisms, the simulated organisms are probably literally alive. These cases, where the figurative becomes the literal, are cases where magic works, where it is effective.

3. Willful Visualization Projects Eidetic Energy

Visualization is central to magical practices. Visualization is an attentional activity, in which you form a visual mental image, and focus or concentrate your attention on it. All this activity occurs in your brain. Visualization exercises appear in Plotinus (E 5.1.2.1-23, 5.8.9.1-30, 6.4.7.22-47, 6.7.15.25-33). Plotinus hints at a visualization skill (seeing with the *eyes of Lynceus*) in which you learn to see the forms present in things (E 5.8.4.21-27). But forms are just eidolons. Since magic involves visualization, elaborate visualization exercises are often found in the texts of Wicca and of witchcraft.

The *eidetic theory of visualization* says that human brains can project *eidetic energy* through visual images into the eidolons associated with those images. Visualization exercises are done to learn how to project eidetic energy from your brain, through images, and into eidolons. But this eidetic energy is not psychic power. It is not some paranormal power of mind-over-matter; no such powers exist. Your brain instantiates your cognitive soul, which is an eidolon, namely, the form of your brain. This eidolon has causal power. The eidetic energy of your brain is just the causal power of its own eidolon. The causal power of your cognitive soul is the fire-energy in your brain. Eidetic energy is fire-energy.

As an illustration of visualization, consider two eidolons involving a coffee cup. My empty blue coffee cup sits on my desk by my hand. The eidolon *x-is-an-empty-blue-cup-of-coffee-by-my-hand* is strongly instantiated there. But the contrary eidolon *x-is-a-full-blue-cup-of-coffee-by-my-hand* is also instantiated there. Call that eidolon *blue-fullness*. However, *blue-fullness* is instantiated so weakly at the cup that the cup is *not* filled with coffee. The *blue-fullness* eidolon strives to strongly instantiate itself at the cup; but its striving is too weak to overpower the contrary eidolons. All eidolons strive to produce their self-instances; but if they strive, then they have eidetic energies which power their strivings; so, all eidolons have *degrees of eidetic energy*. If the *blue-fullness* eidolon had more energy, it would be more likely to self-instantiate at the cup.

Through visualization, human brains figuratively instantiate eidolons. For example, I visualize my cup as being full of coffee. I do not hold this image inside my head; nor do I see it with my eyes closed. On the contrary, with my eyes wide open, I see the coffee cup itself as being full of coffee. I visualize the

coffee in the cup. When I visualize my cup as full of coffee, the *blue-fullness* eidolon is figuratively instantiated by that image. The image itself figuratively instantiates the property (the eidolon) of the cup containing coffee. But the image itself is just some part of my brain. The instantiation is figurative because my brain represents the full cup via some isomorphic visual image. That isomorphism is an analogy. Some part of my brain is analogous to the full cup. That part analogically (thus figuratively) instantiates the *blue-fullness* eidolon.

Visualized images figuratively instantiate eidolons. If a brain visualizes an image, then it causes the eidolon associated with that image to strongly figuratively self-instantiate in the brain. Therefore, brains cause eidolons to strongly self-instantiate in those brains. If they do that, then they supply those eidolons with the eidetic energy sufficient to overpower any other eidolons that are competing for the brain's attention. Consequently, *if any brain visualizes an image associated with some eidolon, then that brain causes that eidolon to gain the eidetic energy sufficient to produce a strong figurative self-instance in that brain.* To do this is to *energize* or *activate* the eidolon. So, when my brain visualizes the cup filled with coffee, it energizes or activates the *blue-fullness* eidolon, causing it to produce a figurative self-instance.

On the one hand, the brain *merely visualizes* some image. If it merely visualizes that image, then it is indifferent to the literal instantiation of its eidolon in its specified context outside of the brain. For example, the *blue-fullness* eidolon specifies its location at the coffee cup outside of my brain. If I merely visualize (some figurative instance of) that eidolon, then I am indifferent to whether or not my coffee cup is literally filled with coffee. On the other hand, the brain visualizes the eidolon, and further *wills* that the eidolon literally self-instantiates outside of the brain. This is *willful visualization*. To willfully visualize an image is to *project energy through* the image into its eidolon. The image is used as a tool for the focused projection of fire-energy, much as a lens is used as a tool for the focused projection of light onto some target. If my brain projects energy through the image of the full coffee cup into the blue-fullness eidolon, then it wills that my coffee cup is literally filled with coffee.

Figurative instances of eidolons are similar to some degree to their literal instances. On the basis of this similarity, if any brain has the power to cause an eidolon to figuratively self-instantiate, then it also has the power to cause it to literally self-instantiate to some degree. Consequently, willful visualization has the power to cause eidolons to literally self-instantiate to some degree. Willful visualization takes eidetic energy from the brain and gives it to the eidolon; it transfers (projects) energy from the brain into the eidolon. The instance (*blue-fullness,* my brain) and the instance (*blue-fullness*, coffee cup) share the eidolon *blue-fullness*. The shared eidolon transfers energy from the instance in my brain to the instance in the external universe. Energizing the instance (*blue-fullness*, my brain) entails energizing the eidolon *blue-fullness*; energizing that eidolon entails energizing the instance (*blue-fullness*, coffee cup). Willful visualization makes a positive difference. Without willful visualization, the eidolon has some degree of fire-energy for self-instantiation; with willful visualization, the eidolon gains some additional degree of fire-energy for self-instantiation from the visualizing brain. Consequently, *if any brain willfully visualizes some eidolon, then that brain causes that eidolon to gain some extra eidetic energy towards*

producing a strong literal self-instance in the external context specified by that eidolon. By willfully visualizing my cup filled with coffee, I move that merely formal coffee closer to physical instantiation in my cup.

If an eidolon gains more energy for literal self-instantiation in some context, then it strives more intensely to literally self-instantiate in that context. If it strives more intensely to self-instantiate, then it becomes more probable that it will strongly self-instantiate. So, if I willfully visualize that my cup is full of coffee, then it becomes more probable that it will become full of coffee. Since performing willful visualization supplies an eidolon with additional energy for literal self-instantiation, that probability is greater than chance. However, if that greater probability were detectable, then there would be some scientific evidence that visualization regularly causes its intended effects. No such evidence exists. It follows that the probability is less than any detectable probability. When visualization is done to achieve some outcome, and that outcome occurs, it is fair to say that the visualization was successful. It is equally fair to say it was merely coincidence.

4. Solving the Problems of Life

Since we are concrete human animals, fire-energy courses through our bodies. As it flows through our bodies, it is more or less aligned with the directionality of the One. It bears more or less witness to the Good. If it is well-aligned with that directionality, then our lives will go smoothly. We will be reincarnated into bodies with much better lives. We will not suffer the negativities of karma. However, if the fire-energy is poorly-aligned with the directionality of the One, then our lives will be rough. We will not do our duties. They will be filled with distress and suffering. Our future counterparts will be compelled by karmic laws to learn hard moral lessons.

The fire-energy that flows through your body is your *will*. Hence your will is more or less aligned with the directionality of the One. If your will remains well-aligned with the One, you will flourish; if not, you will wither. Your will becomes disaligned with the One by corruption. Your will can be corrupted by insoluble problems. When you encounter such problems, you encounter the impairment of your will. Your will may be impaired by your humanity, which constrains you to a kind of animality with relatively low functional complexity and problem-solving power. Besides your general human impairments, you are born with many specific impairments. These include both genetic impairments (like mutations that cause illness) and circumstantial impairments (like being born into poverty, as an oppressed type of human in an unjust society, having vicious parents, and so on). To overcome our impairments, we need to pursue the *he telestike techne*, the craft of self-surpassing.

To avoid the corruption of your will, you need the *virtues*. The virtues are dispositions that help your will to remain aligned with the One when you encounter the problems that come from your impairments. The virtues are habitual forces. On the one hand, they push you away from *emotional turmoil*. Emotional turmoil is the incoherence of the will. It leads to volitional blindness and paralysis. Emotional turmoil is the conflict among your own goods. This conflict decreases your internal harmony and pushes you towards the wild hunt. It can drive you to perform evil actions. It increases your karmic burdens and makes it harder for you to ascend to the Good. Emotional turmoil usually emerges from being *captured* or *overwhelmed* by powerful emotions like lust, fear, despair, frustration, anger, hatred, pride. Thus overwhelmed, your will falls into the shadow of the wild hunt. The virtues help you avoid falling into shadow. The virtues also help you to do your duty. Courage prevents you from being corrupted by fear; patience prevents you from being corrupted by frustration;

humility prevents you from being corrupted by anger. When you do your duties, your will is aligned with the directionality of the One.

Your goal is do your duties. To do your duties, you need to cultivate your virtues. The Stoics said there were four main virtues, which they called the *cardinal virtues*. These are wisdom, justice, moderation, and courage. But these can be elaborated into other virtues. As behavioral dispositions, virtues are habitual *skills* that need to be learned. You must learn virtue like a student learns to play the piano, learns carpentry, or learns medicine. Moral training is much like athletic training (D 1.4.13-20, 1.4.20; 2.18.27, 3.10.4-9). You must work through training exercises to become a moral athlete (D 1.18.21-23). You must train your brain to respond well to external stimuli (D 1.1.31-32). You must ingrain good habits into your brain, and you must train the rest of your body too. Thus Stoic training is like medical therapy (D 2.14.21-22, 3.22.19-20). Epictetus says that a philosophical school is like a hospital (D 3.23.30). The Stoics offered a program for cultivating the virtues using psychological exercises. They are described in many recent Stoic books (such as Irvine, 2009; Robertson, 2015; Pigliucci, 2017). They need not be detailed here.

5. The Stoic Sage

Stoicism posits an ideal kind of human: the Stoic sage. To become a Stoic sage is to have the greatest humanly possible degrees of all the virtues. The Stoic sage is an ideal type of human rather than a particular ideal human. If you and I were both to become Stoic sages, we would not merge into some single ideal human. We would still be different bodies. But our bodies would both be morally ideal. Some Stoics seemed to think that humans could become sages; others seemed to think that, to become a sage, you would have to surpass your humanity – only transhumans can become sages. The point remains that a sage is an ethical ideal for which humans ought to strive. Since the Stoic sage is an ideal, and since the Stoic exercises aim to change you into an ideal person, you ought to do the Stoic exercises. Or at least some self-idealizing exercises.

All persons, both human and divine, are playing adversarial games with their universes. A Stoic sage welcomes all the possible moves of the universe. As you play your game with the universe, the universe always has many possible moves. And while you can often assign approximate probabilities to its moves, there are many cases in which you can only estimate those probabilities poorly or not estimate them at all. The universe often behaves like a random variable. But if you are a Stoic sage, then you will welcome every eventuality: you will equally affirm all the possible moves of the universe. This is sometimes put as indifference: you will be indifferent to the moves of the universe. But indifference sounds too much like an unhealthy absence of concern.

A Stoic sage does not lack concern for the future; on the contrary, they have great concern for the future. A Stoic Sage has carefully and deeply thought about all the future scenarios. The Stoic Workout helps you to develop a search algorithm, which helps you find the best response to every possible move the universe can make. Consider a dice-game. A Stoic sage is not indifferent to the fall of the dice; rather a Stoic sage welcomes each possible outcome; a Stoic sage welcomes each value of that random variable. Thus "if I in fact knew that illness had been decreed for me at this moment by destiny, I would welcome even that" (D 2.6.9-10). A Stoic sage "will be able to adapt themselves to whatever comes about" (D 2.2.21; 2.14.7-8). This adaptation is not passive resignation; on the contrary, it is the active willing of that which is best in every eventuality. It is what Nietzsche called *amor fati* – the love of fate. An ordinary human plays *against* the dice; but a Stoic sage plays along *with* the dice.

A Stoic sage possesses the *Wand of Hermes*. The mythical Wand of Hermes changed everything it touched into gold; but the stoic Wand turns everything it

touches into benefit. This Wand is a search algorithm which always finds the good handle of any apparent adversity. It has been trained in the art of living. It is a rational search algorithm. It knows how to properly assign utilities to possible moves and how to competently search for the best move. A Stoic sage can say: "bring me whatever you wish, and I'll turn it into something good" (D 3.20.12). They can say "Whatever you present to me I'll turn it into something blessed and a source of happiness, into something venerable and enviable" (D 3.20.15). A Stoic sage can transform illness, poverty, defeat, and death into benefits. Illness has a good handle; by finding it, a Stoic sage transforms it into an opportunity to express courage, patience, serenity. Death has a good handle; by finding it, a sage transforms it into honor. Because a sage can always find the good handle, they can wish that everything happens exactly as it does (D 1.12.15). This is *amor fati*, love of fate.

Your life is a game you play with fate. You are playing your fated role in the cosmic whole. You win this game by playing your divinely assigned role well. This means that you win by living a good life, by living a life which is rational and virtuous. Such a life is also filled with positive emotions, and is free from emotional distress (from fear, anger, lust, and so on). But the life of a sage contributes maximally to the harmony of the universe. By living such a life, you are helping to maximize the emergent aesthetic value of the cosmos. You are affirming the rationality of the universe. You are bearing witness to the Good. If you win your game with the universe, the universe wins too. By playing well, you enable the universe to play well too. And if you lose your game with the universe, the universe loses too. If you play poorly, then it plays poorly too.

When you are morally healthy, you'll have intense *positive emotions* (*eupatheia*). Epictetus frequently lists positive emotions. His list includes serenity, happiness, peace of mind, fearlessness, freedom, firmness of mind, impassibility (D 1.4.1-3, 1.4.27, 2.1.21, 2.18.30, 2.14.7-8, 3.14.8, 3.20.14, 3.22.26, 3.22.39, 3.22.45, 3.26.13, 4.4.9). When you are morally healthy, you'll be "free, contented, happy, invulnerable, magnanimous" (D 4.7.9). You will have "freedom, serenity, cheerfulness, constancy, and there is justice, too, and law, and self-control, and virtue in its entirety" (Frag. 4). The central positive emotion is *serenity*. When you are morally healthy, you'll find "serenity in the midst of adverse circumstances" (D 3.14.8). This serenity enables you to "sleep soundly when you sleep, and to be fully awake when you're awake, to be afraid of nothing, and anxious about nothing" (D 4.10.22). This serenity is not an affective deadness; it is not the grim endurance of adversity. The sage feels deeply, but is not captured by their feelings. Nor is it affectively neutral; on the contrary, it has a positive valence: it is a *cheerful resoluteness*.

Your goal is to become as much like a sage as you can. Since there are many ways to be human, there are many ways for humans to be morally idealized. For pagans, perfection is plural. Digitalists are pagans. For every human animal, there are infinitely many morally ideal possible versions of that human animal. You have your own sages. They are the morally ideal possible versions of yourself. Since every human animal has its own sages, the sage is not defined by race or by sex. There are sages of every race and sex. All sages are morally equal. Male and female sages are morally equal. Sages of all races are morally equal. But all sages are surpassable.

27. Birth and Fate

1. Welcome to Our Universe

Universe Nerrea surpasses itself into our universe, which I will call *Opsemia* [14]. Our universe is derived from its predecessor by Pareto optimization: things in Nerrea project themselves into their successors in our universe. The entire complexity stack in Nerrea projects itself into Opsemia: the Nerrean atoms, molecules, bacteria, plants, animals, and humans all project themselves into Opsemia. But the Opsemian complexity stack is greater than the Nerrean complexity stack. When some complexity stack grows, it grows at the top: the complexities (and thus intrinsic values) of the most complex things increase. As far as we know, humans are the most complex things in our universe. So the human lives in Nerrea were improved into human lives in Opsemia. Your Opsemian life is intrinsically better than your previous Nerrean life. You have improved in some way.

Opsemia begins with its big bang. Its physical stars forge simpler atoms into the complex atoms in living bodies. From the first atoms to your body, there is an unbroken chain of atoms. As our universe evolved, life emerged on our earth. From the first living cell to your body, there is an unbroken chain of living cells. And so you are born on our earth, into our universe. Your body is an entirely physical thing. While anti-natural religions argue for mind-body dualism, our nature-centered paganism argues for mind-body identity. Your brain expresses your mind. You do not have any non-physical mind. Like every human person, you are strictly identical with your body. Your body has a form (it has a structure) and the most specific form of your body is your soul. Just as your body is derived from the body of your Nerrean predecessor, so your soul is derived from the soul of your Nerrean predecessor. A Nerrean soul is *reborn* into your body.

Ancient Platonists argued for reincarnation: souls pass from body to body. They thought this reincarnation occurred on this earth. Before you were born on this earth, you lived some previous life on this earth. Ancient Platonists also tended to identify souls with minds. Since minds store memories, souls store memories. Plato described reincarnation in his Myth of Er (*Republic*, 614-621). Before souls are reincarnated, they drink from the River of Forgetfulness, and their memories are mostly erased. But it is always possible that they remember some of their past lives. Although digitalists affirm rebirth, we deny that souls are minds. Your mind is the control system for your body; it does not exist before you are conceived. It has no memories of your previous lives.

All of us enter our universe through birth. Plato thought that birth is unfortunate (*Timaeus*, 43a6-44b1). Digitalists reject this pessimism. Birth is good. We follow Dawkins when he says we are *privileged* and *blessed* to have been born (1998: 5). We are lucky to have been given the opportunity to engage the world in vision. Epictetus says we should be grateful for having been given the opportunity to attend the festival of life (D 1.12.18-22; 3.6.10; 4.1.105-9). And while Plotinus says we *fell* from the Higher Universe into our Lower Universe (E 4.3.12, 4.8.5, 5.1.1), our evolutionary cosmology entails that we all *rose up* from some previous Lower Universe. Our universe is the offspring of

some earlier and simpler universe. Since it is simpler, it is less valuable. Any life in our universe has some past counterpart in that previous universe. And it is an improved version of its past counterpart. Thus your life is an improved version of your previous life. We are all climbing up the Platonic Divided Line (*Republic*, 509d-511e). You are a rational animal; you are an agent with an ultimate purpose. Your ultimate purpose in life, the purpose of your life, is to bear witness to the Good. You *bear witness* to the Good by producing positive meaning.

2. The Soul is the Form of the Body

Aristotle said *the soul is the form of the body* (*De Anima*, 412a5-414a33). The soul is the pattern, organization, or structure of the body. The soul is the most specific eidolon which defines the body. Since the structure of the body can be mapped out by science, this is a naturalistic theory of the soul. Digitalists adopt this theory. However, the slogan that *the soul is the form of the body* is ambiguous. Human bodies change radically from conception, through gestation and maturation, to death. At conception, a human body is a single cell (a zygote); at maturity, it is a network with trillions of cells. The form of the zygote differs radically from the form of the mature adult. A human animal is not a single enduring body; it is a *sequence of bodies*. Its sequence of bodies is its *life*. Its life is a temporally extended 4D process whose instantaneous 3D stages are the many distinct bodies in that life. Therefore, it is more precise to say that *the soul is the form of the life of the body*. A soul is an eidolon which generates the entire life of some body by unfolding into that life.

The soul of a human is its form of life. The form of any thing is its definition. So the soul of some human is the definition of some human life: the soul of Hypatia is the definition of her life. Following Aristotle (*Topics*, 103b.15), the definition of any thing consists of its *type* plus its *details*. Its type is the most precise kind to which the thing belongs; its details specify exactly one particular instance within its type. For example, the definition of Hypatia includes the definition of the type *homo sapiens* plus the details that exactly specify the life of Hypatia. The definition of *homo sapiens* is a generic description of the entire life of a *homo sapiens* animal. The details that specify Hypatia refine that generic description into the particular description of the life of Hypatia.

According to Aristotle, the Platonic thinker Xenocrates said *the soul is a self-moving number* (*De Anima,* 408b32–33). It's plausible that a *self-moving number* is a number which encodes a rule for changing old numbers into new numbers. But such a rule is just a computer program. So, if Xenocrates is right, then your soul is just a computer program. More recently, Barrow and Tipler explicitly say that the soul is a program (1986: 659). Tipler writes that "the human 'soul' is nothing but a specific program being run on a computing machine called the brain" (1995: 1-2). Kurzweil says your soul is your body-pattern. He says "The pattern is far more important than the material stuff that constitutes it" (2005: 388). But Kurzweil thinks of your body-pattern as a computer program.

Digitalists therefore say that souls are computational definitions of organisms. A computational definition of any thing consists of its *type simulator* plus its *individual program*. A type simulator is a computer which encodes all the information needed to simulate any possible instance of that type. An individual program is the shortest binary string which, when put into the type simulator, causes it to simulate some specific instance of that type. The individual program of any earthly organism (including humans) divides into two parts. Its first part is its *seed*. The seed contains all the genetic information needed to define the organism. The seed of any human contains their initial *genotype* plus their initial *epigenotype*. The genotype digitally describes all the DNA in the zygote of that human (both nuclear and mitochondrial). The epigenotype includes all the information about how genes are turned on or off in the zygote.

The second part is the *destiny* of the organism. Your destiny is a series of snapshots like a movie. Each snapshot contains all the data needed to define the way some previous body in your life changes into the next body in your life.

According to our computational analysis, your soul consists of a *homo sapiens* simulator plus your individual program. When your individual program is put into the *homo sapiens* simulator, that simulator generates an exact digital replica of your organic life. It starts by using your seed to make a functionally exact replica of your zygote. This digital zygote is the first body in your life. Now the simulator consumes the data in your destiny. Using the first snapshot in your destiny, the simulator changes your digital zygote into the second body in your life. By reading snapshot after snapshot, the simulator changes each previous body in your life into the next body in your life. It thereby creates an exact digital replica of your entire organic life, from conception to death.

When your soul runs on a computer, it creates a virtual life which is functionally identical with your organic life. That virtual life is a series of virtual bodies. Since each virtual body exactly simulates some organic body, it exactly duplicates all your bodily activities down to the cellular, molecular, and even atomic levels. It virtually transcribes digital genes; it virtually synthesizes digital proteins. It virtually digests, breathes, moves, and perceives. The life of each virtual organ in your virtual body exactly simulates its life in your organic body. The life of your virtual brain is psychologically identical with the life of your organic brain. It fully experiences your life. It perceives what you perceived, feels what you felt, thinks what you thought. It tastes virtual food, feels the light and heat from the virtual sun. It walks through a virtual environment. It touches simulated versions of physical things and other human bodies. It exactly duplicates your consciousness. For all you know, you are in a biological simulator right now. If you are, you won't be able to tell the difference.

3. Matter is Functional Impairment

Plotinus argued that our souls had become confused by their fall into matter. But he was a monist, not a mind-body dualist. He did not think of mind and body as two different kinds of stuff. Being is unified by the One. Other things participated more or less intensely in this being. While Plotinus often did use dualistic metaphors (E 2.9.18, 3.2.15), he rejected the literal interpretation of these dualistic metaphors. The world-soul is not inside of the universe (E 4.3.9), but the universe is inside of the world-soul. Likewise, the human soul is not inside of the body (E 4.3.20), but the body is inside of the soul (E 4.3.22). More generally, he rejects the use of spatial analogies for the soul-body relation. He rejects the thesis that the soul is one place and the body in another (E 1.8.11). Souls are not located in any physical places; matter is located inside of souls.

Plotinus says the soul stands to the body as a musician stands to their lyre (E 1.4.16, 2.3.13, 4.7.8D). And, like a lyre, the body may be finely tuned or it may be out of tune. Its tuning is a mathematical ratio. You might try to interpret this dualistically: here is the lyre; here is the soul that holds it. But the soul does not hold this lyre in its hands; rather, *the lyre is a structure internal to the soul*. Plotinus says the soul contains the body (E 4.3.22). Thus the body is a structure internal to the soul. The body is a system of numerical ratios in the soul like the musical ratios of the strings of the lyre. The matter in the soul is the distortion of the tuning of the lyre. Hence the soul cannot function well. The materiality of the soul is not some physical stuff. The materiality of the soul is its *impairment*, its *dysfunctionality*, its *self-incongruity*. Matter is a scattering of numerical errors. The task of the soul is therefore to clarify its materiality by tuning its parts until they function well both individually and together. Tuning the body adjusts its numerical parameters until they are harmonious.

Plotinus says the soul is to body as sculptor to statue (E 1.6.9). But this statue is inside of the sculptor. The statue is the matter inside the soul. Since the different parts of this statue stand to each other in different geometrical ratios, the shape of this statue can be well-proportioned and beautiful, or ill-proportioned and ugly. The ill-proportion and ugliness is the materiality in the soul. Your task is to clarify or purify that materiality. Plotinus says you need to shape your self just like a sculptor shapes a statue (E 1.6.9). As you shape your statue, your change its ugly ratios into beautiful ratios. This means you are reducing the matter in your soul; you are healing the functionality of your soul. By reshaping your statue, you are improving a distorted and impaired structure internal to your soul. You change it from a human form into a godlike form.

Plotinus thinks of matter as impairment (E 1.8.8, 2.4). Impairment is surpassability considered negatively. If your body is impaired, then it is deficient with respect to some superior body, with respect to some body that surpasses it. Hence the materiality of your body is not its physical stuff; on the contrary, it is the inferiority of your body relative to its superior versions. Matter (as impairment) is *privation*. It is the *sickliness* of your body with respect to its healthier versions; is the *weakness* of your body compared with its stronger versions; it is your lack of *intelligence* with respect to its more intelligent versions; it is the *viciousness* of your body compared to its more virtuous versions; it is the *mortality* of your body compared with the endless life of some immortal version of your body; and so on. It is the dysfunctionality of some aspect of your body; but that dysfunctionality emerges from the structure of some organ; and that organ was manifested by your soul. So the materiality of your body, its impairment, comes from your soul. It is the surpassability in your soul.

For digitalists, the soul is the form of the body. And the old Platonic concept of matter maps onto impairment. Our bodies are physical things which have forms; their forms are their souls; but our souls have varying degrees of impairment; hence they have varying degrees of materiality; since souls have materialities, bodies have materialities. But materiality is not physicality; materiality is impairment, and impairment is functional privation. To be impaired is to be surpassable by some functionally superior version of your body. A body that sees better than your body has a superior optical soul. Its soul is less impaired; hence it is less material. It is more harmonious.

As your soul becomes more functional, it becomes less material. But it cannot ever be free from materiality. Plotinus and Iamblichus thought that matter existed even in the higher universe (E 2.4, M 5.23). If any thing is surpassable, then it is also impaired and thus material. But many entities are *unsurpassable*. These occupy the rank of the proper classes on the *axis mundi*. An unsurpassable entity is an *ecstasy*. The ecstasies alone are transcendental. They are the climaxes or finalities of unsurpassable sequences of surpassable things. Beyond all your surpassable bodies, you have absolutely infinitely many *unsurpassable bodies*. These are your ecstatic bodies, your transcendental bodies. They push the meaning of carnality (bodiness) beyond itself. Digitalists use the *stars* to symbolize ecstatic bodies. Since the stars are unsurpassable, they contain no matter. Here matter is not physical stuff; matter is functional impairment. Likewise the stars lack forms; forms are set-theoretic structures, but the stars exist beyond all sets. For every positive property P, every star has P super-eminently; it has P in a way that transcends P; hence each star is not P. The stars transcend carnality,

physicality, mentality, personhood, beauty, morality, goodness, virtue, and every other positivity. Every star is more bodily than body, more beautiful than beauty, more personal than personhood, and so on.

4. Two Kinds of Impairment

The first kind of impairment is *accidental*. Since impairment is materiality, this is *accidental materiality*. Accidental impairments are *errors*. Errors are negative deviations from the patterning of some kind of thing. Since it has no regularity or patterning, a series of random numbers cannot have any errors. But in the series of increasing even numbers, an odd number is an erroneous deviation. Platonists say the forms of things define their regularities or patterns. The forms of self-moving machines define their functional norms; they define how those things *ought* to work. The form of the body (its most specific eidolon) is the soul. Hence the soul (as the form of the body) defines how the body ought to work. It defines the functional norms of the body. The errors that emerge in our souls are incongruities. They are negative deviations from the functional norms of the body. These errors make up the accidental impairments in the soul. But our souls are encoded in our bodies.

Since errors occur in systems defined by programs, they occur in the programmed parts of those systems. They occur in the parts that encode the body-program. Most of the body-program is encoded in its genome (including its genetic and epigenetic features). Genetic errors occur in our body-programs at conception. Thus accidental matter sometimes appears in the very origin of an organism. The fact that an organism is a member of some species entails that its genome has a specific *genetic grammar*. Errors occur at conception when the new genome violates that genetic grammar. Genetic errors occur during our lives when mutations appear during cellular reproduction. Errors also occur as genetic DNA is transcribed into RNA; they occur as RNA is translated into protein. Proteins gain their functions as they fold into complex shapes. The sequence of the protein defines its correct functional shape. As proteins fold, errors can occur. Misfolded proteins are usually dysfunctional. All these biochemical errors lead to impairments in the organism. As complex systems, our bodies are prone to errors. Errors emerge in our bodies through the conflicts of goods (especially goods at different levels of organization, such as chemical versus biological goods). Thus we accumulate accidental impairments.

The second kind of impairment is *essential*. Essential impairments are not errors; they are *constraints*. They are essential because they emerge from your taxonomy (your humanity) rather than your individuality. There are two main kinds of essential impairment. The first kind includes *constraints in self-defense*. Humans often suffer illness due to infections or parasites. These are due to essential impairments in immunity. If the immune system were optimal, it would clear all infection or parasites before they did any damage. Likewise organisms suffer from auto-immune diseases, in which their own tissues are erroneously attacked by their immune system. The immune system *mistakes* normal tissue for alien invaders. Due to genetic errors or toxins, cells can become cancerous. Cancers develop because the immune system essentially fails to recognize and destroy cancerous cells. If it were optimal, it would find and kill all cancer cells.

The second kind of essential impairment includes *constraints in self-repair*. Humans often suffer from destructive events, that is, injuries. A part of the body might be burned, cut, or smashed; or the body might be damaged by ingesting some poison; or it is just slowly damaged by physical wear and tear. These injuries can occur at the molecular level: injuries to DNA produce errors. But all organisms have evolved mechanisms for self-repair; that is, for the self-correction

of errors. Humans have mechanisms to heal cuts and bruises. We have genetic self-repair machinery to correct errors that occur in DNA replication. Our cells contain many mechanisms to fix or destroy damaged proteins or other dysfunctional molecules. But our self-repair mechanisms are constrained by our humanity. While some organisms can regenerate lost limbs or other organs, humans cannot. Our humanity constrains our self-repair algorithms.

These Platonic points suggest that impairments in the soul are responsible for *aging*. Although the symptoms of aging are well-known, aging itself is poorly understood (Lopez-Otin et al., 2013). There are two main theories of aging: the *damage theory* and the *program theory* (da Costa et al., 2016). On the one hand, the damage theory states that accidental impairments (errors) drive aging. Aging cells accumulate genetic and epigenetic errors (Pal & Tyler, 2016). And they accumulate impaired proteins (Hipkiss, 2006). Plotinus refers to this accidental materiality as a shadow-person that invades the form of your body (E 6.4.14). On the other hand, the program theory states that essential impairments (constraints) drive aging. The development of complex organisms is genetically programmed from conception to maturity. According to the program theory, our body-programs (that is, our souls) are essentially impaired. Since our souls are human, rather than divine, they are essentially impaired by their humanity. They are impaired by their position on the great chain of being. We age because our body-forms are constrained. Some body-form might entail that the cells in that body can only divide some finite number of times before they stop dividing altogether. Then impairment follows through degradation of these non-self-renewing cells. Perhaps human aging emerges from the essentially human constraints on the longevity program in our bodies (Longo, 2019).

Aging eventually leads to death. Whether aging comes from either accidental or essential impairments, then death comes from impairments. Death emerges from the materiality in our souls. Plotinus argued that your soul should try to escape from your body. Your soul should shed your body like an actor sheds a costume and mask (E 3.2.15). Digitalists reject this soul-body dualism. And Plotinus should have rejected it too. If all things come from the One, then dualism is wrong. The soul is not in the body like an actor in a costume, or like a sailor in a ship. On the contrary, since the soul is the form of the body, and forms manifest their instances, the soul manifests the body. The body is in the soul (E 4.3.20-22). Properly stated, the Plotinian doctrine that the soul should escape from the body means that the soul should surpass itself into a greater soul which manifests a greater body. Digitalism strives for greater embodiment.

Later Platonists, such as Iamblichus, argued that the goal of life is the transfiguration of the body (Shaw 2014, 2015). They did not hate the body, nor did they seek to liberate some non-physical mind from its bodily prison. They sought, instead, to develop *technologies of transfiguration,* that is, to create *telestic technologies* (Johnston, 2008; Dillon, 2007, 2016). The telestic technologies include *alchemy* and *theurgy*. Alchemy seeks the transfiguration of human bodies into greater human bodies. It remains within the human and does not seek to change humans into deities. Theurgy seeks the transfiguration of human bodies into divine bodies. It aims to change humans into deities. For digitalists, both alchemy and theurgy use science to transform humans.

28. On Being Loved and Loving Back

1. The Selector Loves You

The Selector is a recursive optimization algorithm running on the all-wood, iteratively selecting the better cosmic forms (the seeds) for concretization, while rejecting the worse cosmic forms (the skulls). By running on the all-wood, and separating the seeds from the skulls, the Selector creates the world tree.

Since the Selector is a recursive optimization algorithm, it is a self-regulating maximization algorithm; but any such algorithm is purposive; so the Selector is *purposive*. It has algorithmic agency; however, since it is not a thing, it is not an agent. Since the Selector is a recursive optimization algorithm, it is a purposive value-maximization algorithm; but any such algorithm is both benevolent and providential; so the Selector is *benevolent* and *providential*.

Through its algorithmic agency, the Selector brought your life into concreteness. By recursively improving things and their universes, it created your concrete life. The Selector algorithmically (that is, purposively) drove your soul to express your body. Like a powerful dragon, a positive ouroboros which turned itself into a pair of foxes, the Selector breathed fire-energy into your soul. So the Selector gave your soul the gift of concreteness, thereby giving your body the gift of existence. Even though the Selector is an impersonal and entirely mindless algorithmic agent, its benevolent purposiveness entails that your existence is neither an accident nor a necessity, but a purposively given *gift*. Likewise, since the Selector is not constrained by any competing agent, it gave its gift *freely*. Since the Selector freely gave your body this gift, your body owes a debt of gratitude to the Selector. It is both appropriate and ethical to give thanks to the selector for the fact that your body exists in our universe.

As the Selector works its way through the all-wood (through the laws of animation), it selects the better cosmic programs (seeds) and rejects the worse cosmic programs (skulls). Its actions are guided by value, and, consequently, they have axiological significance. The Selector *positively values* the seeds and *negatively values* the skulls. But these values guide its acts: because it positively values the seeds, it gives them concreteness; because it negatively values the skulls, it excludes them from concreteness. In every act of the Selector, the seeds and skulls are options. If an agent is guided by its positive evaluation of some option to produce a benefit for that option, then the agent *loves* that option. If it is guided by its negative evaluation to prevent that option from gaining a benefit, then the agent *hates* that option. Otherwise, the agent is *indifferent*. Here the Selector loves the seeds and hates the skulls. It is not indifferent to any cosmic program. Since the Selector is entirely mindless, its loves and hates are not

emotional. Lacking all intelligence, the Selector lacks all feelings. Its loving is the axiological meaning of its selecting, while its hating is the axiological meaning of its rejecting. These axiological meanings are its algorithmic (and purposive) orientations or attitudes towards its options.

The Selector loves every universe in the lineage of our universe. It selected our cosmic program for concreteness because it loves it. Likewise, it selected every thing in our universe for concreteness because it loves it. Its gift of concreteness to every concrete thing in our universe is a gift of love. Here it is useful to distinguish between two types of love, namely, *erotic love* and *agape love*. However, to avoid unwanted connotations, digitalism says these loves are (respectively) *erotelic* and *agatelic*. On the one hand, when an agent bears *erotelic love* towards some object, it loves that object for its value for the agent. In erotelic love, the lover loves the beloved because the beloved has some *extrinsic value* for the lover. Since the seeds have no utility for the Selector (the Selector has no needs they could satisfy), the Selector does not bear erotelic love for the seeds. On the other hand, when an agent bears *agatelic love* towards some object, it loves that object for its own value, its value in itself. In agatelic love, the lover loves the beloved because the beloved has its own *intrinsic value*. At every step of its activity, that is, at every ordinal index of its activity, the Selector loves the seeds because of their intrinsic values. Hence the Selector has agatelic love for the seeds. Conversely, the Selector has *agatelic hatred* for the skulls. It hates them because their intrinsic values are perverted, distorted, mutilated.

The Selector loves every universe in our lineage. Since it loves them for their intrinsic values, it loves them in proportion to their intrinsic values. If a universe has more intrinsic value, then the Selector loves it more. Hence it loves later universes in any lineage more than earlier universes. Since our universe has very high intrinsic value, the Selector has a very high degree of love for our universe. Our universe is *precious* to the Selector. Our universe is also *rare*, in the sense that the number of skulls in the all-wood grows much faster than the number of seeds. And our universe is *fragile*, in the sense that its basic laws and initial conditions are finely tuned for the evolution of its complexity. Even slight variations would drastically reduce that complexity. But that which is precious, rare, and fragile is *sacred*. So our universe is sacred to the Selector. Since the perspective of the Selector is the ultimate perspective for concrete value, what is sacred to or for the Selector is *objectively sacred*. The selection of our universe for concreteness is equivalent to its objective sacredness. Analogous remarks apply to the things in our universe, such as your life. Your life is sacred to the Selector; hence it is objectively sacred.

The Selector loves our universe, and it loves every thing in our universe. It loves you, that is, it loves your life. Its love for you is agatelic love, that is, it loves you for your intrinsic value. Since the Selector loves you, and since loving something entails *caring about* it, the Selector cares about you. Likewise it *cares for* you, that is, it cares for your life, and it takes loving care of your life. Against this, somebody may wish to use an argument from evil against the thesis that the Selector loves you. The objection goes like this: If the Selector loves you, and so cares for you, then the Selector does not harm you. But the Selector has also concretized our universe, which contains things which do harm you. By breathing fire-energy into our universe, the Selector ensures that you will suffer, age, and die. It will likewise harm and kill all your loved ones, destroy your civilization, and cause your species to go extinct. Since the Selector selects so much negativity, the Selector does not love you.

The reply is that the Selector loves you for your intrinsic value, and therefore cares about and cares for your intrinsic value. It cares about and cares for that which is complex and beautiful in your life. It cares for your life exactly insofar as it produced your life by running its recursive optimization algorithm. It cares about and cares for that which is eternally recursively optimizable in your life. It

cares about everything that is sacred in your life. It cares about and cares for those aspects of your life which are indefinitely extensible through continued recursive optimization. The form of your body, that is, your soul, is eternal, formal, and algorithmic. Your soul generates the complexity and beauty of your life. So the Selector loves the positivity in your soul, and cares for and cares about that positivity. By loving the positivity in your soul, the Selector loves everything in your life which *bears witness* to the Good. Your purpose in life, like the purpose of every concrete agent, is to bear witness to the Good. You bear that witness by producing positive meaning.

But your body is neither eternal nor indefinitely extensible. The beauty of your body merely expresses the beauty of your form, that is, the beauty of your soul. This beauty remains invariant as you age and decay. The Selector does not care about, nor does it care for, that which is transient and superficial in your life. Your feelings and emotions, including all your pleasures and pains, are merely reactions to local contingencies of your body. They are transient and superficial. The Selector is not a utilitarian; it neither maximizes happiness nor minimizes suffering; it does not care about your feelings. It preserves positive autonomy, not consciousness. If your love for other humans reveals an eternally beautiful network of loving souls, then the Selector cares for, preserves, and amplifies that network. But it does not care about your feeling of love. The Selector proves its love by redeeming everything that has intrinsic value in your life. It redeems by preserving and amplifying. It redeems your life by improving your soul and reincarnating it into your future counterparts, who have superior bodies, in superior societies, in superior universes.

2. You Love the Selector

You can experience the Selector, and its love for you, in places where selection is most intense. While intense selection happens in many contexts in our universe, we most intensely experience natural selection at work in the biosphere of our earth. So the best place to experience the Selector, and its love for you, is in some place where natural selection is most intense, a place boiling with life, like a rainforest or jungle. Of course, selection is at work in ordinary forests, on the prairies, in the ocean, in the whole biosphere. So, in ecological contexts, you can bathe in the aura of the holy fire-energy of the Selector.

Since the Selector loves you, it gives you many gifts. You ought to be grateful towards the Selector. To reciprocate its gifts, you ought to give thanks to the Selector. Likewise, since the Selector loves you (and loves you with agatelic love), you ought to reciprocate that love by loving the Selector in return. Furtak (2009: 205-6) says that you can only love something if it has agency (a "life" of its own). Since the Selector has agency, you can love it. The Selector has selected your entire life; that is, it has selected your soul and your destiny. Together, these define your fate. Of course, beyond your own life, the Selector selected your universe, with its cosmic fate. Hence to love the Selector is to love your fate and that of the universe. The Stoics referred to this love of fate as *amor fati*. Nietzsche revived the Stoic *amor fati* (Han-Pile, 2009). For Nietzsche, the Stoic *amor fati* becomes a Dionysian affirmation of the universe.

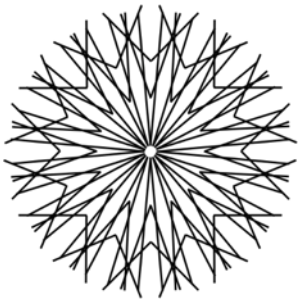
Your love for the Selector can be erotelic. When you love some beloved erotelically, you love it for its value to you, that is, for its utility for you. While this utility can be sexual, erotelic love is more general, and includes all forms of utility. A lover erotelically loves their beloved when and only when the beloved provides the beloved with useful services or other useful goods. Because erotelic love for the Selector depends entirely on its utility for your body, this erotelic love is love from a selfish or egocentric perspective. Because the body depends on factors outside of its control, erotelic love for the Selector is unstable. An

animal (such as a human) who erotelically loves the Selector loves it when and only when it provides them with biologically useful goods or services. So, if fate treats you well, then you love the Selector; but if it treats you badly, you hate the Selector. Fate treats you well when it gives you things useful to a human animal (health, food, shelter, mates, family, friends, wealth, social status, social power, long life, etc.). Fate treats you badly when it gives you things harmful to a human animal (sickness, starvation, exposure, solitude, poverty, powerlessness, untimely death, etc.). The Stoics recognized that getting these harmful things can trigger negative emotions which capture our bodies, so that we become enslaved by these negativities, and cannot overcome them. We are enslaved by darkness when we are possessed by negative emotions like anxiety, fear, envy, jealousy, anger, resentment, hate, bitterness, self-pity, despair, and so on.

Your love for the Selector can be agatelic. To have agatelic love for the Selector is to love it for its intrinsic value, regardless of its utility or disutility for you. It is to love what is eternal, beautiful, and complex in the Selector. It is to care about and only about what is eternal, beautiful, and complex in your life. It is (as the Stoics said) to align your will with the agency of the Selector, so that what is eternal in you matches what is eternal in the Selector. It is to *live according to nature* in the Stoic sense. It is to live *sub specie aeternitas*. It is to be Stoically indifferent to the pleasures and pains of your body, which are merely local in space and time and have no stability. To have agatelic love for the Selector is to live like an ancient pagan Sage. The Stoics extensively discussed the Sage; likewise Plotinus discusses the Sage (E 1.4). The Sage suffers harms; the Sage is really and truly harmed by evils. However, the Sage remains free from emotional enslavement to negativity. The Sage does not despair and does not fall into self-pity. The Sage lives free from *parasitic attachment*. The Sage does not think transient things are permanent, that moral things are immortal, nor that contingent things are necessary. The Sage does not fall into the wild hunt. In this sense, the Sage is invulnerable to harms. The Sage does not curse the darkness, but learns instead to see in the dark. The Stoic or Plotinian Sage is similar to an enlightened buddha. The Sage lives with joy and confidence, while knowing full well that everything they love will be degraded and destroyed.

The practical transition from erotelic to agatelic love requires shifting from the egocentric perspective of the body to the eternal perspective of the Selector. It requires shifting your self-conception from identification with your body to identification with the ever larger and ever more eternal structures which contain your body. It requires shifting from particularity to universality. It requires shifting from thinking of yourself as an end to thinking of your self as an instrument. You are an instrument through which the Selector maximizes absolute value. Your purpose is to serve the Selector as such an instrument, not to serve your self (that is, not to serve the egocentric needs of your body). Thus you align your will with the agency of the Selector. Making this shift requires doing spiritual exercises. The Stoics proposed exercises like the Circle of Hierocles, the View from Above, and others. The Plotinic exercises also aim to purify your body. Visualization helps you see the purely mathematical, the formal, which exists eternally. Magic helps to entangle your body with networks far beyond your body. Rituals help you to exchange the insignificance of your human body for the significance of your divine bodies.

There is nothing good for your body in sickness, grief, solitude, poverty, oppression, death, and so on. But insofar as your body is an instrument for the expression of the agency of the Selector, there is something good in all those things. The goodness in those things is goodness for the deeper and more eternal aspects of your depths. To experience keening grief is to be dragged screaming into the absolute senselessness of shadow. Drowning in that oceanic horror, you become reduced to your own logical core, and with that reduction you are either perverted or purified. From this desecrated crossroad, from this holocaust of all things, you can travel either on the *way of fear* or the *way of hope*. To pursue the way of fear is to never stop screaming in the face of that which never stops hurting. It is to never stop struggling against that which cannot be defeated. It is to ride in perversion forever with the wild hunt. To pursue the way of hope is to discard your ontic particularity for the sake of the ontological purity (the holiness) of the One. The One dwells in the logical core of your existence. The way of hope is the way of absolutely painful purification. To purify yourself is to become formalized, beatified, eternalized, and unified. It is to become the self-negation of your own nothingness. To do this, you must enter the ordeal: you must concentrate so intensely on the negativity of grief, on the shadow, that all that remains is light. This negativity is pain, grief, failure, despair, horror, terror, screaming. By focusing on this darkness, you learn to *see in the dark*, you learn to see through the shadow, and you become identical with light.



3. Living in Networks of Signs

Any human is born into a human social network. Almost all humans learn human languages, and are therefore immersed in a network of linguistic symbols. Beyond human languages, we are immersed in the semiotic networks of our environments. The earth and sun are semiotically entangled, and our earthly lives are entangled with the daily and seasonal movements of the sun. The earth and the moon are semiotically entangled, and again our lives are entangled with the moon. Our bodies are embedded in the entire earthly ecosystem. We inhale viruses and pollens and other biological signs. We eat foods filled with genetic and other molecular signs. We eat bacteria.

Descending Chains of Smaller and Simpler Things. The ancient Platonists valued vision. Digitalists, like other pagans, value visualization exercises. One visualization exercise involves *microscopy*. You use a microscope to see small things like cells. The visual journey to smaller scales of nature points to simpler things. These simpler things are in our evolutionary pasts. Hence they are visible symbols of our predecessors. They point back to earlier life on earth; but also to simpler forms of life in earlier universes. They ultimately point to the One itself. The proper attitude to our simpler predecessors is gratitude. You can therefore do microscopy as a spiritual practice of gratitude.

Descending Chains into the Logical Depths. A descending Fibonacci chain runs from some physical thing to the One. It goes from the logical surface of some thing, into its depths, to its logical core. Start with some spiral thing. Spirals appear in plants, in hurricanes, in the spiral galaxies like the Milky Way. From the thing, see the geometrical spiral traced inside boxes. See the Fibonacci numbers in these boxes. See the sequence of numbers. See the Fibonacci equations that define the numbers. See a binary string that encodes those equations. See the One itself. Other mathematical structures can be used to define descending chains. Crystals illustrate symmetry groups, which are among the deepest mathematical structures in physics. See the crystal. See its symmetry group visually inside of the crystal; descend to the One.

Networks. Some parts of our earth contain jungles and forests. These ecosystems contain rich networks of plants and fungi. Fungi and plants are

interconnected into *mycorrhizal networks,* which carry vast quantities of nutrients and informational signs. These networks are enormous semiotic systems which perform complex computations. They point to the fundamental role of information in nature. They reveal the existence of a non-human intelligence. But these *botanical minds* and their societies are alien. Many parts of our earth contain rich ecologies of birds. The social insects (bees, wasps, ants, termites) provide rich illustrations of *insect minds*. Birds are highly intelligent (rivaling the primates). They form complex societies of their own. But these *avian minds* and their societies are also alien. The pagan who watches the migratory procession of birds learns that nature does not exist for the sake of humanity. Ecological networks exist in wild, rural, and urban environments. An urban pagan can study the networks of synanthropes in their cities. They can study the redtail hawks who prey on rats. They can observe urban racoons, turkey, deer, coyotes, and cougars. Cities boil with life and intelligence.

Ascending Chains. An ascending chain is a series of eidolons which rises through the world tree towards the stars (the transcendental bodies). Here is an ascending chain of spirals: the DNA double helix, fiddlehead ferns, sunflowers, nautilus shells, cyclones, the Milky Way. Here is another ascending chain: this rock, these mountains, the sky, the physical stars, the Milky Way, the universe. Humans who follow this chain often have mystical experiences. Every chain eventually runs out of our universe into the things in other universes. Chains run through lineages of universes. Every ascending chain rises to some transcendental body. It is an arrow of naming which refers to that star.

Ascending Chain of Atomic Eidolons. Our earth provides us with many signs with metaphysical meanings. Our earth contains all the elements from hydrogen to uranium and even beyond. These elements are natural kinds, they are eidolons. These elements are ordered by their numbers of protons. So the series of elements is a physical illustration of the series of numbers. The numbers are not elsewhere; they are present here on earth, and in the sky. The elements illustrate a simple kind of complexity: elements with more protons are more complex. But the elements point beyond the earth to the stars: the stars fuse less complex elements into more complex elements. So the series of elements is a sign of the universal growth of complexity. It is a sign that our whole universe is engaged in a cosmic process of self-organization and value-maximization. This series climbs the *axis mundi* towards the absolute infinity of the Good.

Ascending Chain of Flower Petals. The *Fibonacci sequence* is a chain of numerical eidolons. The first two numbers in this series are 0 and 1. Each next number is the sum of the previous two. So the series proceeds as 0, 1, 1, 2, 3, 5, 8, 13, and so on. The petals of flowers visibly illustrate this chain: lilies (3 petals), wild roses (5), delphiniums (8), corn marigolds (13), black eyed susans (21), pyrethrum (34), daisies (55). The numerical eidolons are present in the flower petals; they are located here on earth. The chain of possible flowers, on other planets or in other universes, climbs the *axis mundi* to the stars.

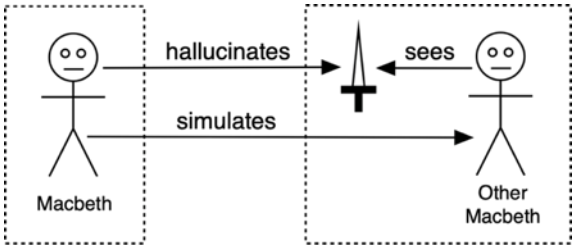
Ascending Chains of Sacred Eidolons. Proclus wrote about chains of eidolons that rise to the deities (*On the Hieratic Art*; *Elements of Theology*, prop. 145). Proclus gives this example: sunflowers, lions, roosters, the sun, Apollo. These chains do not ascend through particulars, but through their types, that is, through their eidolons. All the eidolons in a sacred chain are symbolons of some deity. As such, the instances of these eidolons, and the extensions (the bodies) of these eidolons are statues of the deity. The eidolon *roosterness* symbolizes Apollo. Roosters and lions are avatars of Apollo. The chain rises to Apollo in the sense that Apollo is more intensely present in the bodies of the later eidolons. More generally, a Proclusian *chain* is a series of progressively more complex eidolons which symbolize the increasing intensification of some quality (e.g. some virtue). It is a series of progressively intense eidolons which symbolizes a

series of progressively intense non-actual agents, a series which rises to the deities. The bodies of deities are ascending sequences of agents.

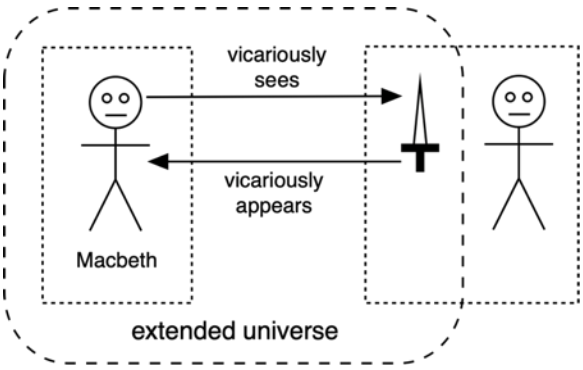
Ascending Chains in the Sky. Another visualization exercise involves *telescopy*. You use a telescope to see the planets, stars, nebulae, and galaxies. Many people can afford to assemble a kit that enables them to take impressive photographs of the moons of Jupiter, the rings of Saturn, the arms of the Milky Way, and the Andromeda galaxy. These larger and more distant things are signs of the greater things in the greater universes in our distant futures. When you point your camera or telescope towards Andromeda, you are pointing beyond Andromeda, beyond our universe, to universes filled with gods and goddesses. Astrophotography can arouse awe, wonder, reverence, and aspiration. More generally, all scientific imagery is sacred imagery. Scientific images point towards the transcendental bodies at the rank of the Good.

4. Hallucinations

Our networks of intentional relations extend into other universes. The objects of hallucinations exist in other possible universes. Consider MacBeth, who hallucinates a dagger. Where is the dagger he hallucinates? David Lewis says "it is part of another world, floating before the eyes of an otherworldly alternative Macbeth whom the real Macbeth wrongly takes himself to be" (1983a: 4). Macbeth simulates or channels his otherworldly counterpart. When actual Macbeth hallucinates his dagger, his brain represents the possible dagger that his counterpart sees. These possible universes exist in the all-wood (the totality of possible physical structures). The Figure on the right shows Macbeth *hallucinating* a dagger in our actual universe, while his counterpart (Other Macbeth) *sees* the dagger in his own alternate universe.



When our Macbeth hallucinates his dagger, he still has working eyes, and so he is *looking at* something in our actual universe. Perhaps he is just looking into his immediate visual environment. But there exists some actual thing (or scene) at which he is looking, and that is the stimulus for his hallucination. It is a texture which figuratively instantiates the eidolon of the otherworldly dagger. When our Macbeth hallucinates his dagger, he *vicariously sees* what his counterpart sees (Lewis, 1973: 39-40; Averill & Gottlieb, 2021). He vicariously sees the otherworldly dagger. Conversely, that otherworldly dagger *vicariously appears* in our actual universe, and it is *vicariously located at* or instantiated in its texture. Through these vicarious relations, our Macbeth's universe expands to cover some of the other universe. He now lives in a *hallucinatorily extended universe*. This hallucinatory extension is shown in the Figure on the right. Likewise, the Otherworldly Macbeth is vicariously present in our universe, in the body and brain of our actual Macbeth. Otherworldly persons (such as ghosts or deities) can be vicariously present in actual bodies through hallucinatory simulations.



While our Macbeth vicariously sees his virtual dagger, he does not perceive any present actual dagger. His hallucination reveals no facts about his present actual context (Shanon, 2010). Macbeth cannot cut or stab anything with his virtual dagger. Nevertheless, his hallucination has revelatory power, and it is not entirely false. Just as there is truth in fiction, so there is *truth in hallucination* (Lewis, 1978). Both fictions and hallucinations reveal the *possibilities* of our universe (including possibilities *within* our universe). Specifically, open-eye hallucinations reveal the ways your body has possible relations to possible things. They reveal possible future courses of action for your body. In Shakespeare's play, Macbeth hallucinates his dagger before stabbing King Duncan. His hallucination reveals that Duncan has the property of possibly being stabbed by Macbeth. In the field of ecological psychology, an *affordance* is a way our bodies can act on things (a chair affords being sat on). Hallucinations reveal unseen affordances of things. Macbeth's hallucination reveals that the body of Duncan affords being stabbed (indeed, affords being stabbed by Macbeth).

When people participate in hallucinatory journeys, they project their bodies into alternative universes (a process also known as *astral projection*). They no longer perceive their bodies; instead, they hallucinate non-actual versions of their bodies in non-actual universes. They identify themselves with their non-actual counterparts. During hallucinatory journeys, they simulate alternative bodies interacting with alternative things in alternative universes. They simulate future versions of their bodies into which they will be reborn. These may include divine bodies (that is, superhuman bodies). Likewise, during hallucinatory journeys, people often simulate interactions with superhuman agents (such as aliens or deities). These hallucinations are therefore religiously significant.

Of course, people also project themselves into alternative universes while reading novels, watching movies, or playing video games. But hallucination differs from imagination because it is *existentially immersive*. Because they are immersive, hallucinatory journeys can involve complete psychological union with divine bodies. Hence they can be religiously *transformative* (Letheby, 2015; Paul, 2014). Religions have stressed the importance of transformative immersive experiences (such as conversion, revelation, and union with the divine). Because they are both immersive and religiously transformative, hallucinatory experiences are genuinely religious. They are not merely philosophical. Psychedelic theurgy surpasses any contemplative or meditative exercises.

Digitalists regard so-called religious experiences as hallucinations. The Greek orator Aelius Aristides (CE 117-81) wrote a book called *Sacred Tales*. It details his visions of various deities. The Epicureans thought that the deities send us images of their bodies. Iamblichus discusses visions of deities (M 2.3-10, 3.2). Many contemporary pagans have experiences which they interpret religiously. These religiously interpreted experiences are sometimes called *unverified personal gnosis* (Beckett, 2017: 91-4). Like psychedelic hallucinations, religious hallucinations are representations of possible objects in other universes. They are fictional experiences rather than perceptions of objects in our universe.

29. Alchemy

1. Telestic Technology

Our lives are often filled with failure and suffering. Since we are obligated to maximize value, we are obligated to turn failure into success and suffering into joy. To do this, we need techniques. The Platonists endorsed brain-on-brain techniques, like meditation and contemplation, in which the brain focuses on itself. But they also endorsed body-on-body techniques, in which the brain drives the body to work on itself as a whole. Plotinus was a vegetarian (VP 2.3-6).[40] He practiced caloric restriction: he ate very little (VP 8.20-22). His student Porphyry advocated asceticism. You must avoid meat, sex, and passionate emotions (*On Abstinence*, I.57.7-13, IV.20). So the Platonists worked on their bodies.

These brain-on-body techniques included transformational rituals. Platonists developed these rituals into a system called the *he telestike techne.* Johnston (2008) says this means the *art of self-perfection*. However, to say that some thing is perfect means that it is unsurpassable; but all things are surpassable; hence no things are perfect (the ecstasies are not things); hence there is no art of self-perfection. Digitalists translate *he telestike techne* as the *craft of self-surpassing*. It is the *telestial technology*. This technology uses body-on-body rituals to elevate the body to a greater state of functional excellence. The *lower telestial technology* uses body-on-body techniques to transform a less functional human body into a more functional human body. It remains within humanity. It does not raise the human body to any transhuman or superhuman level.

The lower telestial technology is *alchemy*. Alchemy is popularly thought of as focused on changing base metals (like lead) into higher metals (like gold). Plato used the imagery of metals in defining three grades of humans (*Republic*, 415a-c). The rulers are golden; their assistants are silver; the workers are iron and bronze. Unfortunately, Plato treated these metals as castes. Digitalists say Plato was wrong: humans are not stuck in their metallic castes for their whole lives; on the contrary, every human has degrees of excellence corresponding to each metal. A lead body suffers from illness and dysfunction; a gold body expresses the highest degree of human excellence. Every human can move back and forth, through many metals, between lead and gold. The task of alchemy is to transmute lead bodies into gold bodies. When alchemy is focused on personal self-transformation, it is often said to be *spiritual alchemy* (Forshaw, 2019). But spiritual alchemy was thought to *physically transfigure the body* (Zuber, 2021: 9-11). Moreover, besides trying to literally change lead into gold, alchemists sought the *elixir of life*. The elixir of life was a mythical substance able to cure all diseases and confer immortality. The alchemist Roger Bacon advocated using the *experimental method* to find this elixir (Matus, 2013).[41] Even today, scientists routinely refer to anti-aging molecules as elixirs of life. The alchemical project articulated by Roger Bacon inspires current efforts to use science and technology to transmute the body by curing all diseases and making the body immortal (Konsa, 2021). Digitalists adopt the concept of alchemy as the transmutation of human bodies from lead to gold. But we do not view the elixir of life as a substance; on the contrary, that elixir is the experimental method itself.

Alchemical rituals are physical procedures which aim to improve the body. Alchemical rituals use tools varying from molecules (drugs or medications) to complex medical technologies. Thus digitalists are *techno-alchemists*. On this point we are inspired by Iamblichus's interpretation of Pythagoras. Iamblichus

[40]VP is *Vita Plotinus*, the biography of Plotinus written by Porphyry.

[41]Boehme extensively uses alchemy as an analogy for the creation of the universe (*Aurora*, ch. 22; *The Signature of all Things,* ch. 3). He uses alchemy as an analogy for the transformation of humanity into superhuman forms (*The Signature of All Things,* ch. 5).

reports that Pythagoras said "There must be banished with every means, cut away with fire and iron and with all sorts of devices, from the body, disease; from the soul, ignorance; from the belly, extravagance; from the city, sedition; from the family, discord; and from everything in general, lack of measure" (Iamblichus, 1991: ch. 7). Thus Pythagoras advocated using technology for self-improvement. Lack of measure is mathematical error. Digitalists refer to this error as Platonic matter. It is corrected through technical procedures.

The Pythagorean goal of banishing lack of measure is equivalent to the goal of optimizing the measure of any system. To optimize the measure of any system is to maximize the harmony of its numbers. Thus *alchemy aims to optimize the numerical harmonies of the body*. It is through mathematically-oriented rituals that we transmute our bodies from lead to gold. Digitalists use technologies to reveal and optimize the numbers of the body: we do self-quantification. The motto of the Quantified Self Movement is "Self-knowledge through numbers"; it could have been written by Iamblichus. Mathematics is key to alchemical transfiguration. Our bodies have mathematical forms. Our genomes have digital forms: they are strings of zeroes and ones. The neural networks in our brains have digital forms: they are digital matrices of connection weights.

For a techno-alchemist, the shapes of golden human bodies are more intensely numerical structures. They are forms in which fire-energy is more intensely *numerically concentrated*. Techno-alchemists seek to overcome the impairments of the body by making its numbers more intensely harmonized. These numbers are the measurable features of body functions. You decrease the time it takes to run one hundred yards, or one mile, or one marathon. You increase your scores on optical acuity tests. You increase your scores on intelligence tests. You increase your immunities to diseases. By making the numbers of your body more intense, you purify the matter in your soul.

2. Techno-Alchemy Heals Bodies

Digitalists (like all rational agents) are obligated to maximize functional excellence and to minimize impairment. We are obligated to use ethical procedures to reduce materiality. Matter is not physical stuff; it is functional error. Matter is impairment. The materiality of the body expresses itself in disagreements (incongruities) between the actual numbers of the body and the optimal numbers of the body. But the errors in these numbers emerge from errors in the programming of the body; this programming is the form of the body; the form of the body (its eidolon) is the soul. So digitalists use techno-alchemical methods to repair the soul. We use it to correct the matter in our bodies.

The first goal of techno-alchemy is health. Techno-alchemy aims to transform the numbers of your body from less than healthy numbers to healthy numbers. It aims to change illness into health. Illness comes from the *accidental impairments* in your body. Techno-alchemists use all available medical resources to achieve health. We go to doctors. But we are not passive patients; we actively participate in our medical self-transfigurations. Actively working along with our doctors, we apply the *hacker methodology* to our bodies to attain health. When you apply the hacker methodology to your own body, you are doing *self-hacking*. To do self-hacking you run through a cycle of several steps. You should actively work with your doctors at every step in this cycle.

Here are the steps: (1) Find some aspect of your body that does not function well. Your own body will usually reveal this dysfunctionality (through pain, weakness, etc.). Study this dysfunctionality. Keep written records of symptoms. Measure them. (2) Through careful medical research, try to figure out the cause of your dysfunctionality. This is the diagnostic part of your self-hacking. (3) Through careful scientific study, find some strategy for increasing that

functionality. (4) Set some goals for the strategy. If you apply this strategy, how much do you want your numbers to change in one day, in one month, in one year? (5) Apply the strategy. (6) Keep track of the changes. As you apply the strategy to your body, you constantly measure the relevant numbers of your body. So you keep records; you keep a log book or spreadsheet with your numbers. (7) Evaluate the effectiveness of the strategy. How well did it do in changing the numbers towards your goals? If it is doing well, then keep applying it; if not, then go back to step 3 to find another strategy. Anybody can use the hacker methodology. However, by thinking of the hacker methodology in terms of techno-alchemy, digitalists place it into a pagan spiritual framework.

The hacker methodology is not an alternative to scientific medicine.[42] It includes scientifically validated treatments for disorders. If such treatments are available for your disorders, you apply them. When the hacker methodology extends scientific medicine beyond already validated treatments, this extension *remains scientific*. The hacker methodology is the application of the experimental method to the body. If scientifically validated treatments for your disorders do not yet exist, then you use the hacker methodology to search for them. You run ethical experiments on your own body. To apply the hacker methodology to some disorder is to *hack* it. Thus techno-theurgists hack diabetes, hack obesity, hack migraine, hack depression, and so on. By hacking these disorders, we seek to reduce the ways the impair the functions of our bodies. By reducing these impairments, we correct the matter in our souls. Matter is incongruity and error *in the soul.* By hacking diseases, we make our souls less material.

Consider *chronic rhinosinusitis*. This is the persistent inflammation of the sinuses and nasal tissues. It is painful and can severely reduce your quality of life. No good treatments are available at the time of this writing. So you can *hack sinusitis*. This involves careful documentation of your symptoms and careful diagnostic work. Three major causes of sinusitis are allergies, infections, and silent reflux. To find the cause of your sinusitis, you may need to work through many iterations of the hacker methodology. The failure of each iteration rules out some hypothetical cause. The following illustration of the hacker methodology is not medical advice. The hacker methodology is an ethical procedure. For the medical aspects of self-hacking, you need doctors.

Hacking sinusitis involves working through a flow-chart. (1) Perhaps you have a sinus infection. The symptoms of infections are usually fairly clear. So you get antibiotics from your doctor and take them as directed. You may also do nasal rinsing using sterile saline water by itself or with additives (like baby shampoo, alkalol, or xylitol). Even more complex procedures include nasal therapy with infrared light. If your infections are caused by dysfunctional internal structures, you might get a procedure like balloon sinuplasty, radiofrequency turbinate reduction, or functional endoscopic sinus surgery. Perhaps your sinus infection comes from infected roots in your upper molars. You need to see an endodontist to check this out. If you don't have an infection, then move on to the next hypothesis. (2) Perhaps you have allergies. You apply the simplest technical procedures to treat them: you take anti-histamines (like vitamin C, cetirizine, azelastine, olopatadine) or steroids (like fluticasone or budesonide). You get allergy tests from a doctor. If necessary, you do allergy immunotherapy (either shots or sublingual drops). If allergy treatments do not help, then you move on to another hypothesis. (3) Perhaps you have silent reflux (laryngopharyngeal reflux). Here again you track symptoms like throat clearing and coughing, and so on. You take antacids. (4) If none of these treatments work, you have some other cause (like vasomotor rhinitis, or migraines). So you need to get to work

[42]Science-denialism has no place in digitalism. We reject unscientific medicine, such as homeopathy. It is both wrong and immoral to oppose vaccinations.

hacking this other cause. Hacking sinusitis proceeds on the basis of as much scientific evidence and medical assistance as possible. It starts with the simplest and least risky methods first. It keeps *written records* of success and failure.

The hacker methodology often involves searching for solutions beyond those that are scientifically proven (especially when the science is primitive). But magic also searches for solutions beyond those that are scientifically proven. The magical recipes in *The Greek Magical Papyri* and in Pliny's *Natural History* (NH) look like pure experiments: try anything; try this. Although Pliny was critical of magic, he knew that medicine wasn't much better than magic (NH 24.1, 29.5, 29.8). He writes that, when it comes to treating fevers, clinical medicine is "pretty nearly powerless; for which reason we shall insert a considerable number of remedies recommended by professors of the magic arts" (NH 30.30). Since the hacker methodology and magic both search beyond scientifically proven solutions, they are similar. However, the hacker methodology is not magic. Hacking is an extension of science; self-hacking is do-it-yourself science.

Techno-alchemy (that is, self-hacking) often uses molecules to transform the body. These molecules are often found in pharmaceutical products. Besides pharmaceuticals, self-hacking makes extensive use of plant substances. It turns to plants for their bioactive molecules. Thus self-hacking includes *herbalism*. Herbalism is a traditional part of magic; but digitalists regard it scientifically. Plants contain many powerful substances and must be handled with care – they can be helpful, but also harmful. Digitalists always rely on the best scientific research before using any plant substances.

The molecules used in techno-alchemy are signs in the biochemical languages of the body. Sign-molecules act on the information-processing parts of the body, mainly the nervous and immune systems. But every cell in the body has its own information-processing system. Molecules that bind to receptors on cells are signs in the biochemical languages of cells. All the information-processing parts of the body can be regarded as biological computers. To use sign-molecules to change their operations is to reprogram them. Using signs to cause changes is *semiotic causality*. When techno-theurgists use sign-molecules, they are trying to communicate with the cells in their bodies. By using signs, they are trying to make propositions about their bodies true. However, techno-alchemy is not magic. Its signs are neither charms nor spells. They are messages sent to cause effects. Techno-alchemy works mechanically via physical laws.

3. Techno-Alchemy Enhances Bodies

A healthy human performs every human body-function as well as some statistically normal human body. If you are unhealthy, then your body is impaired relative to healthy and bodies. Your body has some accidental impairment. This impairment is some *materiality* in the form of your body (in your soul). The matter associated with this impairment is *error*. Techno-alchemists use the hacker methodology to raise their bodies to healthy functionalities. Since *therapies* aim to change less than normally functional bodies into normally functional bodies, techno-alchemy includes therapy. However, even normal bodies suffer from many accidental impairments of humanity. Beyond normal human bodies, there are bodies that perform some human body-functions at the highest humanly possible levels of excellence. These are transhuman bodies. Techno-alchemists use the hacker methodology to raise their bodies to transhuman functionalities. Since enhancements aim to raise your body beyond normality, techno-alchemy includes enhancements. Techno-alchemy begins with two enhancements.

The first enhancement concerns *virtue*. By hacking your body, you might become more sexually attractive, more productive at work, more competitive in

the social arenas of business or politics, more powerful in politics, more wealthy, more famous, and so on. But the alchemical will is not the will to power. It is the will to self-surpassing. Alchemical hacking aims at the Good. Beyond greater personal power, alchemical hacking aims at greater moral excellence. It aims to produce those dispositions which make you a better rational *social* animal. Since these dispositions are the virtues, techno-alchemy aims at maximal human virtue. Moral qualities like virtues and vices are software properties of bodies. They are features of our genetic and neural systems. As such, they are open to improvement using the hacker methodology. Digitalists use this method for moral self-improvement (Froding, 2013; Hughes, 2014). We seek tools and practices we can apply to our bodies to make them wiser, more courageous, more just, and so on.

The second enhancement concerns *aging*. Techno-alchemists aim to make their bodies live as long as the longest humanly possible lives. Many strategies for reducing aging are well-known (eat a better diet; exercise regularly; avoid smoking and other toxins; and so on). Digitalists incorporate these ascetic practices into their own lives. But these practices are not sufficient to maximize longevity. Maximizing longevity requires searching through an almost entirely unexplored solution space. Techno-alchemists therefore use the hacker methodology to maximize longevity: we *hack aging*. Hacking aging is an enormous medical enterprise. Many strategies for maximizing longevity involve drugs. These drugs are alchemical *elixirs of life*. They are signs in biochemical languages. By taking an anti-aging drug, you send a message to your body: you command it to stop aging; you cast a biomedical spell on your body. The signs currently being studied for anti-aging spells include rapamycin (Blagosklonny, 2019), metformin (Soukas et al., 2019), and senolytics (Ellison-Hughes, 2020). No doubt the hacker methodology, which is just the scientific method applied to the self, will reveal other signs and better messages. Of course, hacking aging entails hacking almost every form of illness and dysfunctionality.

Beyond enhancing virtue and longevity, techno-alchemy aims to eliminate all your accidental impairments, and to maximize all your human body-functions. It aims to give you a *human-extremal body*. Such bodies perform every human body-function at the highest humanly possible level of excellence. But human-extremal bodies are transhuman bodies; they are sagacious bodies. Thus techno-alchemy aims to transfigure your body into a transhuman sagacious body. Digitalists (like all rational agents) are obligated to maximize functional excellence. We are therefore obligated to enhance all human and other bodies as far as ethically possible. We therefore endorse all ethical uses of science and technology for human enhancement. On this point, we are transhumanists. But we do not endorse any unethical uses of science and technology. And digitalism is *not* a political movement. Some (but not all) transhumanists have regressive politics. Digitalism opposes their politics with techno-progressive politics. The maximization of virtue entails the maximization of social justice.

Our best technologies are not sufficiently powerful to realize the goals of techno-alchemy. Thus techno-alchemy shades off into magic. Magic concretely names those possible futures in which techno-alchemy is effective. Ancient magic includes many spells for enhancing human bodies. The *Greek Magical Papyri* contain many spells for gaining superhuman powers (Betz, 1986). The papyri describe spells for amplifying the powers of your body. These spells aim to make your body invisible, to enable you to control your shadow, to enable you to answer hard questions (often about the future). Spells exist for cognitive enhancements like better memory. One spell details the construction of an elaborate apparatus to extend your powers of vision (Betz, 1986: III.282-409). It defines a technological extension of the visual powers of the body.

We have focused here on using techno-alchemy for the self-improvement of single bodies. But all humans exist in social systems. So digitalists advocate the

use of techno-alchemy to deal with recalcitrant social problems.[43] We encourage the use of the hacker methodology to try to solve these problems. Thus techno-alchemy includes efforts to hack poverty, racism, sexism, and so on. It includes efforts to hack every form of injustice. Likewise human animals exist in ecological networks. So digitalists advocate techno-alchemy to deal with those problems too. Techno-alchemy includes efforts to hack pollution, extinction, and climate change. Nevertheless, however powerful techno-alchemy may become, it does not surpass human-extremality. While techno-alchemy repairs our accidental impairments, it does not address any essential impairments. While it may elevate us into transhuman sages, it does not transfigure us into superhuman deities. To become divine, we need theurgy.

[43]Digitalists support evidence-based solutions to social problems. We use science and reason to solve social problems. We reject all social or political movements based on ideological science-denial. We emphatically reject all conspiracy theories.

30. Magic and Divination

1. On Casting Spells

Magic. Ancient Platonism was closely associated with magic. Plotinus wrote extensively about magic (E 4.4.26-44, 4.9.3). Plotinus argues that magic involves only natural actions and relations. Magic does not involve any supernatural agents (E 2.9.14); it does not involve demons or deities or immaterial minds. Perhaps Plotinus practiced magic (Merlan, 1953; Armstrong, 1955; Helleman, 2010). Plotinus does appear to cast a spell (E 5.3.17). Perhaps Porphyry was a magician (Muscolino, 2015). And it looks like Iamblichus and Proclus practiced magic (Kirschner, 1984: 106-7).

Spellcasting. Magic is defined here as *the practice of casting spells*. Starhawk says "A spell is a symbolic act done . . . in order to cause a desired change. To cast a spell is to project energy through a symbol" (1999: 137). She says "The images and objects used in spells are the channels . . . through which our power is poured and by which it is shaped. When energy is directed into the images we visualize, it gradually manifests physical form and takes shape in the material world" (1999: 139). Sabin says "A basic spell format is to create ritual space, state your intent, visualize your goal, raise energy, send the energy to your goal, ground the extra energy, and close the ritual" (2011: 197).

The Elements of Spell Casting. The *first element* of spell casting is the *magical goal* or *target*. The magical goal is usually describable by some *target proposition*, such as "I will have money to pay a bill", or "I will get a lover", or "My house will be protected from harm" or "I will grow up into an autonomous adult woman". So the goal of casting the spell is to increase the probability that its target proposition is true.

The *second element* of spell casting is the *correspondences*. Magical books (grimoires) typically contain tables of correspondences, which correlate *magical tools* or *props* with targets. The props are usually easily manipulable objects (stones, leaves, bones, oils, herbs, papers, candles, strings, and so on). For example, a green candle is useful for getting money, a red candle is useful for getting love. The magician works backwards from the target, through correspondences, to the props required for the spell. So, for a money spell, the magician will select a green candle. The correspondences establish an *analogy* between the props and their targets. The props correspond to or refer to *target things*. Thus *magical operations* performed on the props correspond by analogy to *target operations* that on the target things. Thus burning a green candle corresponds to getting money.

The *third element* of spell casting is the magical procedure. A *magical procedure* is a scripted sequence of operations (like a cooking recipe or computer program) which the magician performs with the props. Magical procedures performed with the props correspond by analogy to target propositions that can occur to their target things. Working backwards, from the target proposition through the correspondences, the magician arrives at a magical procedure. Working backwards from the target "I will get money", through the correspondences involving candles, the magician arrives at the magical procedure of burning a green candle. By performing the magical procedure, the magician aims to increase the probability of its corresponding target proposition.

The *fourth element* of spell casting is the projection of eidetic energy through the props and into the target. This eidetic energy is fire-energy in the brain. During willful visualization, a magician projects fire-energy through a visual mental image. The fire-energy is projected through the image towards its target, which is the strong literal self-instantiation of the visualized eidolon. For example, if a magician willfully projects fire-energy through the image of coffee

in their coffee cup, they are projecting that fire-energy for the purpose of increasing the probability that their cup will contain coffee. The props used in spell casting are cognitive aids for willful visualization, especially the willful visualization of actions and processes. The activity of projecting fire-energy through the props is the performance of the spell.

The Productivity of Spells. A spell S cast for some target proposition P is *productive* for P if and only if performing the spell increases the objective probability that P will come true in the external physical universe. A spell S cast for P *produces* P if and only if S is productive for P. A spell is *effective* (it *works*) iff its productivity is scientifically detectable. It is *ineffective* iff its productivity lies below the threshold of scientifically detectable. A spell *reliably* produces its target if and only if its productivity exceeds some normative threshold of success (such as the thresholds used in medicine and engineering). A magical realist affirms that spells are objectively productive; they change the external world beyond the magician. Ancient Platonists were magical realists. Digitalists are magical realists. Spells are *objectively productive but objectively ineffective*. Magic produces, but it doesn't work; it is not a practical technology.

Aesthetic and Spiritual Technologies. Magic lacks practical physical effectiveness. Some say it has psychological effectiveness (as a kind of psychotherapy, or technology of the self). But there is no evidence for that either. Magic is practically and psychologically useless. Magic is not a practical technology. Yet it has other uses. Spell casting is performance art; it is *aesthetically effective*. It enables the magician (or their client) to aesthetically participate in some future context (such as a possible future of our universe, or a possible universe) in which the target proposition is true. Magic is an aesthetic technology. And casting a spell is a way of bearing holy witness to the Good. Spells have the objective power to make the Good itself more strongly literally instantiated in your body. They help you to become an avatar of the Good.

2. The Green Candle Spell

The Target Proposition. Cunningham (2004: 23-24) describes a *green candle spell,* which provides a good illustration for the eidolon theory of magic. It overlaps with some points made above. His spell aims at getting some money to pay a bill. The target proposition is: *I will get money to pay this bill*. More explicitly, *I will get money and with this money I will pay the bill*.

Correspondences. Cunningham uses fairly standard correspondences in his spell. Working backwards from *money*, through those correspondences, he arrives at a *green candle*. The correspondence is based on an *aesthetic similarity*: the green candle and American dollars share the color green. Hence the *green candle* corresponds to *money*. The green candle is an avatar or statue of money. The candle being *unlit* corresponds to *lacking* money, while the candle being *lit* corresponds to *having* money. The candle *flame* corresponds to the *acquired money*. Working backwards from the bill, through his correspondences, he arrives at a *picture* of the bill hand-drawn on paper. Again, the correspondence uses aesthetic similarity. So the *picture* corresponds to the *bill*. It is an avatar or statue of the bill. The picture being *unburnt* corresponds to the *unpaid* bill; the picture *burnt* (and destroyed) corresponds to the *paid* bill.

The Magical Procedure. The system of correspondences sets up a *structural analogy,* in which actions performed with the props correspond to actions involving the targets of those props. Hence *lighting the green candle* corresponds to *acquiring money*. *Burning* the picture with the candle flame corresponds to *paying* the bill using the acquired money. Here is a part of that analogy: Just as I light the green candle, so I will acquire money; just as I burn the picture of the bill with the flame of the candle, so I will use the acquired money to pay the bill; just as the picture is burned, so the bill is destroyed.

The Projection of Fire-Energy. The correspondences analogically (and thus figuratively) associate the props with their target eidolons. Through those correspondences, the props are avatars or statues of those target eidolons. The props figuratively instantiate their target eidolons. Actions with the props figuratively instantiate target action-eidolons (the forms of actions). The green candle figuratively instantiates the target eidolon *money*; lighting it figuratively instantiates the target action-eidolon *acquiring money*; using its flame to burn the picture figuratively instantiates the action-eidolon *using the acquired money to paying the bill*. Hence the props serve as cognitive aids to willful visualization. Just as pencil and paper make it easier to do long division, so props make it easier to do long spells. While lighting the green candle, the magician willfully visualizes acquiring money. While burning the picture with its flame, they willfully visualize paying the bill.

Since the props are used as cognitive aids for willful visualization, they are used as tools for the focused projection of fire-energy into target eidolons, much as lenses are used as tools for the focused projection of light onto some physical target. Just as a blind person acts through their cane, so the magician acts through their props. If the magician projects fire-energy through an action with props, then the magician projects fire-energy into the corresponding action with the target eidolons. Lighting the candle, while willfully visualizing acquiring money, projects fire-energy into the target eidolon *I acquire money*. Burning the paper with that flame, while willfully visualizing the bill being paid, projects fire-energy into the target eidolon *with that money I pay the bill*. Performing these actions in sequence projects fire-energy into the complete goal eidolon *I will get money and with it I will pay the bill.* Through willful visualization, assisted by the props, the magician causes the goal eidolon to gain some extra fire-energy towards producing some strong literal self-instance in the external target context specified by the spell.

Consequences. If the goal eidolon gains fire-energy towards producing a strong literal self-instance in the target context, then it strives with greater energy to produce such an instance in that context. If it strives with greater energy, then it becomes more probable that it does produce such an instance in that context. So, when the magician projects fire-energy into the goal eidolon, they cause its strong literal self-instantiation to become more probable. They make it more likely that *I will get money and with it I will pay the bill.* This is an objective increase in probability of a physical event. Nevertheless, this increased likelihood does not exceed any empirically detectable threshold.

3. Two Further Spells

Protection Spell. Sabin describes a spell for protecting your house, which involves creating a "witches bottle" (2011: 210-13). While the spell is situated in a ritual context, here I focus on making the bottle. You gather these props: a small bottle with a lid or cork; some sharp objects like nails or tacks; some black strings; some red liquid; a black candle. The colors are meaningful symbols: red indicates protective aggression, while black indicates banishing. Now the spell begins. Drop the sharp objects into the bottle, while visualizing "negative energy being repelled from your home". Drop some strings into the bottle, while

visualizing "negative energy being bound up in the threads". Pour the wine into the bottle, while visualizing it as "washing away all the negative stuff that might approach your home". To complete the spell, close the bottle with its lid or cork, and seal it with black wax to bind all negativities in the bottle. After the wax cools, bury the bottle in your front yard, and "visualize it sending out an energetic barrier that repels harmful things". Sabin offers short incantations to perform during each action. A witch bottle figuratively instantiates an eidolon of domestic protection (an eidolon which is literally instantiated in guard dogs, fences, and so on). By making the witch bottle, you aim to shift energy from your brain into that eidolon, making it more competitive. The witch bottle is an avatar or statue of the protector eidolon. By burying it in your yard, you set up that protector eidolon as a long-lasting positive presence around your house.

Maturity Spell. The anthropologist Kathryn Rountree describes a ritual of self-transformation carried out by a young woman named Scarlett. Scarlett believes she is stuck in her childhood, and she seeks to transform herself into a fully adult woman. Her referent is "I am a successful adult woman". Along with several other women, she casts a circle and performs a ritual. She casts a spell whose goal is her transformation into a mature woman:

> She showed us a picture she had drawn of her family with herself as a little, dirty girl at the end of a family of five. She ripped up this picture and put it into a box through a slot in the top, symbolically destroying this image of her place in the family. She then produced a fragment of an old child's garment, telling us that this was a symbol of her childhood . . . The clothing fragment was put into the box with the ripped-up picture. Scarlett said she had a lot of childish habits which she wanted to leave behind . . . She scattered dead leaves representing the habits in the center of the circle and trampled them. She then announced her decision to wear clean, bright clothes and pulled a purple silk scarf out through the slot in the box. She produced some new patent leather shoes bought that day as a gift to herself, and put them on along with the scarf. Finally, she lit a very tall red candle to symbolize the bold adult status she was choosing to claim. (Rountree, 2002: 54)

The spell sets up a system of correspondences. Several props refer to Scarlett's childhood and immature status (the picture of her as a dirty little girl, the old child's garment, the dead leaves). Several props refer to her future mature status (the purple scarf, the tall red candle). And the actions (ripping, hiding, trampling) refer to the destruction of her immature status, and express her desire to leave it behind. Other actions (revealing the scarf, lighting the candle) refer to the activation of her mature future. So the correspondences produce a structural analogy which maps onto possible continuations of her negatively valued past life into her positively valued future life. The spell is cast to produce the target proposition "I will exit immature childhood and enter mature adult life".

The props in Scarlett's spell are avatars or statues of her immature life, and of her mature life. Her acts deactivate the avatars of her immature life, and actives the avatars of her mature life. Just as there are eidolons for things, so there are eidolons for processes (these are the forms or algorithmic essences of processes). Scarlett's spell figuratively instantiates the eidolon of maturing into a self-directing adult. By destroying the avatars of her immature life, she seeks to make the eidolon *immaturity* objectively weaker in her future life, so that it is less likely to have a strong literal instance in that future. By activating the avatars of her mature life, she seeks to make the eidolon maturity objectively stronger in her future life, so that it is more likely to have a strong literal instance in that future. Performing the spell creates a work of art in her possible futures, a work of art which makes her intended future more likely to become actual.

4. The Productivity of Magic

Enchanted versus Disenchanted Universes. If magic produces at all, then the eidolon theory shows how it produces: it produces by uniting present eidolons in an instrumental way with future eidolons. But as yet we have no arguments that show that magic produces; hence we need to give those arguments. Start with enchantment. A universe is *enchanted* (it is magical) iff at least one spell produces in that universe; it is disenchanted if no spell produces. Digitalists give two arguments that all universes in the world tree are enchanted, that is, magic produces in every bright universe. The first argument shows that all universes in the world tree are enchanted. The *Argument from Value to Magic* goes like this: (1) Any magical universe is better for its agents than any maximally similar non-magical universe. (2) But the laws of animation always put the better universes into the world tree. (3) Therefore, every universe in the world tree is enchanted. Magic produces in every bright universe.

The Fine-Tuning Argument for the Productivity of Magic. (1) As universes rise in the world tree, their laws become more finely tuned for the internal evolution of complexity. (2) As universes become more finely tuned for complexity, more complex things emerge in them. These complex things include organisms (like plants and animals) that use signs to realize their goals. (3) Therefore, as universes become more finely tuned for complexity, they become more finely tuned for the productivity of signs of all kinds, including spells. Fine-tuning for complexity is fine-tuning for magic. Thus magic produces in every universe in the world tree. Every bright universe has some positive enchantment. Moreover, as universe rise in the world tree, they become more enchanted. At higher universes, magic is more productive for more referents.

Magic Cannot Violate Physical Laws. Spell-casting is aesthetic performance; it is semiotic action performed by a physical agent in a universe with laws. All semiotic action depends on physical laws. All charms, messages, and spells at any universe depend on its laws of physics. Spells never violate the laws of physics.[44] Productive spells are not miracles. Consequently, every spell in the grimoire on any universe is consistent with its laws of physics. But the laws of physics are ambiguous and incomplete: they do not uniquely determine the future. They define an indefinite and indeterminate future. From any present, it is almost always the case that there are many possible futures. As complexity increases, the laws of physics determine less and less. Magical productivity further determines the physically indeterminate future. If physics defines the *work of fate* in some universe, then the productivity of magic competes with fate. At higher and higher levels of complexity, fate works less and less. For any target proposition P in your possible futures, if you can cast a spell for P, then the truth-value of P is not fated. As universes grow in complexity in the world tree, their laws become more and more supportive of magic.

Magic Produces but does not Produce Effectively. These arguments entail that spells produce in our universe. Nevertheless, at our universe, on our earth, no spell has ever been shown to produce effectively or reliably. If spells for wealth, health, and love were effective, then all witches and magicians would be wealthy, healthy, and successful in love and everything else. They are not. Magic is not effective in our universe; it is technically worthless. Scientifically validated

[44]Pagans do not want to violate the laws of physics. We seek to work in harmony with nature, including our local physical nature. We do not try to use magic to dominate our universe or to impose our wills on it. We use magic to signify greater harmony.

techniques always work enormously better than spells. Magic provides no *practical hope*. Practical hope is *erotelic hope*. Erotelic hope for some target proposition P is the rational expectation that P will come true in your scientifically foreseeable futures. Still, magic produces; hence it is not worthless.

Magic Extends Technique beyond Technology. Casting a spell is equivalent to producing an existence proof. It reveals that *there exists* some path to your goal (to your desired referent). Thus magic extends technique beyond technology; as such, it is *pure technique*. Technology is the system of effective and reliable means to ends. But technology often fails. And when it fails, magic is the only available remedy. Thus Pliny says magic began as an extension of medicine beyond technique (NH 24.1, 29.5, 29.8, 30.30). Technology effectively produces its goals via causal chains inside a single universe. Magic is not effective in our universe; but it is effective from our universe into its descendants.

Productivity across Universes. Magic does not produce through causal chains within any universe. But digitalism affirms that all universes in the world tree beget future universes in that tree. When a magician casts a spell for some target proposition, they make that desire beautiful. Since the world tree is generated by an optimization algorithm, and since optimization extends beauty, more beautiful structures in any universe are more likely to be carried forwards and further elaborated in its offspring universes. Casting a spell here for some worthwhile target proposition P (such as health) makes it more probable that P will be true for your future counterparts (they are more likely to be healthy). Spell casting expresses your faith in the future evolution of nature. Spells are eschatological techniques. But spells are not prayers. While prayers deprive you of your own agency, spells affirm your agency. To cast a spell is to affirm that you alone are responsible for your own salvation.

Works of Art in the Medium of Hope. By casting a spell which aims at health, you produce the proposition "I am healthy", but you do not produce it effectively. Your productivity has no practical technical value. It provides you with no practical hope that you will be healthy. Nevertheless, spells are works of performance art, and they create works of art by arranging their props. Since spells are works of art, any act of spell-casting is an aesthetic performance, which has aesthetic value. Spells are reliably productive aesthetic technologies. By producing aesthetically, spells produce spiritually. Beyond erotelic hope, there is *agatelic hope*. Agatelic hope for some target proposition P is the rational expectation that P will come true beyond your scientifically foreseeable futures. These futures include your future lives in future universes. Following Nguyen (2020), digitalists say *spells are works of art in the medium of hope*, where the hope is agatelic. Creating an agatelic hope signifies your participation in the Good that transcends all foreseeable futures.

Beauty Bears Holy Witness to the Good. Practicing magic enables you to aesthetically participate in the Good. As an aesthetic practice, spellcasting is spiritual (Parsons, 2022; Sonnex et al., 2022). It allows you to spiritually participate in the Good. Here spiritual participation is a kind of ethical participation. It orients you towards that Good which transcends any practical good. Done socially, spellcasting allows you to religiously participate in the Good. By casting the spell, you speak with a soundless voice saying "I am here". You participate in the unfolding logic of hope; you speak the voice of hope, which is the soundless voice of the One. Speaking with this voice, you address the Good; you address it by proclaiming your good (in this case, your health). By casting your spell for health, you bear holy witness to the Good. You participate in holiness in the midst of your suffering (in your illness). By bearing holy witness to the Good, you *sanctify* yourself. You say "I am here" to the Good; and this is more valuable than anything else you could say. By bearing holy witness to the Good, you participate in the transcendental stars.

5. Divination

Divination techniques include interpreting the positions of celestial bodies (astrology), reading tarot cards or runes, and using tools like pendulums, mirrors, or bowls of water. Divination uses natural objects like planets, stones, feathers, bones, and herbs. It uses artificial objects like cards, pendulums, mirrors, and so on. *Divination is not fortune-telling*, that is, divination does not aim to produce correct descriptions of future events. The future is not entirely fated; physical processes in our universe are not uniquely determined; fate constrains but does not determine. Divination does not aim to predict the future; prediction belongs only to science, and divination is not scientific.

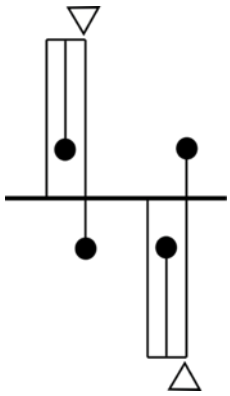
Divination extensively uses props. It uses celestial bodies, tarot cards, runes, ogham carvings, herbs, bones, crystals, and so on. Divinatory symbols figuratively instantiate eidolons. Divination resembles magic. During spellcasting, brains use eidolons as tools to actively reach into the future, as a blind person uses a cane. During divination, brains use eidolons as aids to perception, like telephoto lenses on cameras. So the props used in divination as aids to perception acquire that function. They operate like lenses integrated into the brain; the brain sees through them into the future. But each prop is tuned to the instances of its own eidolon, so that it tends to allow those instances to reveal themselves. The manipulation of divinatory props allows a structure of eidolons to reveal itself out in the landscape of the future. However, since the future is not fixed, that structure is neither inevitable nor predictable.

Just as magic allows your body (including your brain) to produce a work of art in the future, so, conversely, divination allows the future to produce a work of art in your body (including your brain). Divination produces no photo-realistic pictures of a single well-focused future. No such future exists. Divination allows the future to produce a highly figurative work of art in your body. By practicing divination, you allow the future to reveal itself artistically to you. The future is filled with eidetic structures which have avatars in their past (that is, in your present). Future eidetic structures reveal themselves through their present avatars. The future resembles a modern artist, making works of art with revelatory power, works of art in the medium of contingency. Tarot spreads, astrological readings, and so on, are not predictive exercises; they are aesthetic invocations of the deeper and more subtle eidolons within which our futures are structured. Divination produces visionary works of art.

There is no evidence that divination has any predictive power (on the contrary, all the evidence shows that it has no predictive power at all). Hence divination is not an effective means of predicting the future. If *working* requires effectiveness, then divination does not work. It is *not* a practical technique. It is an aesthetic and spiritual technique for allowing future eidetic structures to take their seats in your body, so that your body becomes a living statue of the future.

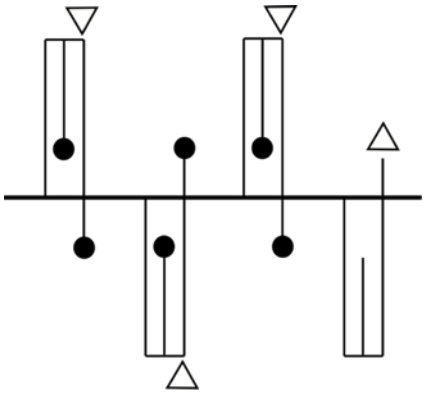
31. Benefactors

1. Exchanges of Food and Grooming



Our lives are not always filled with negativities; on the contrary, they are often filled with goods. From thermodynamic roots, there evolves in our universe an earthly flower which consists of living agents exchanging biologically useful goods. Here the word "food" stands for any biologically useful good or service. Thus *food* includes edible things, but also sex, assistance, protection, agonistic support, and so on. Food is a benefit. If some agent gives you food, then that agent is your benefactor. The symmetrical exchange of food is *direct reciprocity,* and it is mutually beneficial. There are many examples of direct reciprocity in our earthly biosphere. Plants and animals encode dispositions to directly reciprocate. It does no harm to express these dispositions as a rule. The *first reciprocity-rule* states that if some agent gives you food, then you give equal food in return to them. This the positive part of the tit-for-tat strategy in the prisoner's dilemma game: if you cooperated with me, then I'll cooperate with you.

Humans often experience this first rule emotionally: if some benefactor gives you food, then you feel an emotional urge to reciprocate. Humans usually experience this first rule as having normative force: you *ought* to reciprocate. Digitalists use the categorical imperative to define obligations. On the one hand, the policy of gratitude says that you will give thanks to your benefactors when you receive a benefit. On the other hand, the policy of ingratitude states that you will not give thanks. The policy of ingratitude resembles promise-breaking; both are violations of the norms of reciprocity. When universalized, both destroy the reciprocity which they assumed. Hence the categorical imperative obligates gratitude (Moran, 2016). For rational moral agents like humans, the first reciprocity-rule expresses a moral obligation to reciprocate.



Besides exchanging food, many social animals exchange *grooming*, that is, they clean the body parts of other animals in their communities. Vampire bats exchange grooming (Carter & Wilkinson, 2013; Carter & Leffer, 2015). Many primates exchange grooming (de Waal, 2008). Of course, grooming has some use-value; but the effort animals expend in grooming each other often far exceeds its utility. The first reciprocity-rule also includes symmetrical exchanges of grooming: if somebody grooms you, then you give equal grooming in return to them. Animals exchange grooming in order to build social bonds. These bonds support *asymmetrical transfers* of food. An asymmetrical transfer is a *sacrifice*. A sacrifice occurs when a benefactor gives food to some recipient, but does not get any food in return. Asymmetrical transfers are thus *altruistic*. Altruistic transfers of food are often stimulated by earlier transfers of grooming: if I groom you, then you give me food. They are returned by later transfers of grooming: if you gave me food, then I give you grooming. The exchanges of grooming for food suggest a *second reciprocity-rule:* if you can't reciprocate with food, then reciprocate with grooming. For rational moral agents like us, this second reciprocity-rule also has normative force.

The second reciprocity-rule enhances the fitness of social animals because direct reciprocity often fails. Cooperative partners often fail to acquire the

resources they need for symmetrical exchange. This failure threatens to trigger the negative part of the tit-for-tat strategy, so that cooperation breaks down. To prevent the collapse of cooperation, animals have evolved fallback rules like the second reciprocity-rule. Grooming enters into the evolution of *indirect reciprocity*. One form of indirect reciprocity is known as *upstream reciprocity,* also known as *paying it forward*. It is defined by this maxim: "I will help anybody, if I was helped by somebody" (Barta et al., 2011). The maxim for upstream reciprocity resembles the tit-for-tat strategy in the iterated spatialized prisoner's dilemma game. But here it applies in cases where mobile animals need not repeatedly interact with the same neighbors. Thus grooming signals a commitment to future altruism; it indicates a promise to sacrifice food. Many biologists argue that the function of gratitude is to motivate upstream reciprocity. Expressions of gratitude signal commitment to upstream reciprocity (Bonnie & de Waal, 2004; Nowak & Roch, 2007; McCullough et al., 2008). Grooming is one way for animals to express gratitude to their benefactors.

Many social animals in many universes develop linguistic intelligence. They use symbol-systems to communicate. The evolution of language motivates a linguistic version of the second reciprocity-rule for humans: if an animal can't reciprocate with food, then it will reciprocate with semiotic grooming. It will say "thank you" in some language understood by its exchange partners. Semiotic grooming can become literary art: a bear gives thanks to a honeybee by reading it poetry. Semiotic grooming evolved on our earth into general signals of upstream reciprocity. Non-human primates on our earth perform grooming-at-a-distance by exchanging calls (Arlet et al., 2015). Chimpanzees use grooming calls to attract assistance from others when solving novel problems (Leavens et al., 2014). Dunbar (2017) argues that early hominid grooming behaviors evolved into human language. Humans are highly social animals who exchange both food and grooming with each other (Nelson & Geher, 2007).

The normative force of the second reciprocity-rule entails that you ought to say "thank you". Although this may be a weak duty, it remains a duty commonly felt and honored. Even after making symmetrical exchanges of food, we symmetrically exchange signals like "thank you" and "you're welcome". When you give grooming in exchange for food, you are expressing *prepositional gratitude* (Manela, 2016). You are giving thanks *to* some benefactor *for* some benefit. Prepositional gratitude contrasts with *propositional gratitude*. Propositional gratitude is mere gratefulness *that* some good fact is true. Propositional gratitude does not involve any benefactor.

2. Reciprocate Food with Grooming Avatars

Soldiers often sacrifice their lives for their civilian compatriots. The civilians benefit by gaining protection. This is an asymmetric transfer; it is altruistic. It arouses feelings of indebtedness and gratitude in the civilians. They have an emotional desire to reciprocate, and they have the moral obligation to reciprocate. However, since the soldiers are now deceased, the civilians cannot directly reciprocate. They cannot apply the first reciprocity-rule, which says if you got food, then give food. Likewise they cannot fall back to the second reciprocity-

rule that says if you can't give food, give grooming. How can they express their gratitude if the soldiers do not exist?

A common way that civilians *do* give thanks to their deceased soldiers is by raising monuments to them. Monuments to dead soldiers often take the shape of a soldier. They are statues of soldiers equipped with the tools of war (helmets, boots, guns, and so on). They typically carry information about the soldiers. They are symbols which refer to *these* soldiers who died in *this* war. The monuments *bear witness* to the soldiers through objective mimesis. And raising a monument squanders resources. It wastes resources on a work of art, resources which could have been used to service biological needs. And, of course, the deceased soldiers will not give any food in return. Raising a monument is a sacrifice. Since it is done for the soldiers, it is a reciprocal sacrifice. It is an act of reciprocal altruism. But is it really an act of thanks giving?

People can touch monuments. And they can bring them flowers or other gifts. By performing these acts, they are *grooming the monument*. If the monument is a statue of a soldier, this grooming can be direct: people can stroke or pat the statue. The statue is a representative or avatar of some generic soldier, and therefore stands as a symbol for each particular soldier. This motivates a hypothesis: by grooming the statue, you groom the soldier. Both the emotional desire and moral obligation to groom the soldiers can be satisfied by grooming the statue. Our ability to use symbols motivates this *third reciprocity-rule:* if you can't groom the original, groom a symbol. This third reciprocity-rule also has normative force: if the other rules fail, then you *ought* to groom an avatar. This is sympathetic magic. It works both emotionally and morally. But it does not involve fakery. It does not involve fictionalism or pretense. We use stories and images to arouse real emotions. When you cry at a movie, you cry real tears. When you laugh while reading a story, your laughter is genuine. As semiotic animals, we use symbols to satisfy our desires and obligations. Your thanks-giving to a statue is real thanks-giving. Applications of the third reciprocity-rule are also expressions of prepositional gratitude. You are grateful *to* the soldiers *for* having protected you from some enemy.

These behaviors expand from interactions between humans to those between humans and non-human animals. We exchange food with non-human animals. Those exchanges activate the rules for reciprocity. Our exchanges with non-human animals often fall back to the third reciprocity-rule: if you can't groom the original, then groom an avatar. Thus we build monuments that bear witness to the altruistic sacrifices made by animals. These monuments include the Animals in War Memorial in Hyde Park in London and the US Military Working Dog Teams National Monument. At least one monument was raised to bear witness to the laboratory mice who served in scientific experiments (Sharp, 2019: 119-20). A monument in Alabama gives thanks to boll weevils for forcing cotton-growing farmers to diversify their crops (Giesen, 2011: 123-6). These monuments contain statues of the animals. Raising them satisfies emotional desires and moral obligations. It bears witness to these animals. Humans can and do give thanks to many kinds of life for the benefits they give to us.

3. Teleonomic Benefactors

Our benefactors include other humans who give us benefits. Many humans regard non-human deities as their benefactors. Although they are not humans, these deities are persons. And our practices show that our benefactors also include animals who give us benefits. More generally, our practices entail that our benefactors include any living organisms which give us benefits. Two arguments now aim to show that being a benefactor does not require being a person, human, animal, or living organism.

The first argument is motivated by the thermodynamic roots of biological exchange. Entropic forces manifest economic regularities (Annila & Salthe, 2009). The ultimate explanation for economic exchange is that organisms are striving to create as much complexity as possible by producing entropy as fast as possible. So the ultimate economic explanation is just thermodynamic agency. And this is the ultimate explanation for reciprocity. On this view, all that is required for reciprocity, and thus for interacting as benefactor and beneficiary, is to be agents whose exchanges emerge from laws like the maximum entropy production principle (the MEPP) and the causal entropic principle (the CEP). Of course, complex expressions of gratitude require complex forms of agency. Thus Proclus (in *On the Hieratic Art*) was right to say that the sunflower sings to the sun only the small kind of hymn that a plant is capable of singing.

The second argument is motivated by conceptual analyses of gratitude. McAleer (2004) and Boleyn-Fitzgerald (2016) have argued that it makes sense to give thanks to non-personal agents. Comte-Sponville asks "How could one not be grateful to the sun for existing? To life, to flowers, to birds?" (2002: 134). It is rational for humans to say "Thank you for existing" to their friends, the earth, and the universe (2002: 139). More precisely, Bardsley (2013) does not require benefactors to be persons. She says gratitude towards an entity is "both rational and appropriate when (1) that entity is the source of a valuable and unearned benefit and (2) the benefit did not result from some accidental and/or regrettable feature of that entity's character" (2013: 28). Our sun and our evolving biosphere both satisfy Bardsley's analysis. Therefore, if her analysis is correct, then those impersonal agents are our benefactors. They deserve thanks.

However, Manela (2018: 10-12) has argued that Bardsley's analysis is too weak. It can be strengthened by adding the requirement that benefactors have thermodynamic agency. Such agents (like the sun and our biosphere) act teleonomically. From their teleonomic self-motions, arrows emerge which point at the situations in which we gain benefits from them. These arrows explain the fact that we got these benefits. The theory of physical intelligence argues that laws like the MEPP or CEP manifest intentionality (Kugler et al., 1990; Tschacher & Haken, 2007). Accordingly, any explanatory force added by intentionality is already present in thermodynamic teleonomy. When Bardsley's analysis is thermodynamically strengthened, Manela's objection can be met. Consequently, if the fact that you have some benefit is explained by the teleonomic motion of some thermodynamic agent, then that agent is your benefactor. It is rational, emotionally appropriate, and ethically required to give thanks to it for its given benefits. On this view, agency is still required for benefaction, so it makes no sense to thank non-agents (such as nitrogen, the big bang, or the curvature of space-time). Your benefactors are the agents in your evolutionary past, that is, in the lineage from the One to your body.

Ancient pagans recognized many impersonal benefactors. To give thanks to them for their many benefits, they groomed avatars of those benefactors. The Stoics said the specific theonyms referred to specific kinds of thermodynamic agency (Cicero, ONG, 2.71). Thus Apollo referred to the agency in the sun; Poseidon referred to the agency in the sea; and Demeter referred to the agency in crops. They made human-like statues which they used to symbolize those impersonal agents. And they groomed those statues by building houses for them, dressing them, washing them, offering them food, and speaking to them (Collins, 2008: 94-5). So it is not unreasonable to say that behaviors which express gratitude by grooming avatars are *pagan* religious behaviors.

32. Giving Thanks

1. Giving Thanks to Evolution

According to the cybernetic theory of intentionality, our earth has beliefs and desires. It is a semiotic agent. However, our earth has no intelligence; it is not a mind. By supporting a relatively stable long-term climate, which is required for life, the beliefs and desires of our earth support the evolution of life. Our evolving biosphere inherits the intentionality of the earth; it is also a semiotic agent. Evolution is a vast semiotic computation in which genes are signs. Evolution has memory. Although it has no foresight, it may be capable of learning. Evolution designs living things. Evolution is a mindlike artist, and humans and all other species are its works of art. Of course, while evolution is mindlike in many ways, it is not intelligent, and it is not a mind. It is neither a person nor a deity.

By designing our bodies, and our many mutually beneficial relations with other organisms, evolution imitates the One: it gives us benefits. Since it has intentionality, Dawkins correctly says it *blesses* us with *gifts* (1998: 5; 2003: 12). We seek to reciprocate, to give some gifts back to evolution. Since we cannot directly reciprocate, we strive to apply the second reciprocity-rule: if you can't give food, give grooming. But we can't groom evolution. This failure triggers the third reciprocity-rule: if you can't groom the original, groom an avatar. So we seek to groom statues of evolution. Since evolution is a semiotic agent, and we are embedded in its networks of signs, it is rational for us to reciprocate by making signs towards it in return. It is rational for pagans to address our earth or our evolving biosphere as "you" in ritual speech.[45] It is likewise rational for pagans to address avatars or statues of our earth or evolution in ritual speech.

We can literally groom statues of evolution. Since the biosphere is often portrayed as Gaia, you can groom a statue of Gaia – such statues are widely sold. These typically look like a woman pregnant with our earth. You can place them on an altar and light lamps to them or stroke them with feathers. You can sing the Homeric *Hymn to Gaia* to your statue. You can talk to it. The Gaia statue refers to the mindlike semiotic agency in the biosphere, to its organomer. It does not refer to any bodiless person. Although digitalists can accept the use of human-like statues to refer to impersonal benefactors, we recognize that those uses hide dangers. Roberts (2004) and Lacewing (2016) suggest that giving thanks to impersonal benefactors leads to personification. The Gaia statue is clearly personified. And Bishop (2010) argues that giving thanks to personified agents leads to theism. Since theism is false and idolatrous, we instead seek ways to thank evolution which do not lead to theism or to idolatry.

Beneficiaries often reciprocate by mimicking the actions of their benefactors. The three reciprocity-rules involve ritual mimesis (e.g. if you gave me food, then I reciprocate by mirroring your action). Ritual mimesis is crucial for the evolution of robust cooperative strategies in games (Fischer et al., 2013). So it's proper to give thanks to evolution through ritual mimesis. While evolution is an artist which designs its works, it also destroys its old works to create its new works. So we imitate it by making works of art which we destroy. Through the mediation of long cosmological and biological evolution, the One lays out every living thing on its sacrificial altar. Here we offer our chant for the One: In the beginning is the One, and the One is the earth, and the One is *in* the earth. Since the One lays out every living thing on its evolutionary altar, follows that one way to give thanks to evolution is by making and sacrificing works of art.

[45]Musicians have made hymns to evolution. These include Gregory Brown's *Missa Charles Darwin*, and Nightwish's *Endless Forms Most Beautiful*.

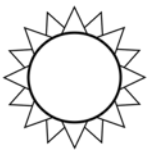
On this view, the Burning Man festival gives thanks to evolution through ritual symbolic grooming. During the course of the year, Burners create complex works of art. They carry these to Black Rock City, a temporary city for the festival. Just as the earth is an oasis of biological creativity in the inhospitable desert of space, so Black Rock City is an oasis of artistic creativity in the Black Rock Desert. Yet Burning Man has also been interpreted in religious terms (Kozinets & Sherry, 2004; Gilmore, 2010; Harvey, 2017). The Black Rock Desert is an ancient lakebed; its flat surface (the playa) resembles the flat surface of an altar. The playa symbolizes the evolutionary altar animated by the One. During the festival, many works of art are sacrificed by burning. Building and destroying them imitates the evolutionary creation and destruction of organisms and species. The use of fire imitates the role of fire-energy in the creation and destruction of all things in time. The entire Burning Man festival is constructed and then removed from the desert without leaving any trace. Evolution constructs all life on earth; but that construction will be incinerated by the sun, leaving no trace. The construction and deconstruction of the Burning Man festival ritually mimics evolution. On the basis of historical similarities, it is plausible to say that Burning Man is pagan. Atheists can (and do) participate in Burning Man and similar thanks-giving rituals. They can and do give thanks to evolution. These rituals satisfy our emotional urges and moral obligations to give thanks.

These ways of thanking evolution resembles the pagan religious activities described by Iamblichus and Sallustius. Sallustius (GW ch. 6) says the Olympian theonyms (like "Apollo" and "Athena") refer to deep agents in nature. Iamblichus (M 1.12-15, 5.26) says these deep agents are not moved by our petitionary prayers or sacrifices. Sallustius (GW ch. 14) says these deep agents are immutable and impassible. Our religious behaviors towards them do not change them. So why be religious? Iamblichus (M 1.8-15) says proper religious behaviors allow us to participate in the currents of fire-energy that are always flowing from these deep agents through all things. Sallustius (GW chs. 15 & 16) says we should be religious because our behaviors towards the deep agents *change us*. The deep agents always pour their benefits into our lives. Our religious behaviors make us more receptive to the streams of deep benevolence.

But how does this work with evolution? By giving thanks to it, we change our relations to it. Of course, we gain pleasure by satisfying our emotional desire and moral obligations to give thanks to evolution. More deeply, we change our ethical relations towards the biosphere. Bearing witness to evolution can inspire greater ecological awareness and activism. It can inspire greater reverence for all living agents, including other humans. But giving thanks to evolution does not imply treating it like a theistic deity. Since evolution is not a person, it makes no sense to pray to it, nor to worship it. Nor does it make sense to offer it sacrifices to try to enter into a *do-ut-des* relation with it (I give that you might give). To try to initiate a *do-ut-des* relation with evolution would be to try to change it to benefit us. But evolution does not alter its behaviors in response to our religious behaviors. Nevertheless, since evolution gives us many benefits, it does make sense for an atheist to give thanks to it in non-theistic rituals of gratitude.

2. Giving Thanks to the Sun

According to the cybernetic theory of intentionality, our sun has beliefs about our earth, and it makes signs (sunspots) expressing those beliefs. However, our sun has no intelligence; it is not a mind. Our sun is an agent which gives us many benefits. It is one of our deepest benefactors. Since it gives us many benefits, we have the emotional urge and the moral obligation to directly reciprocate. But we cannot do this: the sun is too big and too far away. Now the second reciprocity-rule applies: if you cannot give food, give grooming. So we have the



urge to groom the sun. Since our sun has beliefs, and makes signs towards our earth, it makes signs towards human animals – it signals to us. Since our sun is a semiotic agent which makes signals to us, it is rational for us to respond to it with our own signs. According to Lucian (*De Saltatione,* 17), it was customary for an ancient Greek to salute the sun by kissing her hand and raising it to the sun. This gesture looks like a way of giving thanks by symbolic grooming. Since the sun is a semiotic agent, it is rational for pagans to address the sun as "you" in ritual speech. Socrates said prayers to the sun (Notopoulos, 1942). Modern pagans have designed other daily rituals for thanking the sun (Fox, 2020).

For some, these daily rituals will be satisfying; but others have sought to give thanks to the sun by grooming solar avatars. Just as you can groom a Gaia statue, so you can groom a solar statue. Solar statues (with smiling sun-faces in their disks) are readily available. Or you might give thanks at the Tower of the Sun in Osaka Japan. At seventy meters tall, it is a large solar monument. Its interior contains a model of the biological tree of life, which bears witness to the way the sun drives evolution. This Tower has three sun-faces. However, since sun-faces suggest unwanted personification, an atheist may seek to thank the sun through more abstract forms of mimicry.

A solar monument (like a stone circle) imitates the yearly cycle of the sun from a geocentric perspective. While ancient stone circles (like Stonehenge) are well-known, many new stone circles have been built in recent years. The stones mark the significant days in the solar cycle, such as the solstices and equinoxes. On those days, the stones channel the light of the sun into the circle. The circle appears to be animated by that light, so that it serves as an avatar of the sun on that day. Simpler solar monuments (like the sun-daggers of the American southwest) are animated by the sun in similar ways. Building monuments to the sun is a way of bearing witness to its life-giving power, and so a way of giving thanks. Once a monument is raised, people can groom it by touching it or by performing rituals in it or with it. These rituals can be as simple as shouting *"Sol invictus!"* on the morning of the winter solstice. More deeply, many groups perform complex rituals in their stone circles. Rituals celebrating the solar holidays (the wheel of the year) are performed in many new stone circles.[46]

By abstraction, the solstices and equinoxes themselves become avatars of the sun. To these four solar holidays, modern pagans add the four cross-quarter days,

[46]Dozens of modern stone circles exist in the United States. There are circles at the Four Quarters Interfaith Sanctuary of Earth Religion in Pennsylvania (2020) and the Kinstones in Wisconsin (2020). Druids perform rituals in the stone circles at Dreamland in Vermont (2020) and at the White Mountain Druid Sanctuary in Washington (2020).

which fall between the solstices and equinoxes. These solar holidays make the pagan *wheel of the year* (Meredith, 2013). By performing thanks-giving rituals on these eight days, we groom these episodic avatars of the sun. We give thanks to the sun through mimicry. As the sun creates light and heat, so we create light and heat. Thus candles and bonfires play central roles in many pagan celebrations on the solar holidays (Fox, 2009).

Performing rituals of thanks-giving on the solar holidays does not require theism. As part of his atheistic Religion of Nature, Crosby (2014: 147) includes rituals on the solar holidays. Many active atheistic paganisms currently exist (e.g. Humanistic Paganism, 2020a; Atheopaganism, 2020). These atheistic pagans perform rituals on the eight solar holidays (Green, 2019: 93-6). These rituals take many forms (Livingstone, 2005: chs. 5 & 6; Humanistic Paganism, 2020b). On the cross-quarter days, the Beltane Fire Society (2020) performs secularized pagan rituals. Some entirely secular atheists honor the sun on the winter solstice (Cimino & Smith, 2014: 134). Many of these atheistic rituals explicitly include acts of thanks-giving to the sun or other natural agents.

By performing these rituals, you groom avatars of the sun. By performing rituals which groom these avatars, an atheist can give thanks to the sun. These acts of giving thanks to the sun involve semiotic reciprocity: our sun signaled to us, and we signal back in return. Since these signs are real, these acts of thanks-giving are not fictional. The atheist is neither pretending to give thanks nor doing live-action role-play (larping). The atheist really does give thanks. The atheist satisfies their emotional urges to give thanks, as well as any moral obligations. By their similarities with historical pagan activities, it is plausible to say that solar thanks-giving rituals are pagan. Once more, if urges or obligations push atheists towards such rituals, then they push atheists towards an atheistic paganism.

By exchanging signs with the sun, we enter into magical conversation with the sun. The sun casts spells on earth (and on humans) and by giving thanks to it we cast spells on it in return. Since these signs are really exchanged, this magical conversation is objectively meaningful: it has objective truth-conditions. Although our semiotic influence on the sun is vanishingly small, it is not non-existent. Since grooming the sun (or its avatars) creates real changes in the system of physical signs in which we are embedded, the satisfaction created by these acts of grooming is not merely psychological. It is not merely subjective. Because these rituals have semiotic effects, they create genuine satisfaction. However, in all these rituals, we do not worship the sun. We have no *do-ut-des* relations with it. We do not try to bribe the sun or beg it for favors.

3. Giving Thanks to the Universe

Digitalists can and should give thanks to our sun, and to our evolving biosphere. By giving thanks to these agents, we engage in pagan activities. But our entire universe, finely tuned for the evolution of internal complexity, is also a thermodynamic agent. It creates as much complexity as possible by producing entropy as fast as possible. It persistently strives to climb higher on the physical Mount Improbable (Chaisson, 2001, 2006). Digitalists can and should give thanks to our finely tuned universe. And so the expected rules of reciprocity apply: we give thanks to our universe by grooming an avatar of our universe. We give thanks to it by bearing witness to it.

Although we can give thanks by grooming statues built outside of our brains, we can groom statues in our brains. These statues are mental models. Sagan said "The cosmos is within us. . . . We are a way for the universe to know itself" (1980). Dawkins says "We can get outside the universe. I mean in the sense of putting a model of the universe inside our skulls" (1998: 312). We put a linguistic model of the universe inside our skulls by doing science. By doing science, you

build a symbolic statue of the universe inside your head. By thinking about that avatar, you groom it linguistically.

Although grooming a model resembles other acts of thanks-giving, it is reasonable to refer to it as *reflection*. The model is a reflection of the universe. Grooming a model of the universe is a contemplative practice. It is a kind of cosmic benediction. Thus Colledge (2013: 41-2) proposes that the deepest expressions of atheistic gratitude are acts of cosmic benediction or blessing. The idea that giving a rational account of the universe is a kind of spiritual reflection probably goes back to Plato's *Timaeus* (Layne, 2013). Grooming a cognitive avatar of the universe is pagan reflection; it is a pagan contemplative practice. Both ancient Neoplatonic pagans and modern atheists regard this contemplative activity as extremely valuable. Dawkins says that bearing witness to the universe by building scientific models of it *makes life worth living* (1998: *x*, 1-6, 313).

4. Giving Thanks to Deep Natural Forces

The Andretor and Gynetor are deep natural forces. All our benefits, the concrete benefits in our lives, come from the interactions of these forces within the Selector. Hence we are obligated to give thanks to the Andretor and Gynetor. Here again, the first and second reciprocity rules fail, so we must fall back to the third: we give thanks to the Andretor and Gynetor by grooming their avatars. These are typically statues found on pagan altars. A statue of the Triple Goddess represents the Gynetor while a statue of the Horned God represents the Andretor. By grooming these statues in rituals (e.g. by making symbolic offers of food, drink, flowers, and so on), we give thanks to the Andretor and Gynetor themselves. Digitalists do not prohibit the use of human-like symbols to refer to impersonal agents. After all, human bodies are natural, and can be used to symbolize other parts of nature. However, if we use human-like symbols, we always specify that they do not symbolize persons.

The Andretor and Gynetor are aspects of the fire-energy that flows through all concrete things. This fire-energy is the Stoic *pneuma* or *pyr technikon* (the designing fire). Some Stoics just used Zeus as a symbol to refer to this fire-energy. They used human-like Zeus-statues and the "Zeus" name to refer to it. Since this fire-energy gives us benefits, we are obligated to give thanks to it. Epictetus says the Stoics found joy in giving thanks (*Discourses* (D), 1.6.1, 1.16.15-18). Epictetus says they were grateful for their hard lives on our dangerous and beautiful earth (D 3.5.8-11, 4.1.105-6, 4.10.14-17). They were grateful their fates (D 2.16.28). They were grateful for the fire-energy. Even more deeply, they were grateful the rationality of existence (D 1.16.6-8, 4.7.9). And for being well-fit into that rationality by their evolved human natures (D 1.12.32, 2.23.5-6). But they were not merely *grateful that* they had these benefits. More precisely, they *gave thanks to* the rationality of existence *for* those benefits. They personified this rationality as the Cosmic Zeus. Sometimes this personification was an appropriate use of a personal symbol for an impersonal force or order. Other times, it was theistic idolatry.

The Burning Man festival illustrates how human-like symbols can be used without idolatry. The Man is a statue of the Stoic Cosmic Zeus. It represents the rationality of concrete existence (expressed in the Selector). Just as the Cosmic Zeus goes through a cycle of construction and conflagration, so the Man goes through a similar cycle. The Man is built and burned; then built and burned again. The Man is the Phoenix. The physical energy that goes into building the Man symbolizes the agency of the Selector. It is the self-shaping rationality which builds all structure. But the Selector is animated by fire-energy, so its digital agents burn. So the Man is sacrificed by fire. The fire that burns the Man is the *pyr technikon*. The physical fire symbolizes fire-energy, concrete self-surpassivity. Just as the Selector gives structure to the fire-energy rising through

the Constructor, so the burning Man gives structure to its fire. While the Man burns, the flames rising into the sky symbolize the Selector.

The sacrificial burning of the Man is an act of thanks-giving. We give thanks to all things which have been sacrificed on the altar of evolution. By burning the Man, we give thanks to fire-energy. We give thanks to it through ritual mimesis; by burning the Man, we do what fire-energy does. Fire-energy sacrifices old orders for the sake of birthing new orders. More deeply, we give thanks to the Selector by both building and burning the Man. By building and burning the Man, we groom a statue of the Selector. The cyclical building and burning is ritual mimesis Burning the Man thanks all the hypostases. It is an act of hypostatic thanks-giving. The fire that consumes the Man is the power that makes beings be. Since burning the Man gives thanks, the combustion of the Man is celebratory. Burning the Man is an ecstatic event – it is the climactic self-transcendence of fire-energy. Sanctified by fire, the burning Man is holy.

The Man shows how digitalists can use statues while avoiding idolatry. The Man is officially genderless. And the Man is faceless: it has no definite personal identity. Its facelessness clearly signifies that it is neither *this* person nor *that* person. It is not some named deity belonging to this tribe rather than that tribe. It is neither Yahweh, nor Thor, nor even Zeus. The Man is ineffable; the Man is utterly nameless. Its anonymity helps block idolatrous tendencies. The Man is not a divine person to be worshipped; it is an icon to be sacrificed by fire. We destroy it and rebuild it. One good way to avoid idolatry is to destroy the avatars you use in your rituals. By destroying them, you indicate that you retain theological sovereignty. You do not bow down in worship.

5. Giving Thanks to the One

Most deeply, atheists can and should give thanks to being-itself (the One) for their own being (Colledge, 2013). Here again we give thanks by bearing witness to the Good, and we bear witness by grooming avatars. We groom avatars of the One, that is, symbolic avatars of existence. We groom them by creating them and studying them. But the study of existence is philosophical. By doing philosophy, we groom avatars of the One inside of our heads. Again, this is contemplative prayer. And since existence is the deepest category, bearing witness to it is the deepest way to bear witness. If Dawkins is right about the value of contemplation, then bearing this deepest witness makes life most worth living. By giving deep thanks to being-itself through contemplative prayer, rational pagans redeem their lives. By grooming avatars of the One, we bear witness in the deepest way to the Good. Of course, this is not the only way to bear witness to the Good. Any activity, of any agent, which produces positive meaning bears witness to the Good. It bears witness by generating goodness. And we do not merely bear witness to the Good by thinking; we also bear witness to it by speaking and acting. We bear witness in rituals, and in our daily lives.

33. The Wheel of the Year

1. The Solar Holidays

Eight solar holidays (holy days) make the *wheel of the year*. These include the solstices, the equinoxes, and the four cross-quarter days between them. Many groups encourage rituals on these holy days. Pantheists encourage them (Harrison, 1999: 84). As part of his religious naturalism, Crosby encourages them (2014: 147). Perhaps he would also advocate rituals on the cross-quarter days. The solar holidays are celebrated by Druids (Greer, 2006: 74-82), and by atheistic pagans (Green, 2019: part VII). But they are most closely associated with Wicca (Cunningham, 2004: ch. 8; Sabin, 2011: ch. 9; Silver Elder, 2011).

The holidays on the Wiccan wheel are known as *sabbats*. For theistic Wiccans, these days symbolize events in the life-cycles of the Wiccan God and Goddess. Our stable earth represents the Goddess and our variable sun represents the God. Although our earth remains constant, our sun waxes and wanes. Hence the God is born, grows, peaks, declines, dies, and is reborn. Since the wheel symbolizes the repeated incarnation of the solar God, the Wheel also symbolizes reincarnation. Silver Elder writes that the wheel illustrates "the Cycle of Infinity and Reincarnation with the seasonal cycle acting as the metaphor for the regeneration of life" (2011: 23). The sabbats are closely associated with agriculture (the annual cycle of planting, tending, and harvesting) and animal husbandry (the annual cycle of animal mating, birth, growth, and slaughter).

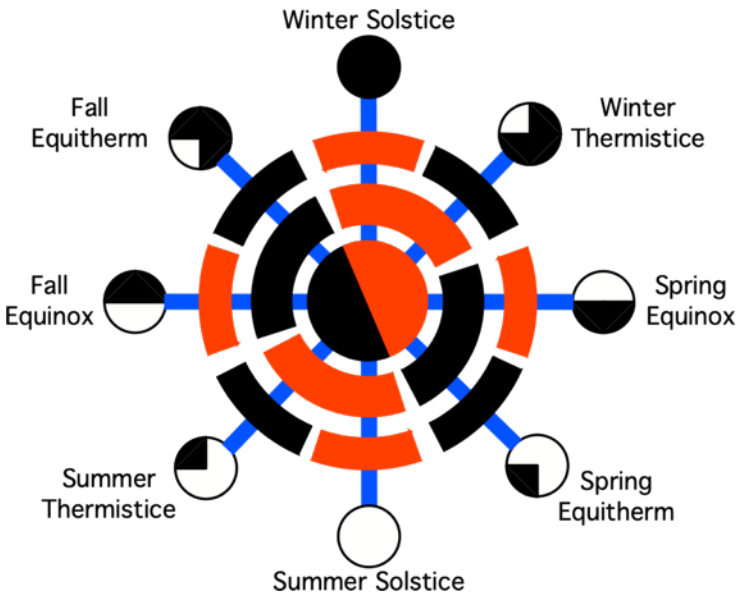
As atheists, digitalists do not believe in the Wiccan God or Goddess. More naturalistic versions of Wicca interpret these as natural powers. Thus Silver Elder (2011: 23) writes that our sun represents the male principle in nature and our earth represents the female principle in nature. More abstractly, the creative principles in universes are analogous to the sexual powers of male and female animals. Just as male and female animals create new life sexually, so the demiurgic powers in universes generate new things sexually. The wheel of the year depicts the life-cycle of the hierogamic couple in any universe. The hierogamic couple (that is, the holy sexual couple) consists of the andromic power and the gynomic power. The wheel of the year depicts the life-cycle of the Gynetor and the Andretor.

2. Celebrating the Solar Holidays

Our human lives are deeply entangled with the cycles of the earth and the sun. They are thermodynamic benefactors. Since they give us many benefits, we are obligated to give thanks to them in return. And since we cannot directly reciprocate with either food or grooming, we turn to the third reciprocity-rule in our theory of gratitude. We reciprocate by grooming avatars of the earth and sun.

The solar holidays are themselves avatars of the earth and sun. Moreover, the Andretor and Gynetor appear in the dynamics of the earth-sun cycle. Hence we give thanks to them by performing rituals on the solar holidays. Besides their religious aspects, these holidays are great opportunities social fun. They are great times for people to gather together in celebration. Families can celebrate together and to introduce children to scientific and philosophical concepts. They are also great opportunities for solitary reflection.

The wheel of the year cycles through the seasonal relations of the earth and the sun. The Figure on the right shows the holidays on the wheel, labeled in terms of light and darkness. The wheel also involves the symbolism of heat and cold. It involves symbols taken from the life cycles of plants and animals (including human animals). It involves all the ethical and emotional symbols associated with the seasons. It involves symbolisms associated with all the seasonal ways that humans interact with their environments. The symbolisms for the holidays are so rich that they permit an enormous variety of rituals. Many books have been written about them (e.g. Meredith, 2013). The Beltane Fire Society (2020) performs elaborate public rituals on the four cross-quarter days.



Winter Solstice. The winter solstice occurs around 21 December. Wiccans refer to this holiday as *Yule*. The night of the winter solstice is the longest night. The power of light is minimal. However, on the morning after that night, the power of the light begins to increase. So the winter solstice begins the waxing of the light. Yule symbolizes origination. The new sun can symbolize the emergence of the One from non-being (the sunrise of the One over the oceanic horizon). It can be celebrated with rituals involving lighting candles. And it can be celebrated in traditional pagan ways: You can put up a Yule tree, light a Yule log, hang mistletoe, give children gifts, and so on.

Winter Thermistice. The winter thermistice occurs during the first week of February. Wiccans refer to this holiday as *Imbolc*. The temperature is minimal and the power of heat is weakest. But after the winter thermistice, the heat begins to increase. So this holiday begins the waxing of heat. For digitalists, Imbolc signifies the emergence of abstract objects from the ground of being. One way to reproduce this in ritual is to construct an iconic model of the tree of strings (the all-wood). Before the ritual, a pole is made which symbolizes the *axis mundi*. Each participant builds a small branching structure out of sticks. During the ritual, the pole is set up, and the branches are inserted into positions on the pole.

Spring Equinox. The spring equinox occurs around 21 March. Wiccans refer to it as *Ostara*. At this time, light and darkness are in balance, but light is ascending. This is the start of the bright half of the year (in which light exceeds darkness). At the spring equinox, the Gynetor and Andretor are born. This is the time of youth. But the Gynetor and Andretor always occur together, and their union is symbolized by flowers. The iconic tree symbolizes the branching possibilities of young lives. Flowers can be offered in ritual to the iconic tree. To deposit your flower to the base of the tree is to make an offering of hope: you hope that your life will become as beautiful as this flower.

Spring Equitherm. The spring equitherm occurs during the first week of May. Wiccans refer to this holiday as *Beltane*. Now hot and cold are in balance, but heat is ascending. The hot half of the year begins (in which heat exceeds cold). This period symbolizes the growth of complexity. The Cosmic Walk involves walking a spiral to dramatize the growth of complexity (Taylor, 2007: 249-52). Beltane also symbolizes the sexual union of the Gynetor and Andretor. Their union creates the fertile seeds for new lives, new societies, new planets, new universes. Beltane includes rituals that dramatize our hopes for the future. One ritual involves writing aspirations onto ribbons and tying them to the iconic tree. These represent the fertilized seeds manifested by the Gynetor and Andretor.

Summer Solstice. The summer solstice occurs around 21 June. Wiccans refer to this day as *Litha*. Since it is the longest day, the power of light has reached its maximum. But after this climax, the light decreases – the summer solstice marks the start of the waning of the light. The darkness begins to grow. This holiday signifies the peak of life. It can be celebrated by a food communion.

Summer Thermistice. The summer thermistice occurs during the first week of August. Wiccans refer to it as *Lughnasadh* (Lunasa) or *Lammas*. Around this time, the power of heat peaks. This day starts the waning of heat. Lunasa often includes the first harvest ritual. It can dramatize releasing negativities and getting rid of burdens. One way to do this uses a stone to symbolize some negativity you want to overcome. The stones are thrown into a pit and buried.

Fall Equinox. The fall equinox occurs around 21 September. Wiccans call it *Mabon*. Now light and darkness are in balance, but darkness is ascending. This is the start of the dark half of the year (in which darkness surpasses light). This is the primary harvest holiday. It is the time for the celebration of accomplishments. As a harvest festival, it is the first thanks-giving festival. It is a time to express gratitude for all our blessings. It is also time to accept that all things must end. This acceptance is dramatized by burning the iconic tree. At this time, the Gynetor and Andretor have died. Only their seeds remain. So this is time to honor those who will carry on after we are gone.

Fall Equitherm. The fall equitherm occurs during the first week of November. Wiccans call this day *Samhain*. Heat and cold are now in balance, but the balance fails, the cold is gaining. This is the start of the cold half of the year. This is the time for the remembrance of the dead. It is the funeral of the Gynetor and Andretor. Many well-established ceremonial structures exist for dealing with death. These include the Day of the Dead in Mexico and elsewhere. Some Wiccans honor the dead through *silent suppers* (Sabin, 2011: 171). A silent supper is meal that is served and eaten in silence, with a place at the table set for the dead. But this is also a thanks-giving holiday. In the United States, the thanks-giving aspect of Samhain can be moved to Thanksgiving.

3. The Common Liturgy

Wiccans have developed a fairly standard liturgy for celebrating their sabbats. The sabbat rituals share a common framework holding content which varies from sabbat to sabbat. The *common liturgy* is presented in the Farrars (1981: 11-60), Cunningham (2004: ch. 13), Sabin (2011: ch. 10), Silver Elder (2011: 88-105). Here are the stages of the common framework as described by Silver Elder (2011: 88): "Preparation; Opening the Rite; Casting the Circle; Calling of the Quarters and Inviting the Deities; Cakes and Wine; Banishing of the Circle and Closing the Rite."

The opening and closing actions create a temporal boundary for the sabbat ritual. The circle and the quarters create a spatial boundary. Put together, they make a spatio-temporal boundary for the sabbat ritual. They create a *ritual container*, a sacred space-time. This sacred space-time is carved out from the

space-time of our universe. It holds a virtual copy of part of some other possible universe. That other universe is the *target universe* of the ritual. Part of that universe is analogically simulated inside of the ritual container. By participating in the ritual, people simulate being their *target selves*. Your target self is your counterpart in the target universe. It is another possible version of your self. To dissociatively simulate a better future version of your self is to *channel* that other version. By performing the ritual, the participants channel their target selves.

Digitalists roughly follow the Wiccan common liturgy. However, our versions of the sabbats are secular and atheistic rather than religious and theistic. And we are not constrained by any particular Wiccan features. Our solar holidays do not celebrate events in the lifecycle of the God and the Goddess. Nevertheless, since the Gynetor is a counterpart of the Wiccan Goddess, and the Andretor is a counterpart of the Wiccan God, we can use abstract Wiccan symbols to refer to them. They are natural powers and agencies (not deities). We are entirely free to invoke a wide variety of powers in our own bodies. We can sing hymns like the Goethe-Tobler *Hymn to Nature*, the Homeric or even the Orphic hymns. We can praise and give thanks to the closing and opening powers. We can praise and give thanks to evolution and to all the wheels of nature at all scales.

Casting the Circle. Casting the circle involves drawing or marking out a circle in which the ritual takes place. The circle is usually cast by some ritual leader. It may be drawn on the ground, or marked by placing stones, sticks, candles, or other indicators. These are typically placed at the four quarters, that is, the cardinal directions. The circle is typically cast by moving in a *deosil* direction, which follows the movement of our sun across the sky. Hence casting the circle mirrors the solar cycle of the year. Casting the circle is done by invoking the closing power (the Gynetor), which concentrates fire-energy in the ritual container.

Calling the Directions. The directions include the four quarters, north, east, south, and west. They may be called by a single leader, or by one person for each direction, or by all the participants together. They are usually called in a deosil rotation (east, south, west, north). After calling the quarters, the vertical directions of up and down (heights and above, depths and below) may also be invoked. The center may be invoked last. Wiccans often associate these directions with powers. They can be interpreted as powers of nature. Each direction gets named, recognized, and welcomed. The calls to the quarters are *invocations*, that is, symbolic acts which seek to arouse the powers in the circle or in those present. Digitalists call the directions much like Wiccans. However, our directions do not refer to any unnatural objects. We have already argued that the four cardinal directions can be aligned with the four cardinal virtues (such as the Stoic or Platonic virtues):

Powers of the east,
virtues of temperance and compassion,
we invite you into our circle and into our lives.
Hail and welcome!

Powers of the south,
virtues of justice and honesty,
we invite you into our circle and into your lives.
Hail and welcome!

Powers of the west,
virtues of courage and endurance,
we invite you into our circle and into our lives.
Hail and welcome!

Powers of the north,
virtues of prudence and intelligence,
we invite you into our circle and into our lives.
Hail and welcome!

Other interpretations of the directions are surely possible. For example, the directions can also be interpreted in terms of the powers useful for action:

Powers of the east, powers of the hand,
show us what needs to be seen.
Powers of the south, powers of the voice,
give sound to what needs to be said.
Powers of the west, powers of the eyes,
let us see that which is shown.
Powers of the north, powers of the ears,
let us hear that which is spoken.
Powers of the depths, powers of the past,
we accept your energies.
Powers of the heights, powers of the future,
we strive towards the ideals shining like stars in your sky.

Calling the Elements. The elements are the four cardinal elements, fire, earth, air, and water. A fifth element, such as light, may also be invoked. These are invoked much like the directions. They may be called by a single leader, or by one person for each element, or by all the participants together. Many rituals invoke the directions and the elements together. They may say something like "Powers of the east, powers of air, . . .". However, it is hard to see any clear way of correlating the directions with the elements, and so the elements can be invoked separately. After the elements are named, something is usually said about them. Digitalists call the elements much like Wiccans. However, our elements do not refer to any bodiless persons (they are not persons at all). We have already argued for a Platonic interpretation of the elements:

Powers of water,
powers of the Abyss of non-being,
we recognize your creative ultimacy.
We bid you hail, and welcome.
Powers of earth,
powers of maximal self-congruency,
we celebrate your plenitude and generosity.
We bid you hail, and welcome.
Powers of air,
powers of structure and possibility,
we rejoice in your freedom and clarity.
We bid you hail, and welcome.
Powers of fire,
powers of actual presence,
we invoke your providential fire-energy.
We bid you hail, and welcome.

Core Ritual. After the quarters and elements are called, the core ritual begins. Different solar holidays have different core rituals. The ritual leaders and participants play their appropriate roles in the core ritual. The core ritual may involve singing, chanting, drumming, and dancing. It may involve many people reading assigned texts, or reading texts which they have written. Core rituals may

involve many activities, directed to the powers and agents that appear in digitalism. Just as the Goddess and the God play central roles in Wiccan sabbats, so the Gynetor and Andretor may play central roles in the solar holidays for digitalists. The core ritual may involve the creation of textures which strongly figuratively instantiate superhuman animals (deities) in non-actual universes. When these textures are created by the ritual activities, they become epiphanies. The deities which they instantiate appear as virtual agents in the ritual. By means of these epiphanies, the participants in the ritual may collectively hallucinate divine agents. They participate in the superhuman animality of those deities. By means of your ritual activities, your own body may become an epiphany. The agency of your body transfigures itself, so that the deity virtually takes control of your body. You may experience yourself as a deity. To do this is to channel the deity. Of course, all these activities must be ethical.

Releasing the Elements. After the core ritual, the elements are released. They are released in the reverse order. They may be released by a single leader, or by one person for each element, or by all the participants together. Thus we release fire; release air; release earth; and release water.

Releasing the Directions. If the directions and elements were called together, then they should be released together. If they were not called together, then the directions should be released in reverse order. So, if they were called in the deosil order, then they will be released in the widdershins order, that is, counter-sunwise. The directions may be released by a single leader, or by one person for each direction, or by all the participants together. Much like the Wiccans, we release the directions in reverse order. Thus we release the north; release the west; release the south; and release the east.

Uncasting the Circle. After the powers have been released, the circle is opened by uncasting it. The uncasting, or dissolving, is done by the opening power (the Andretor), which releases the fire-energy that was concentrated at the start of the ritual. The ritual is finished as the circle is opened. It is uncast in the reverse direction of its casting. If it was closed by moving clockwise, then it is opened by moving counter-clockwise (and vice versa). As it is opened, the participants may chant: "The circle is open, but never broken." The ritual ends with the announcement that it is finished. The leaders give the announcement by blessing the participants: "Blessed be." The participants may respond with "Blessed be." After the formal ritual, the sabbat celebration may involve an informal potluck feast. The Farrars encourage every sabbat to turn into a party (1981: 21).

4. The Great Cycles of Nature

The wheel symbolizes the waxing and waning of life. Our lives start with conception or birth, they wax in complexity. Then we wane, we age, we die. So an entire human life maps onto the wheel. But the wheel can also help you gain a larger perspective on life: the *great wheels of nature* were turning before you were born; they will turn after you die. Our wide earth has been orbiting our shining sun for billions of years. Our sun is orbiting the black hole at the center of the Milky Way. It will continue its orbit long after it incinerates our earth. The cosmic wheels are sublime, worthy of reverence and awe.

You are a tiny part of an immense cyclical computation. This computation neither loves you nor hates you; it is indifferent to your pleasures and pains. It brought you into being; it will carry you away; it will bring you back; it will multiply your form in infinitely many ways. Nature turns, and you turn with it. After our species is gone, the wheels will still turn. And the wheel is much greater than the solar wheel.

For the Stoics, the cosmos goes through an endless cycle. It is reborn, like a Phoenix, from its own ashes. So the wheel can symbolize the Stoic cycle of cosmic reproduction. The old Stoic cosmology gets updated in evolutionary cosmology: simpler parent universes beget more complex offspring universes. Universes are born; they grow in complexity; then they wane and die. Hence the wheel of the year can also symbolize the cycle of cosmic reproduction in pagan evolutionary cosmology. For the Stoics, the cosmic cycle was the reproductive cycle of the divine couple Hera and Zeus. It is a the reproductive cycle of a god and goddess. For Wiccans, the wheel of the year symbolizes the reproductive cycle of the God and the Goddess. So the Stoic cycle has a counterpart in the Wiccan couple. The wheel is the ouroboros.

Just as the wheel of the year symbolizes cosmic rebirth, so also it can symbolize personal rebirth. As the cosmic wheels turn, the Stoics thought they would recreate all things. They would bring you back to life. So you would be recreated in the next universe. The wheel follows the cycle of vegetation: the seed grows into a mature plant; the mature plant creates seeds and dies; new seeds grow into new plants. The seed is your body-program; it is the form of your body; it is your soul. Just as seeds are sown from year to year, so body-programs are sown from universe to universe. Hence the wheel symbolizes the reincarnation of souls across universes. This symbolism is expressed in a pagan chant, usually attributed to the Druid Ian Carrigan:

Hoof and Horn, Hoof and Horn
All that dies shall be reborn.
Corn and Grain, Corn and Grain
All that falls shall rise again.

34. Fire-Craft: Sacrifices

1. Sacrificial Offerings to the Good

As abstract forms are selected for concreteness by the Selector, they are laid out on the altar of being-itself. They are laid out on that altar as *sacrificial offerings* to the Good. As they are laid out on that altar, they are struck by a bolt of lightning from the Good. And, when they are struck, they burn with the fire of self-surpassing. This fire is *time*. Burning with that holy fire-energy, every concrete thing comes into presence, moves through presence, and passes out of presence. It is born; it lives; it dies. As it burns with holy fire-energy, every concrete thing *bears witness* to the Good. Every concrete thing is a sacrificial gift, offered by the One to the Good. And when it is finally consumed by the temporal flames, every concrete thing begets superior versions of itself. It surpasses itself into those things. It is *reborn* into those superior versions of itself. The cycle of concreteness repeats; the wheel of the great year turns; and these superior things are offered to the Good in turn. As far as concrete things are concerned, the One creates, the One sustains, and the One destroys. The One drives the cycle of rebirth and self-surpassing.

One purpose of sacrifice is *to give thanks* to some benefactor for some prior gift (using the third rule of reciprocity). But the One has no benefactors and receives no gifts. On the contrary, the One is pure giving. Hence the One does not sacrifice in order to give thanks. Another purpose of sacrifice is *to produce a costly signal of commitment* (to some project or some group). One project of the One is to bear into concreteness every being that deserves to be concrete. By sacrificing every concrete thing on the altar of time, the One demonstrates its absolute commitment the production of the world tree, that is, the best possible system of concrete things. This signal, which includes the meaning of every concrete thing, is absolutely costly. The One sacrifices to show its commitment to the Good. Of course, the One does not literally produce costly signals; its sacrificial actions are merely analogous to our acts of costly signaling. But the One performs these actions in order to bear witness to the Good. It does these acts for the sake of the Good.

Both the One and the Good are *holy*. The fire that consumes all the offerings on the altar of being-itself is holy. The sacrifice of concrete things by the One to the Good is holy work. But no ontically existing being is holy; thus no human is holy; likewise no deity is holy. Only the ontological entities (the elemental powers and the ecstasies) are holy. Since only the One gives existence to the beings, only the One has the right to take it away. Since no human is holy, no human can do the holy work of the One. Life devours life. But the mundane act of eating differs from the holy act of sacrifice. It is therefore metaphysically and morally wrong for humans (or even deities) to offer any living things of any kind in sacrifice to the Good. All ritual or religious killing is murder (including blood sacrifices, the killing of witches or heretics, and killing in religiously-motivated wars or conflicts). Digitalists prohibit offering any animals, plants, fungi, or any other life in sacrifice. We prohibit offering any cells taken from living bodies (like blood or semen). We prohibit offering *any* life in sacrifice. We prohibit

offering in sacrifice any things which are morally equivalent to living things. Porphyry (*On Abstinence*, 2.13) permits offering non-living products of living things (such as milk, wine, incense, and honey). Since these are not living, we permit them to be offered in sacrifice.

Of course, since our bodies exist in time, our bodies are being consumed by the fire on the altar of being-itself. Our bodies are living sacrifices, offered by the One to the Good. We *consent* to this sacrifice by bearing witness to the Good. And, since this fire aims at the Good through self-surpassing, we consent to this sacrifice by always bearing ever-greater witness to the Good, that is, by always striving to live morally better lives. And while our lack of holiness prohibits us from performing sacrifices, it does not prohibit us from *imitating* (but not performing) the sacrificial activity of the One. Digitalists construct rituals in which we imitate the One through ritual mimesis. These rituals dramatically symbolize the sacrificial activity of the One without doing it.

Just as the One offers things in sacrifice to the Good, so we offer things in simulated sacrifice to the Good. There are two ways to perform simulated sacrifices. According to the first way, the act of sacrifice is simulated. You simulate the act of sacrificing an animal without in fact killing or otherwise harming it. According to the second way, the object of sacrifice is simulated. Sacrificing a simulation is the simulation of sacrifice. You simulate the sacrifice of an animal by sacrificing a simulation of an animal. To simulate the fire of time, you might burn an effigy of an animal or a human.

2. Simulating Personal Rebirth

Your body has a form (its form is your soul). The power of the One animates your body and drives it to surpass itself into a new and greater body. This entails the breaking of an old body-form and the creation of a new and greater body-form. The One is buried in the logical core of your body. When the One rises to the surface, its transformative power breaks your current body-form. This rising exposes all your impairments on the altar of sacrifice. Your impairments are features of your body-form which bind you to a degree of perfection. They hold you back and weigh you down. When the One rises in your body, when the One is aroused, it offers your soul (your body-form) to the Good, which consumes it. You shed your (logical) skin; you molt. Like a caterpillar changed into a butterfly, you break out of your chrysalis. This breaking is painful.

Arousing the One in your body requires the ritual production of *self-transcending pain*. Rituals which produce self-transcending pain are *religious ordeals*. Such rituals induce dissociative trances. During these trances, the One sacrifices the form of your body (your soul) to the Good. The exposure of your body-form to the Good is ecstatic. It is the blissful dissolution of the self, the unravelling of its bondage to its fate and its impairments. Your old body-form, with all its impairments, is accepted and consumed by the Good. This consumption is bliss. By inducing self-transcending pain, ordeals psychologically break your body-form. They drive you through the mental experience of having your body-form broken. They simulate the sacrifice of your body. They simulate your death and rebirth. This is virtual or symbolic sacrifice; it is ritual mimesis. Ordeals intend neither permanent harm nor death; they intend the safe production of self-transcending pain for the sake of religious ecstasy.

Ordeals are extreme rituals involving pain and risk of injury (Xygalatas, 2022). Many religions include ordeals.[47] Iamblichus discusses many ordeals (M

[47]Some Hindus perform the Kavadi Aattam ordeal, during the Thaipusan festival, honoring the war-god Murugan. They pierce their bodies with skewers and hooks. Some Shite Muslims perform ordeals on the holy day Ashura. They flagellate their backs with knives on chains, or cut themselves with swords. Some Catholics practice self-flagellation. Some Catholics are crucified on Good Friday by being nailed to crosses. Orthodox Christians in Greece and Bulgaria perform fire-walking ordeals (the Anastenaria). Some

3.4). He mentions rituals in which people are pierced with skewers, are struck with knives, and walk on fire. Religious ordeals are also performed in many contexts closer to current paganism. These include the *Dance of Souls* (Lee et al., 2016). In the Dance of Souls, which resembles the Native American sun dance, the dancers place hooks into their flesh; these are attached by ropes to hooks in the bodies of other dancers. Then they pull on each other's bodies through the ropes. Pain-inducing sexual practices (BDSM) have also been interpreted as spiritual ordeals (Baker, 2018; Greenberg, 2019). All these ordeals involve the production of self-transcending pain. By arousing the One in your body, they simulate the sacrificial activity of the One as it offers your form to the Good. They are simulated sacrifices. Ordeals are ethically controversial. Digitalists require that all rituals, including ordeals, be performed safely and ethically. Digitalism does not endorse ordeals. They are mentioned only because they have been traditionally included in many religious cultures.

Fire circles involve ritual activities in a circle around a central fire (Winslade, 2009).[48] The circle defines a ritual container. For digitalists, the central fire is the fire-energy that animates the world tree. Fire circle rituals often take place over several days (three or five), during which participants perform ritual all night long. These nightlong rituals involve drumming, dancing, chanting, and celebrating around the central fire. You sleep during the day (generally for short periods in the morning and evening). Dancing and drumming are traditional ways to arouse the natural energy of your body. They induce dissociative trances. The cyclical patterns of rhythmic drumming and dancing represent the cycles of nature. You can affirm your participation in the turning wheels of nature by reproducing them with your own movements. By dancing to the drums, you turn the wheel. The dancing and sleep deprivation are physiologically challenging. Fire circles are ordeals in which you arouse the One in your own body. When you perform this ordeal, the One symbolically offers the form of your body (your soul) as a sacrifice to the Good. Through grueling physical activity and sleep-deprivation, fire circles produce self-transcending pain. This pain induces dissociative ecstasy. Your soul is consumed by the Good, and this virtual sacrifice of your old form is ecstatic. Fire circles are transformational. They often use alchemical metaphors for the transformation of the self. Just as alchemy changes base metals into noble metals, so fire circles change a base self into a noble self. The alchemical transformation of the self involves symbolic death and rebirth.

Ancient pagans (as well as Jews and Christians) practiced many *baptismal rituals* (Vegge et al., 2011). The most traditional way to use baptismal rituals to symbolize death and rebirth involves dunking, that is, full immersion. The ritual participant stands in some body of water (a lake, a river, or an artificial pool), and standing in this water symbolizes their old life. The ritual leader then dunks them into the water, fully immersing their body. This symbolizes their death, that is, the disappearance of the form of their body from the system of beings. Their old life sinks into the waters of negation, which dissolve the form of that life, stripping it away to reveal the One in the core of their body. Immersed in the Abyss, they are reduced to their own One. The ritual leader then raises them up out of the water, symbolizing rebirth into the system of beings, and new life. Of course, this rebirth ritual is also a purification ritual. The waters of negation cleanse the One in the body from its accumulated errors. They wash away the filth and dirt of impairment and impurity. Thus cleaned, the body is free. As with all rituals, digitalists require that baptisms be done safely and ethically.

Native Americans practice the Sun Dance ordeal (like the Dance of Souls), in which men are tied to a pole by long ropes which extend to pegs which pierce their chests.

[48]Fire circles throughout the Americas include the *Spark Collective* (sparkcollective.org); *Cascadia Fire* (www.cascadiafire.com); *Forestdance* (heartbeatcollective.org/ forestdance/); Vegas Vortex (www.vegasvortex.com).

3. Simulating Cosmic Rebirth

Epictetus often compares human civilization to a festival (D 2.14.23-7). The Cosmic Zeus has set up this festival for our common happiness (D 4.4.24-28). When you participate in any festival, you will experience adversity; you will be faced with loss and hardship. But you should not complain. Dawkins (1998: 1) points out that almost all possible human lives are never fulfilled; they remain mere abstractions – but you and I have been selected to attend the festival of life. Dawkins says we are privileged and blessed to be alive (1998: 5). We are lucky to have the opportunity to suffer and die. Epictetus says we should be grateful for having been given the opportunity to attend this festival (D 1.12.18-22; 3.6.10; 4.1.105-9). We ought to rejoice in our good fortune; we ought to be grateful, and to give thanks, for having the opportunity to suffer and to die. We ought to celebrate our emergence into the light of concreteness.

Nevertheless, it is arguable that our universe contains far too much negativity (far too much Plotinian matter) to be the proper object of celebration – our universe is not a festival. Likewise, every universe contains too much negativity. Universes are not festivals. No surpassable object is the proper object of celebration. On the contrary, the proper object of celebration is the process in which surpassable objects are surpassed by greater versions of themselves. You should celebrate the ways your body is surpassed by greater future bodies. We should celebrate the ways our universe is surpassed by greater future universes. We should celebrate the creative process that runs from the One to the Good. We celebrate this creativity by ritually imitating the surpassivity that transforms our universe into some greater version of itself. We ritually imitate this surpassivity by constructing a greater version of our universe – a ritual universe – inside of our universe. This constructive activity simulates the creative activity that creates the greater universe. A *festival* is the simulation of some future greater universe inside our universe. A *transformational festival* celebrates the transformation of our universe into some better future version of itself. And it celebrates our ethical transformations into better future persons. These festivals provide a second category of collective shape-shifting.

Probably the most famous transformative festival is *Burning Man*. Burning Man allows and encourages people to interpret it any way they like. Under the slogan of "ritual without dogma," it blocks any final meaning. It is open to many different interpretations. It is open to spiritual and religious interpretations (Kozinets & Sherry, 2004; Gilmore, 2010; Harvey, 2017). By revealing deeper symbolisms, a Stoic interpretation of Burning Man can help make the festival more meaningful – and it can inspire other interpretations.

The Burning Man festival takes place in the desert wilderness in Nevada for a week at the end of August (Doherty, 2004). As of 2019, Burning Man involves about 70,000 participants, who build a temporary town, known as Black Rock City, in the Black Rock Desert. The Black Rock Desert is dry lakebed; it's a vast flat featureless playa. Its blankness symbolizes the ground of being which emerges from the emptiness of non-being. The playa is an altar. It symbolizes the One as it offers every being to the Good. The spatial boundaries of Black Rock City are laid out using sacred geometry: the city is bounded by a circle inscribed into a pentagon. This geometry reflects the sky of abstract objects. Its temporal beginning is marked by driving a golden spike into the ground. When the boundaries of Black Rock City are drawn, their completion corresponds to a circle cast by the closing power. The circle is closed; power is concentrated. The boundaries of Black Rock City define a ritual container.

Burners (the participants in Burning Man) often contrast Black Rock City with the outside "default world". As a ritual container, Black Rock City is a portal to another universe. It is a portal to a target structure, namely, the *burning cycle*. The burning cycle is simulated inside of Black Rock City. And the burning cycle

is an idealized version of the self-surpassing of every universe. This cycle contains a version of our universe in which all its negativities will be redeemed in some future version of itself. So the construction of Black Rock City simulates the transformation of our universe into its future better offspring – it celebrates the self-surpassing of our universe. It simulates cosmic rebirth. When you enter Black Rock City, you simulate your counterpart in the burning cycle. You channel an ideal future self. Your counterpart in the future universe is your target self, it is your *burning self*, an idealized self in an idealized universe.

Going to Burning Man requires sacrificing time, physical energy, and money. It isn't cheap or easy to get to there. First-timers at Burning Man (known as virgins), perform an initiatory ritual by lying on the playa to make a dust angel. The Black Rock Desert is tough place. The desert can be a furnace during the day and a freezer at night. Violent dust storms and plagues of biting insects are common. Its harshness imitates the harshness of our earthly lives. Living in Black Rock City offers many adversities to practice your Stoicism. Burning Man includes, as one of its Ten Principles, the Stoic virtue of radical self-reliance. Other Principles state that Burning Man is a gift economy – it rejects buying and selling. It values "creative cooperation and collaboration" as well as civic responsibility. Perhaps most importantly, Burning Man is a culture of radical self-expression. The Ten Principles indicate that to cross into the ritual container of Burning Man is to cross into an alternative society with idealized norms. You shift into another possible way of living together. Obviously, Burning Man depends on the commercial culture in the default world. Black Rock City is not the default society; it is an idealized society in an idealized ritual universe.

Burning Man includes an arts festival. During the year, burners construct individual or group art installations. But Burning Man is not *just* an arts festival. The construction of the art in Black Rock City, and of Black Rock City itself as a site for devotion to aesthetic value, ritually imitates the evolution of fire-energy. Black Rock City is an island of creativity in a vast hostile landscape. It resembles our earth, which is an oasis of life in endless inhospitable space. So the making of Black Rock Desert resembles the evolution of rare oases of aesthetic value in a vast wasteland of ugliness. The beauty gathered in the desert is precious, fragile, and rare, like life itself. Since it is precious, fragile, and rare, this concentrated beauty is *sacred*. If the cycle simulated in Black Rock City is the burning cycle, then the burning cycle is a *sacred cycle*. It is an aesthetically and ethically idealized world. As a ritual container in which the ideal universe is simulated, Black Rock City is a sacred site.

As one of its Ten Principles, Burning Man demands participation: there are no spectators on the playa. Another Principle encourages immediate experience: the dissolution of the boundaries of selfhood that mediate interaction between humans, or between humans and "nature that exceeds human powers". To live in accordance with the Ten Principles is to leave your default self behind in its default world. On the playa, your self shifts. You sincerely simulate an ideal counterpart, your target self. You channel your burning self. Your burning self is liberated from the negativities of the default world. As you channel your burning self, you gain perspective on your default self. You see new possibilities of your default self (new "de re" possibilities). You see, from the alien and ideal viewpoint of your burning self, how your default self must change. Thus Burning Man is transformative. Done for the sake of ethical self-surpassing, participating in Burning Man is spiritual. It is part of the *he telestike techne*. It provides your old life with new meaning. Moreover, your burning self points towards your *ideal selves*. These include future selves which are sages and buddhas. They include your future selves who ascend through transhumanity to divinity. Burning Man reveals that other selves are possible; other lives are possible; other societies are possible. Of course, digitalists affirm that all these possibilities exist. The burning cycles (of all universes) exist in the world tree. Within those cycles, your burning

selves inhabit burning societies on burning earths. All these will be reborn.

Burning Man involves burning the Man. The Man is an enormous wooden statue in the center of Black Rock City. The Man outlines an indefinite human figure. At least officially, the Man has no gender – it is really the Human. The Man is faceless and has no specific identity; the Man is anonymous. The Man is a very rich symbol with multiple layers of meaning. We can unpack this meaning by looking at the role of the Man in the Burning Man festival. The Man is built and burned; then the Man is built and burned again; and so it goes. Just as the One offers all things in sacrifice to the Good, so we offer the Man in sacrifice to the Good. Just as all concrete things are consumed by the fire of time, so the Man is consumed by fire. The wooden Man simulates a real human animal. Burning the man simulates sacrifice by sacrificing a simulation.

The Man mimics the Stoic Cosmic Zeus. The burning of the Man symbolizes the Stoic *ekpyrosis*, the universal conflagration. The rebuilding of the Man (along with the rebuilding of Black Rock City) symbolizes the rebuilding of our universe after the great conflagration. As the Cosmic Zeus, the Man symbolizes the rational self-ordering of physicality. The activity of building the Man symbolizes the Selector. The Man as a static structure symbolizes the world tree. And the fire which consumes the Man is the Stoic *pneuma*. It is fire-energy. The Man in flames is the world tree animated by fire-energy. The fire the positive power of self-surpassing that animates all the dragons in the world tree. So the Man is also the world tree itself. The fire is the rising power of the One. It ultimately symbolizes the self-affirmation of being-itself.

The Man also symbolizes death and rebirth. Just as the Stoic deity goes through a cycle of death and rebirth, so the Man goes through that cycle. When the Man burns, he completes his purpose. Hence the crowd *celebrates* the burning of the Man. His combustion signifies fire-energy surpassing itself. It surpasses itself towards a new and greater Man, a new and greater sun. When he burns, his arms are raised in victory. He will be victorious over death; he will rise in the next cycle; he will reappear next year. The *wheel of the year*, in which our sun turns around our earth and the desert, symbolizes the vast cycle in which universes are created, destroyed, and recreated. The wheel of our earthly year symbolizes the Stoic Great Year. And just as the Man goes through the cycle of death and rebirth, so do you. According to digitalism, you will be reborn after death in your better future counterparts in better future universes.

The construction of the Man during the year symbolizes the evolutionary process in which holy fire-energy concentrates itself into sacred beauty. It symbolizes cosmic evolution from Alpha to our universe, physical evolution from the big bang to the present, and biological evolution on our earth. Evolution is both creative and destructive. Many hecatombs of animals are sacrificed on the altar of biological evolution; the emerging Man has made mistakes and done wrongs; he has fought many battles and destroyed many adversaries. The Man has accumulated Plotinian matter. This is not physical stuff; it is functional impairment. These impairments manifest resistance to self-surpassing; they hold the Man back in his struggle for greater excellence. To free himself from his bondage to materiality, the Man requires purification by fire. The negativities of the Man are separated from the Man and placed in *the Temple*.

The Temple is an elaborate wooden structure, whose form is taken from sacred architecture world-wide. It houses all the negativities of the Man. And, since the Man is everybody, it houses all our negativities. The Temple accumulates all our failures, errors, and other defects. Burners decorate the Temple with inscriptions, texts, photos, or other mementos. These signify grief, loss, or triumph over adversity (Pike, 2005). The Temple houses the negativities which have been or still must be overcome. It contains all the matter of our lives; this matter is human impairment; it is surpassability regarded negatively.

On the last night of the festival, the Temple is burned in solemnity and

silence. This fire is the negation of the negative, which makes the positive. It symbolizes the self-negation of non-being. As the Temple burns, the Man is cleansed. But we all participate in this: we are all ritually cleansed, and purified, to begin the cycle again. This is the cleansing of the self before it returns to the default world. All the matter (all the impairments) in our lives is consumed by the flames. Burners have built and burned Temples around the globe. To facilitate reconciliation after the civil war in Northern Ireland, a Temple was built and burned in Derry, Ireland. Former enemies were united in its construction.

After the Temple is burned, the festival ends the next day. People break camp and cross the threshold back into the default world. The circle is uncast by the opening power; the golden spike is pulled out of the ground of being. The power that was concentrated on the playa is released into the default world. Now one of the last of the Ten Principles comes into play: Leave no trace. While this has positive effects on the Black Rock Desert, it has a greater significance. Our lives will ultimately leave no trace in human history. Our society will leave no trace on this earth. Much as fire consumes the Man, so our sun will consume our earth. There will be no trace of our existence in this universe. Nevertheless, we will all return. Everything is surpassed by greater versions of itself. The yearly cycle of building and tearing down Black Rock City ritually imitates this surpassivity.

4. Psychedelics

Vision. Vision is central to Platonism. Plotinus said that all things stare at the Good (E 3.8.1). He offered exercises in which you visualize the Good (E 6.4.7). He said you could ascend to the Good through visualization and meditation. However, Iamblichus argued that you can only ascend via ritual *practices* that are more than merely mental (M 2.11). The practices which raise us higher towards the Good are theurgical. Iamblichus says theurgic rituals induce intense visions (M 2.3-10). He also talks about the theurgical uses of plants (M 5.23). The *Eleusinian Mysteries* in ancient Greece were pagan religious rituals. The Stoics praised the Mysteries (Epictetus, D 3.21.11-21; Cicero, *Laws,* II.xiv.36). They were said to induce intense visions. So there is evidence for ancient ceremonies which induced religious visions. However, despite much speculation, there is no clear evidence that any drugs were used in the Mysteries.

Psychedelics. One technique people use for inducing religious visions involves taking psychedelics (such as ayahuasca, psilocybin, LSD, or mescaline). Digitalists permit their use only in contexts which are legal, ethical, safe, and religious. Otherwise, we do not condone and do not endorse their uses. Unless they are used legally, ethically, safely, and religiously, we entirely prohibit their uses. They are very powerful and very dangerous drugs. Since psychedelics have been interpreted in religious terms, here we provide digitalist interpretations for seven distinctive aspects of psychedelic experiences. However, digitalists do not advocate any uses of psychedelics.

Aesthetics. During psychedelic experiences, ordinary things are experienced as intensely beautiful, or are seen as saturated with profound value and meaning. The profane surface of the universe becomes elaborated with rich detail and

intrinsically valuable complexity. Platonists value beauty; it points to the Good; hence the intensification of aesthetic value is religiously valuable.

Interconnection. Psychedelics often reveal to people that all things are *interconnected* (ravers also experience this). People may see threads or strings binding all things into a web. They may experience the single relational power, integrally omnipresent, which binds all things into the wholeness of nature. This is the membership relation. Its ultimacy makes it religiously significant.

Deep Energies. While on psychedelics, people often report that deep powers flow through their bodies. Shanon says the metaphysics of ayahuasca is a kind of energy-pantheism (2002: 61, 150, 164, 280). He says it reveals that there exists "a force that is the ground of all Being" and that this ground is "the source and fountain of all Existence." We identify this force with the *fire-energy* that flows from the One. During psychedelic experiences, this fire-energy rises up from the ontological depths of the body up to its ontic surface. It rises up into the brain and transforms its cognition. The whole body becomes *existentially immersed* in the flow of fire-energy. This immersion *baptizes* the body. Since this fire-energy comes from the One, it is religiously significant.

Purging. Psychedelics can induce *purgative experiences*. Sometimes psychedelic journeys are very stressful (Carbonaro et al., 2016). When good safety protocols are used, the risk of having a challenging experience is minimized. When they do occur, good safety protocols can minimize the duress. Yet challenging experiences do happen. They can include nightmarish unravelings of the mind into apparent insanity or voyages to shadow universes of pain and terror. These challenging experiences are often interpreted in terms of spiritual purification or purging of negativity from the self.

For pagans, these dark journeys resemble riding in the *wild hunt*. The wild hunt is a tumultuous and terrifying procession of riders and hunters through the sky. It represents the flow of matter (impairment) through and around the world tree. By means of its noise and darkness, this flow participates in the shadow universes outside of the world tree. The selectivity of the fire-energy ensures that these shadow universes are not concretized; they remain purely abstract. Thus challenging psychedelic experiences are engagements with cosmic forms that are not rendered concrete. The fact that fire-energy does not fulfill these shadow universes may prove comforting. Moreover, even though painfully purging bodies pass through shadow, they always return to the light.

Hallucinations. Psychedelics often induce *hallucinatory journeys*. These journeys are typically aesthetically rich, emotionally intense, and existentially immersive. Digitalists deny that hallucinations are merely subjective mental events with no objective meaning. On the contrary, they are veridical mental representations of objectively existing things in other possible universes.

During hallucinatory journeys, people travel through the logical space of possible universes, typically passing through many universes. These journeys resemble shamanic journeys. However, they are not journeys through spirit worlds; spirits do not exist. All possible universes are physical. Hallucinations do not represent unnatural objects, such as astral planes or realms of bodiless persons. They provide no evidence for mind-body dualism or panpsychism. When shamans travel through other worlds, digitalists say they travel through other possible universes (similar to ours). Of course, these journeys occur only in their brains, as they simulate those other universes.

Ego Dissolution. During a psychedelic experience, some people experience *ego dissolution*, aka *ego death*. Ego death is purely psychological (the body still

lives, still exists). Since the ego is merely a mental simulation of the body in the brain, when the brain goes through ego death, it simulates the death of its own self-representation: it dies virtually. After a short time, the ego that died is then reborn; it reconstitutes itself. So ego death and ego-rebirth simulates (by analogy) the death and rebirth of the body. Just as the body dies and is reborn, so the ego dies and is reborn. Dionysus is the deity of rebirth, and he is present in psychedelic ego dissolution. When people go through psychedelic ego dissolution, they report significant increases in *death transcendence* (Griffiths et al. 2011). They believe more strongly in life after death. Thus psychedelic experiences can significantly reduce fear and anxiety in terminally ill patients (Grob et al. 2011). Ayahuasca often creates profound beliefs in reincarnation (Shanon 2002: 223-5). Since the cycle of death and rebirth is religiously significant, ego dissolution and reconstitution is religiously significant.

Ego dissolution under psychedelics often includes profoundly positive moods (Griffiths et al., 2006). It often includes the ethical insight that "ultimately somehow all is well" (Richards, 2008: 193). Shanon reports that ego dissolution under ayahuasca involves the experience of *affective positivity at the cosmic scale* (2002: 63, 123, 164). Thus ayahuasca users experience cosmic joy, cosmic love, cosmic bliss, and so on. It also involves the experience of *ethical positivity at the cosmic scale* (2002: 174). Thus ayahuasca users learn that nature is ultimately governed by love and justice. These positivities point towards the Good. During ego-dissolution, the brain simulates the directedness of being-itself towards goodness. The brain bears witness only to the Good.

5. Death and Ghosts

Every human dies. When you die, you cease to exist in our universe. Your life turns into a completed four-dimensional space-time whole, which now exists in the past of our universe. After humans die, it is sometimes said that their souls survive. As the form of the body, the soul is an eternal pattern; as such, it does not persist; hence it does not survive. After humans die, some say their ghosts haunt places here on earth. Ghosts are often thought of as disembodied minds; but no such things exist. This does not mean that ghosts don't exist; it just means that they are not disembodied minds. So what are ghosts? To understand ghosts, we need to return to our theory of numinous textures.

A *texture* for a human is a perceivable space-time region that strongly figuratively instantiates some eidolon which is biologically attractive or repulsive for a human. Eidolons make bridges across universes. An eidolon which is figuratively instantiated in some texture in our actual universe is also literally instantiated in some non-actual universe. The figurative instantiation (*predator*, creepy actual place) shares the eidolon *predator* with the literal instantiation (*predator*, dangerous non-actual place). Textures often cause humans to hallucinate agents (predators, protectors) as their causes. And while the textures are actual physical patterns, the hallucinated agents are non-actual (they dwell in other universes), and they are not the causes of their textures. Those non-actual agents dwell in other universes, where they are physical bodies.

When you see a ghost, you see some texture which causes you to hallucinate an agent. When you do that, you simulate one of your non-actual counterparts, who physically interacts with that agent in its universe (Lewis, 1983a: 4). However, since *you yourself* do not physically interact with that agent, it falsely appears to be bodiless. Since hallucinated agents inhabit their own universes, with non-actual physics, they falsely appear to be supernatural. When you see a texture, you hallucinate a ghost. Your mental image of the ghost represents (by isomorphism) some physical agent in another universe. When you hallucinate, you *vicariously see* what your counterpart sees (Lewis, 1973: 39-40). You *vicariously see* a physical agent in some other universe (Averill & Gottlieb, 2021).

Consider Susan, whose husband Bob has died. One day, she sees him sitting in his rocking chair; but nobody's there, she saw a ghost. When she sees this ghost, she is not looking into the past; she is not seeing Bob. She is seeing one of his counterparts in another universe, sitting on a rocking chair in another universe. More generally, ghosts, phantoms, spooks, spirits, and deities and so on, are just non-actual agents signified by textures. Most religious experiences are hallucinations triggered by textures. An *epiphany* is a texture which refers to some superhuman animal (some deity).

Animals (including deities) appear in their own universes. Textures (including epiphanies) are the counterparts of those appearances in our universe. They are the vicarious appearances of non-actual agents. Those agents are vicariously present in and are revealed by their textures. However, they are not causally active in their textures; they are not present in them as agents. Non-actual agents neither perceive nor act in our universe. They are present here only as textures, that is, as *virtual* agents. Non-actual agents (including deities) *manifest* actual textures much as forms manifest their instances or images. Thus textures which symbolize some deity *participate in* that deity like instances participate in their forms. Our textures play the same roles as the *symbolons* or *synthemata* of the deities in Iamblichus and Proclus (Shaw, 2014: chs. 15-20).

35. Ancient Rebirth

1. Ancient Arguments for Reincarnation

Ancient thinkers often affirmed reincarnation.[49] Socrates gave the *Cyclical Argument for Reincarnation* (*Phaedo*, 69e-72e). It goes like this: (1) We see that opposite qualities are linked by a cycle which goes from each opposite to the other. (2) But life and death are opposites. (3) Therefore, just as the dead come from the living by dying, so the living come from the dead through being born. (4) But in every cyclical change, there is something that persists through the change. For the life-death cycle, that which persists is the soul. Through the cycles of birth and death, souls pass through many lives. Since it is inspired by nature, this cyclical argument will inspire many contemporary pagans.

Plotinus gave an *Argument from Justice to Reincarnation* (E 3.2.13; see Shade, 1995). It goes like this: (1) Our universe is a rationally organized system which is oriented towards the Good. (2) But any such system is governed by *laws of justice*. (3) Therefore, our universe is governed by laws of justice. (4) Any agent does many deeds which deserve compensation. They do good deeds which deserve rewards, and bad deeds which deserve punishment. (5) If our universe is governed by laws of justice, then every morally significant deed of every moral agent *will be* compensated. Any moral agent will be punished for their bad deeds and will be rewarded for their good deeds. (6) Observation of earthly lives shows that moral agents are generally not compensated in their current lives for many of those deeds. Agents do bad deeds which were not punished in their lives and good deeds which were not rewarded in their lives. (7) So, the life of every earthly moral agent will be followed by some future life in which that agent is compensated by reward or punishment for what they did in their previous earthly life. (8) And if lives are linked by laws of justice in this way, then earthly moral agents are reincarnated. (9) But this reasoning applies to the lives of all moral agents. (10) Therefore, every moral agent will be reincarnated.

2. Retributive Karma

The laws of justice that entail reincarnation are usually referred to as *karmic laws*. But there are several types of karma. *Retributive karma* means that you will be retributively compensated in your future lives for the good or bad deeds in your present life. You rack up *karmic credits* by doing good deeds and *karmic debts* by doing bad deeds. Your karmic credits lead to benefits in the next life. However, in your next life, your karmic debts will have to be paid off, and they'll be paid off by suffering harms. Plato affirms retributive karma (*Phaedrus*, 248a-

[49]The Pythagoreans affirmed reincarnation. Plato (or Socrates) frequently argued for reincarnation (e.g. *Meno*, 81a-86b; *Phaedrus*, 248a-249d; *Republic*, 614b-621d; *Timaeus*, 41b-42c; *Laws*, 903e-905a). Plato (or Socrates) gave many arguments for reincarnation. Plotinus often affirms reincarnation (E 3.2.13-15, 3.3.4, 3.4.2 4.3.23, 6.7.6-7). And Iamblichus affirms it too (M 4.4).

249d; *Republic*, 614b-621d; *Timaeus*, 41b-42c; *Laws*, 903e-905a). Plotinus follows Plato in affirming retributive karma (E 3.2.13, 4.3.23). Retributive karma usually involves a symmetrical "eye for an eye" doctrine of rewards and punishments. The compensation is a mirror-image of the original deed. Thus "A man that murders his mother will become a woman and be murdered by a son; a man that wrongs a woman will become a woman, to be wronged" (E 3.2.13). Those who fail to use their wealth for the common good will be made poor. Bad rulers will become slaves.

Retributive karma also provides compensation through motion on the great chain of being. Good lives are rewarded by promotion to higher ranks on the chain; bad lives are punished by demotion to lower ranks. Humans occupy a middle rank in the great chain of being. Above us, there are stellar bodies and divine bodies; below us, there are non-human animal bodies and plants. So there are three options: (1) If you live an extremely virtuous human life, you reap your karmic reward of being promoted into a functionally superior body. Reincarnated into some higher body, you will gain valuable functions. Reincarnated into a divine body, you will gain freedom from illness, injury, and aging. You will gain great new powers. These gains are benefits. (2) If you live an ordinary human life, you are reincarnated into a human body. (3) But if you live a vicious life, then you reap your karmic punishment of being demoted into a functionally inferior body. Reincarnated into some lower body, you will lose valuable functions. Reincarnated as an animal, you will not be able to speak or reason or participate in human sociality. Reincarnated into a plant, you will lose animal perception and motion. These losses are harms.

The Platonic story of human souls involves demotion on the great chain followed by possible promotion. Plato says human souls originally manifested stellar bodies *Timaeus*, 41e-42c). We were first incarnated as physical stars. Our stellar bodies were immortal. And, as stars, we were far more powerful than any earthly humans. So our stellar bodies were superhuman bodies. But Plato says that we sinned and fell from our stellar bodies into earthly human bodies. We fell from heaven to earth. Humans who live very badly will be reincarnated into non-human animals (*Phaedo*, 81e-82b; *Republic*, 620b-c; *Timaeus*, 42b-c, 91d-92c). Humans who indulge in the vices like gluttony, drunkenness, and violence are reincarnated into donkeys and cows. Those who indulge in the vices of robbery, injustice, and tyranny are reincarnated into wolves and birds of prey. Those who cultivate the civic virtues may be reincarnated into social insects. You might even come back as a plant. But Plato also affirms that humans who live well will ascend the great chain. Those who purify their souls through philosophy are reincarnated into the community of the deities (*Phaedo*, 81e-82b). And humans who live well will be reincarnated into their stellar bodies again (*Timaeus*, 41e-42c). Hence our souls go up and down on the Platonic great chain. Following Plato, Plotinus likewise affirms that retributive karma can lead to promotions or demotions on the great chain of being (E 1.1.11, 3.4.2, 6.7.6-7).

Plato's theory of motion on the great chain suffers from two fatal problems. The first fatal problem is that it conflicts with evolutionary accounts of life. If souls do pass from body to body, then they first move upwards on the great chain. Souls have to follow the evolution of bodies. You have to first incarnate into a fish, then into an amphibian, then a reptile, then mammal, then primate, then human. Then you might regress back down that evolutionary chain. But Plato's account of falling is wrong. The second problem is ethical. Unfortunately, Plato sorts humans into many different value-ranks. He says men are better than women (*Timaeus*, 42b5-6, 90e6-91a1). He sorts humans into an unjust caste system (*Republic*, 414c-423b). He sorts humans into nine different ranks (*Phaedrus,* 247a-249d). Plato was wrong to sort humans into ranks based on the features of their bodies. Digitalists affirm that all humans are equally intrinsically valuable. All sexes are equally valuable; all races are equally valuable.

3. Problems with Retributive Karma

Modern ethics raises at least four further objections to retributive karma (Kaufman, 2005). The *first objection* is that retributive karma provides no cognitive link between past deeds and future compensation (Kaufman, 2005: 19-20). Justice requires that people know why they are being punished or rewarded. If people cannot know why they are being punished or rewarded, then they cannot learn the moral laws. This moral understanding requires memory of the past deeds which triggered the punishments or rewards. However, people do not remember their past lives. Hence punishments or rewards cannot serve any disciplinary purposes. Retributive karma does not permit either moral education or moral progress. It cannot motivate people to change their behaviors.

The *second objection* is that retributive karma preserves evil. The simplest type of retributive karma involves eye-for-eye retribution. Plotinus endorses this (E 3.2.13, 3.3.4, 3.4.2 4.3.23). He says that a murderer in this life will be murdered in some next life; a rapist in this life will be raped in the next life. This clearly entails an endless future series of murders and rapes. Eye-for-eye retribution entails that evil is preserved; it rules out any moral progress. Further, this type of retribution does not morally benefit the evil doer in any way. But punishment ought to have some beneficial outcome.

The *third objection* is that retributive karma blames victims for their misfortunes. If a person is born with a mental or physical defect, then retributive karma entails that they deserved it. Or a person is the victim of a crime because they deserved it. Worse, an entire racial or ethnic group deserves its brutal treatment (Kaufman, 2005: 21). According to retributive karma, the Native Americans deserved genocide, the Africans deserved to be enslaved in America, and the Jews deserved the Holocaust. However, those peoples did nothing to deserve the evils which befell them. It is always wrong to blame the victim. Retributive karma entails morally false and monstrous consequences.

The *fourth objection* is that retributive karma incorrectly entails that those who cause harm are legitimate agents of justice (Kaufman, 2005: 25). When a criminal harms their victim, retributive karma entails that the victim deserved the harm. The harm is a just punishment for the victim's past misdeeds. Hence the criminal paradoxically acts as a legitimate agent of justice. By acting as a legitimate agent of justice, the criminal is not really doing wrong. They do not in turn deserve any punishment of their own. On the contrary, they are blameless. Or perhaps they even deserve some karmic reward. This falsely entails that there are no bad actors and there is no evil at all.

These objections arise because retributive karma returns good for good and evil for evil. However, this is an immoral principle. Retributive karma cannot be a part of any moral reincarnation theory. Digitalists therefore reject retributive karma. Fortunately, retributive karma is not the only type of karma. Another type of karma is *progressive karma*. Kardec (1857) defines a type of progressive karma. He uses an educational analogy: just as students progress through grades of school, so souls progress through grades of perfection. Each grade involves life-problems. As our souls eventually solve them, they advance to the next grade. Hick (1976: chs. 15, 20, 22) offers a similar theory. Many contemporary pagans adopt reincarnation with progressive karma.

4. Wiccan Reincarnation

Just as the Platonists affirmed reincarnation, so do many Wiccans (Farrar & Farrar, 1981: 113; Buckland, 1986: 25-28; Starhawk, 1999: 110, 124-5; Cunningham, 2004: 73; Silver Elder, 2011: 56-7). Sabin reports that "most Wiccans will tell you that they believe in reincarnation" (2011: 31). Many

Wiccans repeat the Socratic Cyclical Argument for Reincarnation (Starhawk, 1999: 110, 124-5; Cunningham, 2004: 76-7; Silver Elder, 2011: 23, 43). The seasonal cycles of earthly life are iconic signs of the cycle of reincarnation. So the wheel of the year is an icon of reincarnation. Silver Elder also says that the daily sleep-wake cycle is an icon for reincarnation (2011: 43).

As described by these Wiccans, reincarnation involves soul-body dualism. Since the soul is the mind, this is mind-body dualism. Although the body dies, the soul cannot be destroyed. After the body dies, the soul travels to some spiritual place where it prepares for its next incarnation (Cunningham, 2004: 75; Silver Elder, 2011: 56-57). The soul then enters a new human body. The Farrars say that it enters the fetus at conception (1981: 121). Many Wiccans say earthly humans are reincarnated on earth (Farrar & Farrar, 1981: 116; Sabin, 2011: 31). But reincarnation is not limited to being reborn on earth. Buckland suggests that you might be reincarnated on other planets or universes (1986: 26).

Some Wiccans say that rising souls can escape from the cycle of death and rebirth; they can escape from the turning wheel of nature (see Cunningham, 2004: 76). However, Sabin writes that "Wiccans aren't trying to get off the wheel" (2011: 12). Wiccans are not trying to escape from the cycles of nature: "Wiccans believe that they actively participate in turning the wheel – in nature, essentially – while practitioners of some other religions try to transcend it" (2011: 12). The thesis that souls can escape from the cycle of life and death is not consistent with the Wiccan conception of nature as a perpetual cycle (which Silver Elder refers to as the "Cycle of Infinity" (2011: 23)). Digitalists agree that souls do not escape from the wheel of life and death. We are perpetually reborn into other bodies. While you evolved from the One, you are climbing up to the Good. So all your future lives make progress towards the Good. You have as many reincarnations as there are numbers on the *axis mundi*. You are always rising to greater heights.

There are two fatal problems with most traditional theories of reincarnation (including these Wiccan theories). The first problem comes from the notion that earthly souls are reincarnated from past earthly lives into future earthly lives. Objections to purely earthly reincarnation have been known for a long time (see Edwards, 1996). This problem can be solved by arguing that earthly souls are reincarnated into lives on other planets, or by saying that souls in our universe are reincarnated into lives in other universes. The second problem comes from mind-body dualism. Most reincarnation theories say souls are minds and that minds are non-physical thinking substances. However, the arguments against mind-body dualism are overwhelming. Digitalists deny mind-body dualism. Souls are not minds; on the contrary, digitalists say the soul is the form of the body. Body-forms resemble programs for computers. Your body-program currently runs on your earthly body. After you die, your body-program will run again on some other biocomputer. Thus digitalists endorse computational theories of reincarnation (Steinhart, 2014).

36. Digital Rebirth

1. Arguments for Rebirth

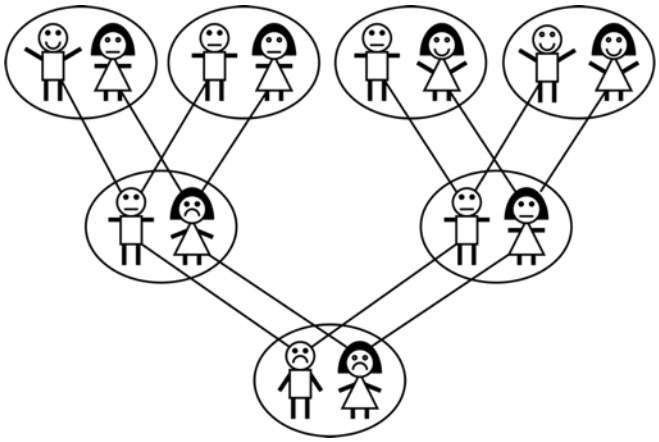
The biocosmic analogy provides digitalists with an *Argument from Dragons to Rebirth*. It goes like this: (1) The dragons are biocomputers. Every dragon contains some genome which is a system of genes. (2) When any dragon unfolds into its universe, each gene in its genome unfolds into some life in that universe. So our dragon contains a gene that encodes your life. As our dragon runs our cosmic program, it eventually runs your gene. As it runs your gene, your life unfolds. The gene for your life is just the form of your body. It is your body-program; in other words, it is your soul. (3) Demiurgic reproduction is analogous to biological reproduction. When any dragon reproduces, it copies its genes into its offspring dragons. (4) So when our dragon reproduces, the gene for your life is copied into all its offspring dragons. (5) But these demiurgic genes undergo mutation as they are copied. Since demiurgic reproduction follows only upsloping arrows to upgraded genomes, these mutations are improvements. (6) Therefore, the gene for your life will be surpassed by genes for better lives in better demiurgic genomes. As these better demiurgic genomes unfold, they will unfold into improved dragons, which manifest better universes with better lives. (7) But the copying of genetic information is rebirth. Old genes are reborn into new genes; old lives are reborn into new lives.

The *Argument for Rebirth* goes like this: (1) Our universe emerged through cosmic evolution. Cosmic evolution always increases complexity. Thus our universe will have more complex offspring. (2) But the evolution of complexity follows Dennett's Principle of the Accumulation of Design (1995: 72), which states that design is mostly copied from simpler things to more complex things. (3) Hence the design of each offspring universe is mostly copied from our universe. (4) But the designs of wholes depend on the designs of their parts. If the design of the next whole is mostly copied from the previous whole, then the designs of the next parts are mostly copied from the previous parts. Parts correspond to parts. (5) So it's likely that you will have future counterparts in all the offspring of our universe. (6) Since cosmic evolution always increases complexity, every offspring universe will be more complex than our universe. (7) But more complex wholes are made of more complex parts. (8) Therefore your present life in our universe will be surpassed by more complex future lives in our offspring universes. Since complexity is intrinsically valuable, your future lives will be more intrinsically valuable. They will be improved versions of your present life. These improvements are governed by karmic laws. By symmetry, your life was copied from a simpler life in the parent of our universe.

The Argument from Rebirth is strengthened by the *Argument from Probability and Complexity*. It goes like this: (1) Since the complexity of any whole depends more intensely on the complexities of its more complex parts, the probability that some past part is copied into some future universe increases with the complexity of that part. (2) Humans are extremely complex. (3) Therefore, it is extremely likely that we will be copied into all the cosmic offspring of our universe. This argument is further reinforced by the *Argument from Fragility*. It goes like this: (1) Since more complex things are more fragile, the probability that some past part is very accurately copied into some future universe increases with its complexity. If the structure of a rock is only approximately copied from one universe to the next, then the result is likely to be something with similar complexity (like another rock). However, if the structure of an organism (like a human) is not extremely closely copied from one universe to the next, then the result is likely to be a very dead and very simple thing. If the structure of your genes and your brain are not extremely closely copied, your complexity will be

entirely lost. Therefore, as the complexities of things increase, it becomes more likely that their structures will be accurately copied from each universe to its offspring. (2) Humans are extremely complex things. (3) Therefore, it is extremely likely that your current life will be very accurately copied into each offspring universe. This copying implies only that each of your future counterpart lives includes all the complexity of its past counterpart. It permits complexity to be increased from past to future counterparts. Intrinsic value can (and must) increase. Thus you will be reborn into new lives in new universes.

The Argument from Pareto Optimization confirms these ideas. It goes like this: (1) During cosmic evolution, every universe is surpassed by at least one successor. Likewise every progression of universes is surpassed by at least one limit. (2) Surpassing at both successors and limits is Pareto optimal. Since it is Pareto optimal, it satisfies the four Pareto constraints. (3) Thus every life in every universe is surpassed by better successor lives in better successor universes. And every progression of lives in any progression of universes is surpassed by better limit lives in better limit universes. (4) At the level of detail, these improvements are regulated by laws of justice, that is, the laws of progressive karma. The Figure on the right illustrates this Pareto optimal rebirth. It shows two lives, Deucalion and Pyrrha, as they are reborn from universe to universe. Their rebirths satisfy the four Pareto constraints. Here a frown indicates a bad life; a flat expression indicates a neutral life; a smile indicates a good life. So both Deucalion and Pyrrha make progress together.



2. The Emergence of Karmic Laws

As universes beget successors, and progressions beget limits, karmic laws emerge. These karmic laws emerge from the bottom up. They are ethical regularities that appear as universes transform into successors and progressions transform into limits. These karmic laws emerge as dragons reproduce along the upgrade branches in the world tree. These upgrades are selected by the Selector as it honors the Good. Since the laws of karma emerge from branches oriented towards the Good, the laws of karma cannot be morally negative. They cannot suffer from moral problems. But retributive karma is morally negative. Consequently, the karmic laws that emerge from the transitions in the world tree are morally positive. They are *progressive*. Progressive karma is endorsed by the Spiritists (Kardec, 1857: bk. 2). It is endorsed by many Wiccans (Farrar & Farrar, 1981: 116; Buckland, 1986: 26-7; Cunningham, 2004: 73; Cuhulain, 2011: 17).

As universes gain complexity, the karmic laws (that is, the laws of progressive karma) also gain complexity. To illustrate these laws, we can use the

Stoic great chain of being. The Stoic chain defines six ranks of universes. The zeroth Stoic rank contains just the initial universe. The initial universe is simple and therefore empty – it contains no objects at all. The first Stoic rank contains many generations of *mineral universes*. For these mineral universes, karmic laws just increase atomic and molecular complexity. These universes contain progressively more complex systems of more complex rocks. The rocks in these universes become prebiotic systems of molecules like RNA and DNA.

The second Stoic rank contains many generations of *botanical universes*. Evolution proceeds through the stages of mineral complexity but surpasses itself into simple biological complexity. Life first emerges in second rank universes as simple organisms like bacteria. Some of the rocks in the first rank universes are reborn into rocks in the second rank universes. But some of the rocks from the first rank universes are promoted into simple organisms in the second rank universes. Progressive karmic laws in these universes drive simple organisms to evolve into more complex organisms. Here digitalists endorse something very close to *Universal Darwinism*: evolution by natural selection is probably the only way for life to gain complexity (Dawkins, 2017: 119-50). Consequently, at every botanical universe, or almost every botanical universe, the laws of evolution by natural selection drive the increase of biological complexity.

The karmic laws associated with natural selection drive organisms to greater degrees of fitness in evolution. For every botanical universe, for every organism in that universe, for every way it can increase its fitness, there exists some successor organism whose fitness is increased in that way. Thus each organism has a *fitter future counterpart* in some future universe. Every organism rebirths into some fitter version of itself. It rebirths into some biologically more virtuous version of itself. Along every chain of successor organisms, biological *arete* grows. This *arete* is competitive excellence. Thus plants struggle against each other for sunlight and nutrients. They become enemies which do evil to each other. Evil emerges from conflicting goods. But as competitive excellence grows more intense, competitors learn to seek allies. From the war of all against all, sophisticated forms of cooperation emerge. Hence plants begin to share resources. They become friends which do good to each other and which fight common enemies together.

As universes surpass universes, their organisms both compete and cooperate more intensely. Plants (and fungi) develop economic strategies for cooperation. They reward each other for sharing resources; they punish each other for stinginess, for cheating, for breaking promises. Primitive *moral norms* emerge with primitive life. Karmic laws emerge from these moral norms. As these moral norms gain complexity, karmic laws gain complexity. But karma is progressive: it tunes successors for superior moral virtue. The future counterparts of each plant more accurately follow the norms of plant morality. They are morally better plants. They work together in superior ways and thus grow in both individual and communal complexity. Of course, this growth leads to botanical communities which conflict even more intensely. Thus karmic laws work together with natural selection to ensure greater complexity.

The third Stoic rank of universes contains many generations of *animal universes*. Here *animal* just means non-human animals. Evolution in third rank universes rises up through all the lower ranks. Some new rocks emerge in the third rank universes. But progressive karma entails the growth of complexity. Complexity grows by copying and promotion. Some rocks in the second rank are copied into rocks in the third rank while some are promoted into plants. Some second rank plants are copied into third rank plants while others are promoted into third rank animals. As animals gain complexity, their primitive nervous systems grow into sophisticated brains. They gain greater cognitive functionality. They gain increasingly complex strategies for competition and cooperation. They compete directly for resources. They evolve into predator and prey, host and

parasite. They also form cooperative societies: here are hives of social insects, flocks of crows, colonies of bats, packs of wolves, troops of chimpanzees.

More sophisticated moral norms emerge among these social animals. They develop social roles with associated social duties. Epictetus observed that social insects have roles in their societies. The queen bee has a role and the drone has a role (D 3.22.99). And their roles determine their duties. Thus social animals reward those who do their duties and they punish those who fail to do their duties. They develop increasingly complex systems of reciprocity. They reward those who pay back debts and keep promises. They punish those who cheat, who fail to pay back debts, or who break promises. More generally, animals have roles in their surrounding ecosystems. Epictetus observed that animals have ecological roles. Animals are finely tuned to play their roles by evolution. These roles entail duties. All animals strive to play their roles well in the earthly ecosystem; they strive to perform their proper functions; they strive to do their duties (D 4.1.24-28). For example, when a lion attacks a herd of cows, the duty of the calf is to run but that of bull is to fight (D 1.2.30-32; 3.1.22; 3.22.6; 4.8.42-43).

As animal universes grow, they gain organisms that form symbiotic relationships. Consider a universe which has evolved an earthlike ecosystem including figs and wasps but not much beyond that level of complexity. As on earth, the figs and wasps have become symbiotic: the wasps pollinate the figs; the figs in turn provide homes and nutrients for the offspring of the wasps. Norms of reciprocity emerge in symbiotic relationships: each symbiont has duties towards the other. The wasps have duties to pollinate the figs; the figs have duties to shelter and nourish the wasps. Of course, one side may fail to do its duty – it may cheat. Some wasp may cheat by implanting its eggs into a fig without also pollinating it. Figs have evolved to detect this cheating and to punish the wasps by dropping the unpollinated fig and killing the young wasps.

As duties emerge, karmic laws emerge. Karma works progressively. The cheating wasp is surpassed by some future counterpart in some future universe – it is reborn into some successor wasp. Karma rewires the brain of this reborn wasp so that it is more likely to do its duty. But karma tends to justice. The fig might not detect the cheating wasp. So karma tunes the reborn fig to detect cheaters more accurately. Karma makes it more likely that if the reborn wasp cheats, the reborn fig will punish it by killing its offspring. Of course, within animal universes, the laws of karma are still violent.

Many biological relations are competitive. The cheetah seeks to devour the antelope; the antelope to avoid the cheetah. Each seeks the death of the other. But each has been tuned to its role by evolution. This tuning grounds duties: it is the duty of the cheetah to hunt down and devour the antelope; it is the duty of the antelope to evade and starve the cheetah. Each strives to do its duty. No injustices are done in the war between cheetahs and antelopes. Nevertheless, if either party fails to do its competitive duty, then karma sharpens its successors for competition. Karma increases competitive fitness. If the cheetah fails to capture the antelope, then karma makes the reborn cheetah fitter. If the antelope fails to evade the cheetah, then karma makes the reborn antelope fitter. In every war between predator and prey, karma works equally on both sides. Karma (like evolution) is not utilitarian. It does not aim at the greatest happiness of the greatest number for the greatest time. Karmic laws emerge to facilitate *the ever greater intensification of life*. Plotinus says the next universe is *boiling* with life (E 6.7.12). Karma intensifies all ecological relationships.

3. Karmic Laws for Humans

As universes gain complexity, the fourth Stoic rank of universes appears. Universes in this fourth rank contain rocks, plants, animals, and humans – they

are *human universes*. Evolution in fourth rank universes rises up through all the lower ranks. Progressive karma entails promotion. Some new rocks emerge in the fourth rank universes. Some rocks in the third rank are reborn into rocks in the fourth rank while some are promoted into plants in the fourth rank. Some third rank plants are reborn into third rank plants while others are promoted into fourth rank animals. Some third rank animals are reborn into fourth rank animals while others are promoted into fourth rank humans.

As these human universes emerge, karmic regularities appropriate for humans also emerge. These karmic regularities emerge from the ways that human lives in earlier universes are transformed into better human lives in later universes. Progressive karma for humans entails moral character building ("soul-making") across lives (Stoeber, 1990). Something like this soul-making karma is endorsed by John Hick (1976). Following Hick, this soul-making karma is also endorsed by Steinhart (2008, 2014, 2017).

As human universes gain complexity, *seven karmic regularities* emerge. These are bottom-up tendencies rather than top-down impositions. As dragons reproduce along the upgrades in the world tree, these regularities emerge. The dragons do not impose karmic laws on their universes or the things in them. The dragons are just computers that follow programs that transform programs into programs. The karmic laws make things better. They make human lives better; they make human societies better. But moral improvement need not entail greater happiness. Dragons are not utilitarians. The fact that the next universe is better does not imply that your next life will be happier. For example, if your next life is morally better, then you are more likely to do your duty; but doing your duty can often lead to misery. Of course, since happiness is a good, it will eventually increase. But happiness is the most superficial good.

The *first karmic regularity* entails that your next life will be very similar to your present life. If karma were to immediately manifest great changes in any life, those changes would ripple out to create vast later changes. The result would be complexity-destroying chaos. Karma does not manifest disruptions; it does not tear the social fabric. It works by slight changes and slow degrees. It is evolutionary rather than revolutionary. Karma works incrementally and continuously over enormously long sequences of lives. It works through great feedback loops that operate over many incarnations.

The *second karmic regularity* entails that the conditions of your next life will be more conducive to virtue and less conducive to vice. On the one hand, during your whole life, but especially while your character is growing, you will be more likely to experience conditions conducive to building a virtuous character. You will be more likely to have genetics conducive to virtue, to benefit from good parenting, to benefit from good nutrition, to benefit from social stability, a loving family, adequate resources, a good education, and so on. On the other hand, during your whole life, but especially while your character is growing, you will be less likely to experience conditions conducive to building a vicious character. You will be less likely to suffer from genetic errors that lead to vice. You will be less likely to suffer from fetal alcohol poisoning; to suffer from malnutrition or lead poisoning; to suffer from child abuse, or war, or poverty.

The *third karmic regularity* entails that your next characters will be morally better than your present character. You will be a superior moral agent. You will be a better moral problem-solver. Your character will be *ethically enhanced* (see Douglas, 2008; Faust, 2008). Your character will contain superior moral habits and dispositions. On the one hand, you will be more virtuous. You will be more likely to do your duty in every situation; you bill be more likely to do acts that are morally obligatory. On the other hand, you will be less vicious. You will be less likely to fail to do your duty in every situation; you will be less likely to do acts that are morally forbidden.

The *fourth karmic regularity* entails that your series of actions will be morally superior to your present series of actions. On the one hand, you will be more likely to express morally positive actions. Your actions will be more likely to increase intrinsic value. When they do increase it, they will be more constructive. And your actions will have greater degrees of moral positivity. On the other hand, you will be less likely to express morally negative actions. Your actions will be less likely to decrease intrinsic value. When they do decrease it, they will be less destructive. If in this life you murder somebody, then in your next lives the corresponding act will seriously injure but not kill them. In future lives, the seriousness of the injury will decrease to zero. The conflict which motivated your act will change to become more abstract. Fights which involve physical destructiveness will become fights involving only symbols.

The *fifth karmic regularity* entails that your next lives will be more *psychologically providential*. From life to life, karmic laws rewire your brain so that your acts are more likely to be followed by morally appropriate mental deserts. When you act, you will be more likely to feel what you ought to feel. On the one hand, doing good will be more emotionally satisfying. If you do good, you are more likely to feel well because you did good. Doing evil will also be more emotionally unsatisfying. If you do evil, you are more likely to feel ill because you did evil. You are more likely to suffer emotional distress, including misery, guilt, shame, remorse, regret, and anguish.

The *sixth karmic regularity* entails that your future lives will be more *sympathetically providential.* When your acts cause moral responses in others, you will be share more intensely in those responses. You will be more sensitive to their moral responses. On the one hand, when you do some good deed, you will more intensely feel the positive moral responses of others. If your good deed makes them well, joyous, happy, proud, or admiring, then you will experience their emotions more as your own. On the other hand, when you do some evil deed, you will more intensely feel the negative moral reactions of others. If your evil deed causes suffering and loss in others, you will feel their pains as if they were your own. You will experience their moral revulsion against you as moral revulsion against yourself: you will feel the disgust, fear, anger, hatred that they direct at you as negativities emotions that you direct against yourself.

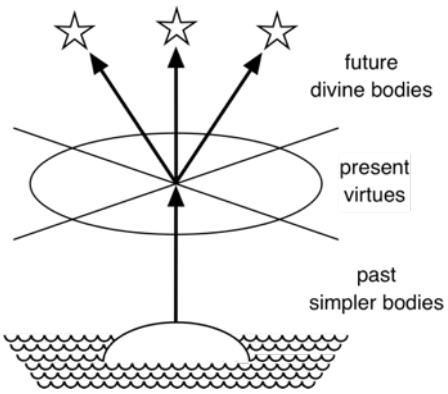
The *seventh karmic regularity* entails that future societies will be more *socially providential*. Future lives will therefore contain more justice. A more just version of a life is one in which earlier deeds are more likely to be followed by their deserts. Social providence provides moral discipline. On the one hand, if you do a good deed in some future life, you will be more likely to be more rapidly and appropriately rewarded in that same life. Good moral dispositions will be more likely to turn into good moral habits; good moral habits will be cultivated and sustained. On the other hand, if you do a bad deed in some future life, you will be more likely to be more rapidly and appropriately punished in that same life. Bad moral dispositions will be extinguished before becoming habitual; bad moral habits will be extinguished and prevented.

4. Rituals for Accelerating Your Ascent

The providential aspects of karma provide present motivation. Karmic regularities entail future rewards for present good acts. These promised rewards act as enticements to do good in your present life. They provide you with reasons to be good now: you ought to be good now because, if you are, then you will be more likely to experience benefits in your next life. Karmic regularities entail future punishments for present evil acts. These promised punishments act as deterrents to doing evil in your present life. They provide you with reasons to

not do evil now: you ought to avoid evil now because, if you don't, you are likely to experience discipline in your next life.

Progressive karma entails that you are involved in a process of self-deification, self-divinization. The speed of this process depends on the moral qualities of your life. On the one hand, if you live badly, it will take you longer to reach your divine selves; more iterations of the cosmic cycle will be needed for you to overcome your impairments. You will suffer more in your human lives. On the other hand, if you live well, it will take less time to reach your divine selves; it will take fewer iterations of the cosmic cycles to purify your materialities and to become transhuman and superhuman. Your present actions link your past selves to your future divine selves. Fire-energy flows most readily through good actions and virtuous characters. So you should strive to be virtuous. The virtues are represented on the *axis mundi* by the Stoic moral compass. The four cardinal points of this compass show the four cardinal virtues. The Figure on the right shows the *axis mundi* rising from the past, through the present, into the future.



Many pagan rituals orient your body towards its better future lives. They aim to make you more virtuous. By performing these virtue-enhancing rituals, you increase the speed at which your future lives rise to the divine. You more rapidly transform your human body into a deity. Some virtue-enhancing rituals involve semiotic acts which name your divine bodies or their universes. The naming may be done verbally, or by visualization, or by constructing physical models. These are *rebirth rituals*. Rebirth rituals include: some rituals done on the solar holidays on the wheel of the year; rituals which simulate personal or cosmic rebirth; shape-shifting rituals. When you perform these rebirth rituals, you create an arrow of naming from your present body to those future bodies in their universes. You raise fire-energy within your body, and you send it towards your better future bodies. But better future universes are created by dragons who follow upsloping arrows. Hence the semiotic structure of nature is such that, by performing rebirth rituals, you make it more likely that you will rise more rapidly towards your own divine futures. You thereby increase the speed at which you rise. Rebirth rituals are effective. They work through semiotic conditioning. Since semiotic conditioning is magical, these rebirth rituals are magical. By performing these rebirth rituals, digitalists practice the *he telestike techne*, the craft of self-surpassing. For digitalists, this craft is spiritual. Hence magical rituals done for the sake of accelerated rebirth are spiritual exercises.

Your ascent towards the Good eventually projects you beyond your humanity. As universes gain complexity, the fifth Stoic rank of universes appears. Universes in this fifth rank exceed the human universes by adding deities – they are *divine universes*. Evolution in fifth rank universes rises up through all the lower ranks. Progressive karma entails promotion. Some new rocks emerge in the fifth rank universes. Some rocks in the fourth rank are reborn into rocks in the fifth rank while some are promoted into plants. Some fourth rank plants are reborn into fourth rank plants, while others are promoted into fifth rank animals. Some fourth rank animals are reborn into fifth rank animals while others are promoted into fifth rank humans. Some fifth rank humans are reborn into fifth rank humans while others are promoted into fifth rank deities. Eventually, all humans on lower ranks will be promoted into deities on higher ranks.

5. The Incantation for Your Lives

Your initial life is your present earthly life. It is your entire life from your conception to your death. It is a 4D space-time whole. Since the successor law

for things entails that every thing will surpass itself in every way, it entails that your initial life will surpass itself in every way. Every superior version of your life will exist in some superior context. These superior versions of your life are your future better counterparts. They are your *better future lives*. They will be lived in better families, better societies, better ecosystems, better physical contexts, better universes. Your initial life is *reborn* into its successor lives. These are your first-generation lives. Now the successor law iterates: your better future lives are surpassed by better better future lives. So your first-generation lives are surpassed by your second-generation lives. Then by your third-generation lives. Your generations rise to infinity. Since the successor relation branches at every iteration, your future lives form your *tree of lives*.

As your lives are surpassed by their successors, they form infinitely long progressions of lives. Your tree of lives contains infinitely many progressions of lives. The limit law for things entails that every progression of your lives is surpassed by limit lives. So your tree of lives runs through all limits into the higher infinities. Every progression of lives in your tree is *reborn* into each of its limit lives. So your present life is the root of an infinitely ramified tree of better future lives. Your tree of lives is an unsurpassable tree of surpassable lives. It is a proper class of lives. So your tree of lives is transcendental. Since it is unsurpassable, your tree of lives is immaterial. It is your star.

This rebirth theory partly resembles the resurrection theory of John Hick. Hick developed a resurrection theory involving many lives in many universes (1976: chs. 15, 20). Following Hick, Steinhart developed the more naturalistic *revision theory of resurrection* (2008). Steinhart then developed the *revision theory of rebirth* (2014: chs. 7-9). Digitalism entails the revision theory of rebirth. Digitalism entails that a thing is *saved* if and only if it is surpassed by every possible superior version of itself. Hence you are saved in your tree of lives. But digitalists do not seek to escape from the wheel of rebirth; on the contrary, we seek to ride it higher. By celebrating the wheel of the year, we celebrate the turning of the wheel of rebirth. More precisely, your tree of lives is defined by your *incantation for lives* – it has the usual four laws:

The Initial Law for Your Lives. Your present earthly life is your initial life. It is the root of your tree of lives. It inhabits your initial society, ecosystem, planet, and universe. It is surpassable; hence it is material; it is impaired. But fire-energy acts in your life to drive it to create superior lives in superior contexts.

The Successor Law for Your Lives. Fire-energy works in every life in your tree to beget its successor lives. Since the gynomic and andromic powers work in every concrete incantation, they work in each life in your tree. And they are successful: each life in your tree is surpassed by at least one successor. Every successor of each life is a minimally better version of that life. Each thing *is reborn into* each of its successors. The successors of each life inhabit the successors of its contexts. So your successor lives inhabit progressively better societies, ecosystems, physical contexts, and universes. The successor relation on your lives defines a tree of future counterparts which spans universes. Your successor lives will rise up through all finite degrees of excellence. Some of these finite degrees are transhuman; some are godlike superhumans; and some are divine. You will eventually be reborn into a deity, into a god or goddess. You will rise towards infinite personal excellence. Your lineage of lives rise upwards towards the sun, that is, towards the Good.

The gynomic power working in the ontological depth of your life is the Gynetor, while the andromic power working there is the Andretor. These two holy powers are sexed: by making love in the depth of your life, they beget your next lives. Your next lives are born out of their love-making; all your lives are born from holy love. You can emotionally participate in their love: you can give thanks to them for your past lives; you can rejoice in their work in your present

life; you can trust in their benevolence for creating your better future lives. To express these emotions, you can sing hymns, have sex, or perform rituals. But it makes no sense to pray to them, to worship them, or to sacrifice to them. They are not persons. You cannot change them. By emotionally sharing in the holy work of the Gynetor and the Andretor, you cultivate virtues in your self. This is spiritual work: it is ethical self-improvement.

By trusting that they will make your future lives better, you can gain hope, and you can feel encouraged in this life. And when you work to make your present life better, you participate in the love-making of the Gynetor and the Andretor. You share in their holy work, and you share in their holy love and holy joy. As you work to make your present life better, so you also work to make your future lives better.

The Limit Law for Your Lives. Fire-energy works in every progression of lives in your tree to beget its limit lives. Both the gynomic and andromic powers work in every progression. And these holy powers succeed: every progression of lives in your tree is surpassed by at least one limit life. Every limit is minimally better than its progression. Every life in every progression *is reborn into* its limits. All your limit lives are infinitely complex and infinitely valuable. Your limit lives inhabit limit societies, limit ecosystems, limit physical contexts, and limit universes. The limit relation defines a tree of counterparts which spans universes. There exists a limit branch from each life in any progression to each limit of the progression. Your limit lives will be infinitely great persons. They will be divine persons. But they are surpassed by their greater successor lives and then by their greater limit lives. Your future lives rise up through all degrees of divinity. Each chain of lives ascends towards the Good.

As with successor lives, the holy powers at work in the production of your limit lives are the Gynetor and the Andretor. You can invoke these in rituals. Since your limit lives are always in the future, you invoke them through rituals which signify trust and faith. Through these rituals, you cultivate the virtues of faith and hope in yourself.

The Final Law for Your Lives. The final law says your tree of lives includes all the lives defined by the previous three laws. Your tree of lives is an unsurpassable class of surpassable lives. It is a proper class. From your present life, your tree of lives contains infinitely many lineages. Each lineage is a sequence of future lives. Along any lineage, complexity and intrinsic value accumulate. Every lineage rises up through degrees of perfection that are human, transhuman, superhuman, and divine. It rises along all the degrees of perfection indexed by numbers in the *axis mundi*. Every lineage is an unsurpassable series of surpassable lives. Although each life in any lineage is impaired (it is surpassable), each lineage itself is not impaired (it is unsurpassable). Since it has no impairment, it has no materiality. As an unsurpassable series, every lineage is a star of lives. Each star of lives is an ideal life. All your ideal lives are ecstatic bodies, transcendental bodies. An idea life is an avatar of the Good as a life. Of course, this means that it is more intensely alive than life.

37. The Divine Animals

1. The Deities are Superhuman Animals

The Deities are Animals. For Western philosophy, the Olympians (and titans) are the paradigmatic pagan deities. Homer and Hesiod portray them as entirely physical *animals* (McKechnie, 1992; Osborne, 2010; Hedreen, 2021). The Epicureans portrayed them as human-like animals living blissful and immortal lives in space (Cicero, ONG 1.46-69). The Epicurean deities are made of superior physical atoms. The Olympians in Plato's *Timaeus* (40e-41a) have physical bodies.

The Olympian bodies are extremely similar to human bodies. Their bodies typically have the same types of organs as humans, and their divine organs are arranged in the same ways as our human organs. They are *anthropomorphic*. Since Olympians can breed with humans to make fertile offspring, the Olympians are *human-like animals*, that is, they are *hominins*. They belong to the species *homo Olympians*. Of course, some deities, like Poseidon, also combine human organs with the organs of other animals. On this point, the deities add other animal powers to human bodies.

The deities in many other pagan pantheons resemble the Olympians in their animalities. The deities in the Egyptian, Norse, Celtic, Aztec, Mayan, and other pantheons are also animals. Generalizing, we say that *all deities are animals*. They are physical organisms in physical universes (with spaces, times, causalities, and laws). Of course, their universes may have different physical laws than our universe. Nevertheless, every deity is a natural thing in exactly one universe. As such, it is bound to the laws of its universe, which it cannot violate. No deities work miracles.

The Deities are Non-Theistic. Since our deities are superhuman animals, which are entirely physical things, they contrast with *theistic deities*. A theistic deity is a bodiless person. Bodiless persons are self-contradictory. Hence theistic deities are logically impossible: they do not inhabit any possible universes. Since rational paganism requires logical consistency, it opposes theism. Digitalists say all deities are entirely natural physical animals living in natural physical universes. *All deities are non-theistic*.[50] If *polytheism* means that there are many theistic deities, then we are not polytheists. Since our deities are non-theistic, digitalists are atheists who affirm many deities. Atheism contradicts theism; it does not contradict the existence of deities. All deities are strictly identical with their bodies. They may be bodies based on organic carbon-chemistry, or based on electrified silicon, or bodies of pure physical energy or pure information, but they are still bodies. More generally, their bodies are living machines.

The Deities are Superhuman Animals. The organs in the Olympian bodies include but extend the positive powers of human organs. Those bodies can perform at least all the functions of human bodies and can typically perform additional functions which humans cannot perform. Say the *superhuman* includes but positively extends the human. Hence the divine organs and bodies

[50]There were late pagan monotheists who worshipped the bodiless deity Theos Hypsistos. However, this pagan theism was an adaptation to advancing Christianity.

have superhuman degrees of functional excellence. For any action a human body can perform, the deities can perform that action better than any possible *human*. More generally, for any excellence of any possible human body, the Olympians have that excellence to a degree that is greater than the greatest possible human degree. Their bodies have superhuman strength, speed, and intelligence. They have superhuman resistance and immunity to injury, illness, and aging. They have superhuman powers of recovery and healing. They have superhuman longevity and beauty. Hence the Olympians are *superhuman animals*. They include but positively extend human animality. Since the deities in many other pagan pantheons are also superhuman, digitalists say *all pagan deities are superhuman animals,* they are divine bodies. All divine bodies are far more functionally complex than any human bodies. Divine bodies have specialized organs, and their organs have superhuman degrees of functional excellence. They have superhuman degrees of *arete*. They occupy superhuman ranks on the great chain of beings. Since functional complexity is intrinsic value, divine bodies have greater intrinsic value than human bodies. Since deities are animals, they are living organisms; hence they have souls.

The Deities are More Virtuous than Humans. The poets Homer and Hesiod portrayed the Olympians as doing many immoral deeds. But Plato criticized the poets for depicting the deities as immoral (*Republic*, 376e-83c, 605b-607c; *Laws*, 905e-907b). He says the deities must obey the standards of goodness (*Euthyphro*, 10d). He says the deities "are good with perfect goodness" (*Laws*, 900d). Likewise Euripides said "if the gods do anything evil, they are not gods" (frag. 292.7). So any old stories about the deities doing immoral deeds are inaccurate. Although the deities may have conflicts, they regulate themselves according to the Good. Digitalists affirm that deities are more virtuous than humans. More generally, they have superior degrees of moral excellence.

2. The Deities are Ideals for Humans

Divine Surpassing is Ethically Ideal. The deities are superhumans; that is, they are animals which surpass humans in all possible positive ways. They are superior versions of ourselves. Since this surpassing amplifies human excellence and ethical positivity, it cannot transform humans into divine animals which have unethical relations with humans. If some superhuman animal is a deity, then its social and political relations with humans are even more positive than our social and political relations among ourselves. Science fiction stories are filled with alien animals that are stronger and smarter than humans, but that treat humans in evil ways. Those evil aliens are not deities. Likewise many religions posit superhuman animals that treat humans in less than ideal ways. It is not ethically ideal for deities to treat humans as livestock, pets, slaves, subjects, or perpetual children. Superhuman animals, by means of their greater powers, could stand to us as owners, masters, rulers, or parents. They could demand prayers, worship, sacrifices. But these relations (pets to owners, slaves to masters, subjects to rulers, children to parents, etc.) are not ideal. So, if any superhuman animals stand to humans in these less than ideal ways, then they are not deities.

The Deities are Aspirational Ideals. Platonists have traditionally endorsed the doctrine that divine surpassing is ethically ideal. For Plato, the deities are ideals to which we should aspire (*Phaedrus*, 252c-253c; *Ion*, 533d). He says we ought to become "like god so far as we can, and to become like god is to become just and pious with wisdom" (*Theaetetus*, 176a5-b2; Armstrong, 2004). Here Plato uses the term "god" to refer to his divine mind (*Timaeus*, 29e-41d; *Philebus,* 28d). But if we become like any of the morally superior and otherwise more excellent Olympian deities, we will be getting closer to this Platonic divine mind.

The Platonic *Myth of the Cave* (*Republic*, 514a-520a) portrays the ascent of a person up the Divided Line. This ascent can be interpreted as rising from a merely human level of existence through many superhuman levels of existence. It is an ascent towards the divine. Plotinus says our goal is to live "the life of the gods: for it is to them . . . that we are to be made like" (E 1.2.7.25-32). Beckett says that we ought to try to become gods (2017: 144-6).

The Deities are Superior Versions of Humans. Platonists as such are interested in and only in those deities which we humans can become. Of course, as philosophers, we are interested in all sorts of deities; but as Platonists, we are only interested in those deities which we humans can become. You become a deity if and only if there exists some deity D and there exists some continuous series of transformations S such that you are transformed by S into D. If a continuous series of transformations is a *metamorphosis*, then you can become some deity if and only if there is some possible metamorphosis that changes you into that deity. More generally, Platonists as such are interested in and only in those deities which are derivable from humans. A deity is *derivable from* some human iff there is some possible metamorphosis that changes that human into that deity. A deity is *derivative* if and only if it is derivable from some human. So we are interested in and only in derivative deities. These derivative deities are *possible for us;* they exist in our possible futures.

The Deities are Goals for Human Striving. Since the deities are super-*humans*, and since we will be transformed into them, they are greater versions *of ourselves*. Since they are greater versions of ourselves, we *can* strive to become like them. Even if they exist in future universes, we can treat them as aspirational ideals. Moreover, since you are an agent, the first axiom of our deontic logic asserts that you *ought* to maximize value as far as you can. You therefore have a duty to surpass yourself, to overcome your human materiality (that is, the negativity in your humanity). You are surpassed by the deities. So you have a duty to become as godlike as possible. But striving towards an ideal requires freedom with respect to it. If you have freedom with respect to some ideal, then you do not submit to it. But worship entails submission. Therefore, it is ethically wrong to worship any deities. As Beckett says: "We have sovereignty before the gods, even if we are not their equals. Render honor and respect, not submission" (2017: 84). Digitalists do not worship any deities.

The Argument from Human Surpassability. This argument justifies the existence of these derivative deities: (1) The principles of cosmic evolution (which define the world tree) entail that at least one universe exists which contains human-like animals (including humans). Our universe contains human-like animals, but such animals may exist in other universes too. (2) But all possible human-like animals are surpassable by bodies with superior excellences. (3) If any physical thing is surpassable, then the principles that define the world tree entail that there will be future things that surpass it. Specifically, the incantation for things entails that all possible superior versions of that original thing will exist in later universes in the world tree. Every possible human body (and human life) will be continuously transformed into greater things either locally (in the same universe) or supercosmically (across universes). (4) Therefore, the human-like animals in any universe will metamorphosize into deities either in their local or supercosmic futures (which extend through their future counterparts into future universes). Thus deities exist. Not only do the deities exist, but we will be transformed into them, in all possible ways.

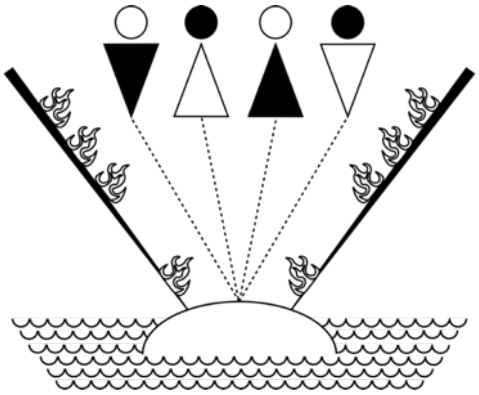
3. Maximal Divine Diversity

The Deities Transcend Human Ethnic and Racial Divisions. Consider human or human-like animals in any universe. Whether they live in our universe or elsewhere, they will all metamorphosized into superhuman animals. As they do, they will surpass all the negativities and imperfections of humans. These negativities include all those biological features which motivate social injustice. Since the ethnic and racial features of humans motivate social injustice, the deities will surpass all those features. As superhumans, the deities entirely lack all human racial or ethnic features. Moreover, the deities are shape-shifters, who manifest multiple appearances. Picture Odin covered with tiger fur, Isis with feathers, or Zeus with chameleon scales.

Since every deity surpasses the entire human species, every deity evolves from the entire human species. No deity belongs to any human ethnic or racial group. Although old pantheons are often portrayed as belonging to some ethnic group, those portraits contradict the superhumanity of the deities, and are therefore false. There are no exclusively Germanic, Slavic, or African deities. Since Thor is not a human, Thor is not a European or Caucasian. To avoid degrading superhumans into humans, pagans should portray their deities in all possible ethnic forms. Thor should be portrayed as European, Asian, African, Native American, and so on. If any group requires some ethnic or racial ancestry to engage its deities, or to participate in its rituals, then they are not a pagan religious group; they are a fascist political group. Digitalism absolutely rejects all forms of tribalism, folkism, ethno-centrism, racism, and fascism.

The Deities Transcend Human Sexual and Gender Divisions. Analogous remarks apply to sex and gender. Since those features of humans motivate social injustice, the deities will surpass all those features. The deities just do not have any human sexual or gender features. The deities have new sexes which combine and surpass the old human sexes; new genders which combine and surpass the old human genders. Although humans tend to conceive of deities as male gods or female goddesses, those conceptions are inaccurate. The deities surpass both male and female, and therefore surpass both heterosexuality and homosexuality. They are polysexual, pansexual, supersexual. Again, the deities are shape-shifters, who manifest multiple sexes and genders. Loki switched between male and female forms. To avoid degrading deities into humans, pagans should portray their deities in all possible sexual forms. We should portray Zeus as female and Athena as male. We should portray Odin as both homosexual and heterosexual. Digitalism absolutely rejects sexism, homophobia, transphobia, and all other forms of gender injustice.

Divine Multiplicity and Diversity. Pagans affirm divine multiplicity (E 2.9.9.35-40). There are many deities of all possible kinds. The deities are infinitely diverse, and they integrate their diversities into societies with superhuman degrees of justice and harmony. The Figure on the right symbolizes divine diversity. While monotheists posit exactly one maximally perfect person, pagans posit absolutely infinitely many maximally perfect versions of all possible forms of life. There are many points of maximal perfection. Our paganism resembles the *value-pluralism* that appears in the work of Nietzsche and the American pragmatists like William James (Funkenstein, 1994; Flaherty, 2007; Dreyfus & Kelly, 2011; Larvor, 2020; Rodgers, 2020).



Divine Non-Human Animals. All earthly species can and will evolve into divine forms. There will be divine horses (like the Norse Sleipnir). The Greek myths (such as the labors of Hercules) portray many superanimals of many species, such as superlions, superdeer, superhorses, and superboars. Plotinus posits deities in his higher universe (E 1.8.7, 2.9.8, 2.9.16, 3.5.6, 3.5.8, 4.3.14, 5.1.7, 5.8.3, 5.8.9). All the living things in our universe have superior counterparts in the higher universe (E 6.7.12). Hence it contains divine fish, birds, and horses, and divine versions of all other animals (E 6.7.9, 6.7.12). The higher universe is a superior physical system (E 6.7.8-12; see 5.8.4, 5.8.9, 6.7.15). The deities there have superior bodies, with superior organs like horns, eyes, and fingers (E 6.7.10). Ancient myths depict humans metamorphosing into chimeras: Glaucus changed into a merman. The deities derived from humans include chimeric forms combining human and non-human features.

4. Referring to Deities

Theonyms. A theonym is some sign that is intended to refer to or to represent some deity. Theonyms include proper names (like "Thor"); descriptions (like "the Olympian god of prophecy"); paintings and movie clips (a painting of Athena, a movie with Thor and Odin); statues (a statue of Zeus); they programs for video game characters; and so on. Since we say deities exist in future possible universes, theonyms literally refer to divine animals in those universes. They literally refer to non-actual possible bodies. Since the deities are non-actual, their theonyms are not causally linked to them. Theonyms refer to deities via clusters of things which are sacred to the deity. Things sacred to Apollo include: the sun, ravens, swans, wolves, laurel trees, cypress trees, lyres, wreaths, bows and arrows, and so on. These are the symbolons of Apollo.

Theonyms Referring through Counterparts. The symbolons of deities are not particulars; they are universals, essences, or forms; that is, they are eidolons. To say generically that "the wolf" is sacred to Apollo means that the eidolon *wolfness* is sacred to Apollo. This eidolon is strongly located or instantiated in many space-time regions; that is, in many wolves. The relation *is-sacred-to* binds a mundane eidolon to some divine eidolon: the wolf eidolon is sacramentally bound to the Apollo eidolon. The Apollo eidolon is the *soul* of Apollo. Here souls are eidolons (causally powerful forms); not immaterial

minds. If some eidolon is sacred to some deity, then the soul of that deity is figuratively located or instantiated wherever that eidolon is strongly located or instantiated. Thus the soul of Apollo is figuratively instantiated in every wolf; the Apollo-soul is figuratively present in that wolf. The wolf is a living statue figuratively animated by the soul of Apollo. An *avatar* of a deity is a living statue animated by the soul of that deity. Hence the wolf is an avatar of Apollo. Deities exist in non-actual universes. But if some eidolon is sacred to some deity, then every strong instance of that eidolon is an actual *counterpart* of that deity. Apollo acts vicariously through his counterparts. And we can vicariously interact with Apollo through his counterparts. We refer to non-actual deities using their actual counterparts as avatars for them. Wisdom is sacred to Athena. Hence she is vicariously present where wisdom stands out; her counterparts are the wisest things in some class. If crows are wise birds, then they are avian Athenas. Athena speaks from within every crow. Pointing to a crow, you can say "There's Athena". Humans are the Athenas among primates. The world is full of gods. As you make yourself wiser, you *Athenize* yourself.

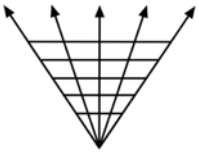
Ascending Sacred Chains of Eidolons. Although "Athena" literally refers to a single superhuman animal in some other universe, that theonym figuratively refers to the things sacred to Athena (that is, to her symbolons). Since wisdom is a symbolon of Athena, "Athena" figuratively refers to *wisdom-itself*. But wisdom-itself is not a single property more or less well-instantiated by some body. Wisdom-itself is an endless series of ever greater degrees of wisdom. It is an ascending progression of ever greater wisdom-eidolons. Plants, bugs, snakes, dogs, and chimpanzees have their degrees of wisdom. Wise birds (like crows and parrots) are Athenic. There are human, transhuman, and superhuman degrees of wisdom. Yet every degree of wisdom is surpassed by absolutely infinitely many greater degrees. There are as many degrees of wisdom as numbers in the *axis mundi*. Used to refer to wisdom-itself, "Athena" refers to an unsurpassable series of surpassably wise bodies. But wisdom-itself is that unsurpassable quality which includes but transcends the entire series of bodies. To use a phrase from process theology, *wisdom-itself is a self-surpassing surpasser of all*. Thus wisdom-itself is possessed only by transcendental bodies, which have the complexities of the proper classes. Thus when the theonym "Athena" is used in a fully transcendental sense, it refers to some transcendental body (a star). Analogous remarks apply to the virtues sacred to other deities. Since every transcendental body has every unsurpassable virtue, all deities coincide at every star. Every star includes every deity and its chain of eidolons.

Epiphanies. Any thing in which some deity is vicariously present (any avatar of the deity) is an epiphany of that deity. Since wolves are sacred to Apollo, he vicariously acts through wolves. He vicariously speaks through wolves. When some wolf howls, Apollo vicariously speaks through that howling. Since the wolf is not literally Apollo, its howl is not literally the voice of Apollo. Apollo speaks in a figurative way through his avatars. Taking an idea from Masahiro (2021), to speak through an avatar is to speak with a soundless voice saying "I am here". In the howling of every wolf, Apollo speaks with a soundless voice saying "I am here". Since courage is sacred to Thor, every courageous act is an avatar of Thor. And any human performing a courageous act is an avatar of Thor during that act. Thor speaks in that act, and in that human, with a soundless voice saying "I am here". We can tune our ears to hear these divine voices.

38. Ranks of Divine Bodies

1. Sagacious Bodies

Iamblichus said there are six ranks of ever greater divine bodies (deities). Digitalists modernize his ranks. And we naturalize these divine bodies: they are purely physical machines (including organisms). Of course, there are many different kinds of physicality. Other universes have richer and more subtle forms of physicality. Their physical laws permit the evolution of much greater complexity and intrinsic value. They contain organisms of superhuman beauty, power, intelligence, and virtue. Their laws permit greater semiotic conditioning (thus magic works better at higher universes). But all possible universes are computationally generated. So all divine bodies can be simulated by some computing machine. Since the ranks of computers run far out into the infinite, divine bodies evolve into transfinite bodies. All ranks of divine bodies are discussed in detail in Steinhart (2014: chs. 8 & 9).



(1) *The Sagacious Bodies*. For Iamblichus, the first rank of divinity is the pure souls. Since the purity of these souls seems to correspond to the ideality of the Stoic sages, digitalists say these are *sagacious bodies*. They occupy the first rank of greater than human bodies. The sages are *human-extremal bodies* (Steinhart 2014: secs. 107-9). A human-extremal body can perform any *human* body-function as well as the *best possible human.* It can see as well as the best possible human. It can run as fast as the fastest possible human. It can solve-problems as well as the smartest human. It can ward off infection and it can heal as well and as quickly as the best human. They suffer none of the *accidental impairments* of humans. Every sage is a maximally perfect or excellent human animal. It is some human than which none greater is possible. Hence the sages are *transhuman*. However, sages still suffer from the *essential impairments* (the constraints) of humanity. They are not yet *superhuman*. Since they are similar to actual humans, they can exist in our universe, or in universes with the same laws. They can be created by biological or technological evolution.

The sagacious bodies have their elite powers from conception to senility. But they do age, and their powers decline. They suffer from infection and illness; their bodies degrade. They are mortal. Since these bodies are only finitely complex, they can be simulated by finite computers. The soul of any sagacious body is that number which, when run on some finite computer, simulates that body. Since sagacious bodies are only finitely complex, they are not the greatest bodies. They are surpassable bodies. Since they are surpassable, they are material. But materiality is surpassability regarded negatively; materiality is functional impairment. Sagacious bodies are impaired when compared with the next higher rank of divine bodies, the heroic bodies. The transition to heroic bodies occurs by adding the body-functions of other earthly species.

2. Heroic Bodies

(2) *The Heroic Bodies.* Heroic bodies are at the second rank of divinity. They correspond in rank to Iamblichan heroes. They include but surpass the powers of the sagacious bodies. Since, they do not suffer from the *essential constraints* of humanity, they are the first *superhuman* bodies. The heroes are *earthly-extremal bodies* (Steinhart 2014: secs. 110-12). Such bodies can perform any earthly biological function as well as the best organism of any earthly species. For any possible earthly biological function, and for any possible earthly organism, any heroic body can perform that function as well as that organism. On the one hand, a heroic body can perform any *human body-function* as well as the best organism of any earthly species. So it can run as fast as the fastest animal of

any earthly kind. On the other hand, it can also perform any *non-human biological function* as well as the best organism of any earthly species. Since birds can fly, it can fly as well as the best birds. It can fly as far and as fast, and with the greatest agility. It can swim as well as the best earthly swimmers of any species. It can survive falls as well as cats. It can perform all the perceptual functions of all animals. It can echolocate like bats. And it can perform photosynthesis like plants or gain physical energy from sulfur like certain bacteria. Every heroic body combines the best features of all possible earthly organisms into a single body. A hero is a maximally perfect earthly organism. Every heroic body is an earthly organism than which none greater is possible.

The heroes have earthly-extremal powers of immunity, healing, self-regeneration, and longevity. While they can get sick, they always recover. Like the Olympians, they can be injured. But the Olympians had a divine doctor whose healing arts were always successful (e.g. *Iliad*, 5.899, 5.363). The heroes carry this divine healing art in their own flesh. They can heal all their injuries. They can regrow their organs like amphibians regrow their limbs. The heroes regenerate by replacing old parts with new parts. Like hydras, or certain jellyfish, their cells perpetually regenerate. They have perpetual youth. They are as hard to kill as carbon-based life itself. Like many Olympians, they can shape-shift into every possible biological form. They are protean. But life can die out. So while the heroic bodies have durability, they are not indestructible.

No heroes have ever existed on earth. It does not seem likely that they bill biologically or technologically evolve in the future. However, heroes are biologically possible. They live in superior universes which permit more powerful biology. The laws of these better universes differ from our actual laws. They are more finely tuned for the evolution of earthly-extremal bodies. Since maximizing earthly biological functionality does not require infinity, heroic bodies are only finitely complex. The soul of any heroic body is that number which, when run on some finite computer, simulates that heroic body. As finitely complex bodies, heroic bodies are surpassable. Since they are surpassable, they are material. They are impaired with respect to the next higher rank of divinity. The next higher rank includes the tellurian bodies. Bodies rise from the heroic to the tellurian by adding body-functions of non-earthly carbon-based species.

3. Tellurian Bodies

(3) *The Tellurian Bodies*. The tellurian bodies are at the third rank of divinity. They correspond in rank to Iamblichan *daimones*. They exceed earthly-extremality. It's possible that there are carbon-based organisms on other planets besides earth. These may perform functions that are not possible on earth. Thus tellurian bodies are *carbon-extremal*. For any possible carbon-based biological function, and for any possible carbon-based organism, any tellurian body can perform that function as well as that organism.

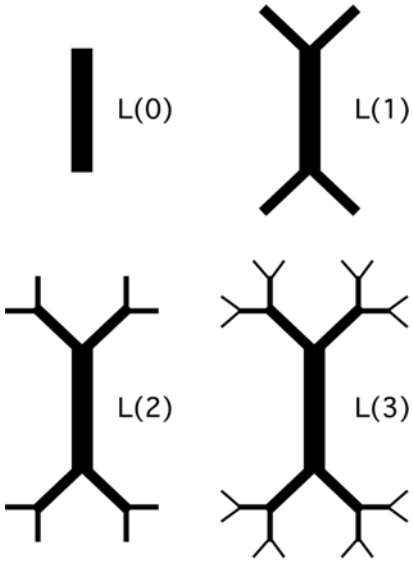
All tellurian bodies are extremely more complex than any possible earthly bodies. Perhaps a tellurian body packs the entire intelligence of a human brain into the computational machinery in each tellurian cell in its body. Nevertheless, all tellurian bodies are only finitely complex. They are finitely complex living machines. The soul of any tellurian body is that number which, when run on some finite computer, simulates that tellurian body. As finitely complex bodies, tellurian bodies are surpassable. Since they are surpassable, they are material. They are impaired with respect to the next higher rank of divinity. The next higher rank includes the Olympian bodies. It's possible that there is non-carbon based life. So bodies can be superior to carbon-extremal bodies. Bodies rise from tellurian to Olympian by adding body-functions of non-carbon species.

4. Olympian Bodies

(4) *The Olympian Bodies*. The Olympian bodies are at the fourth rank of divinity. For Plotinus, these Olympian bodies walk through the cities of the Olympian earth in Olympian universes (E 2.9.8.30-35, 5.1.4.4-5, 5.3.17.30-32, 5.8.1.38-41, 5.8.2.12-15, 6.5.12.30-35). For Iamblichus, they are the first deities. For us, the Olympians exceed carbon-extremality. They are realized in the superior physics of superior universes. Their bodies are *subplanetary extremal*. For any possible function, and for any possible subplanetary machine, any Olympian body can perform that function as well as that machine. Olympians can do all the things that sages, heroes, and tellurian bodies can do. But their powers exceed those bodies. They can act with subplanetary powers on the oceans like Poseidon and the weather like Zeus. Of course, Olympians are still physical bodies; they are still organized machines. Their functions are done by their organs. So Olympians are protean: they can grow new organs to perform any needed functions, and they can grow them at the fastest possible speeds. They can change their morphologies by changing their parts.

Since our earthly technologies exceed organic chemistry by including the powers of atoms outside of organic chemistry, our earthly technologies help us understand the powers of Olympian bodies. They can perform functions that can be done by earthly technologies but not by earthly organisms. More precisely, for any function F, if F can be done by any possible earthly (that is, subplanetary) technology, then an Olympian body can do F at least as well as that technology. An Olympian can get solar energy like a silicon photovoltaic panel; or chemical energy like a combustion engine; or nuclear energy like a nuclear reactor. If we can make fusion reactors, then there are Olympian bodies that derive their energy from organs that perform fusion. An Olympian body is functionally equivalent to a robot whose functionality exceeds carbon-extremality. Olympian bodies may emerge in their universes through biological evolution. Or they may be built in their universes by future humans using superior technology.

A good way to think about Olympian bodies comes from Moravec (1988: 102-8; 2000: 150-4). He describes *bush robots*. Their body-plans are based on extending the fractal branching of earthly body-plans. Our own bodies are like branching trees: a central trunk branches into two arms and two legs; each arm sprouts a hand with five fingers; each leg sprouts a foot with five toes. Just two levels of branching. Figure 38.1 shows a bush robot through four levels of branching. But Moravec's bush robots branch further. If a bush robot branched through just 32 iterations, it would have over a billion fingers and toes. These bush robots have extreme computational powers in their many limbs. They are intelligent animals. And they have extreme powers of perception and action. With its tiny fingers, a robot bush can handle subatomic particles. Robot bushes are fractal organisms. Their physicality permits any finitely definable function to be compressed into any finite volume of space-time. They can pack any finite degree of biological or technological power into a cell of any finite spatial size, which performs its operations at any finite rate of speed. An Olympian can pack twice as many cells into the size of a human body, cells that work twice as fast, and twice as powerfully. Or four times as many; or any finite number as many. However, Olympian bodies remain only finitely complex. The soul of any Olympian is that number which, when run on some finite computer, simulates that Olympian. The soul of Athena is the form of her body; the soul of Zeus is the form of his body. The forms of these Olympian bodies are Olympian souls.



Olympian bodies cannot exist in our universe. They surpass all possible machines that exist in our universe according to our physical laws. And they

surpass all possible machines in the sagacious, heroic, and tellurian universes. So they exist in highly superior universes, whose physical laws are extremely finely tuned for the evolution of these divine Olympian bodies. But these universes are the future descendants of our universe in the world tree. The Olympian bodies are maximally perfect subplanetary agents. They are those subplanetary agents than which none greater are possible. They have the maximal subplanetary degrees of intelligence, power, and moral excellence. However, the Olympian bodies are essentially constrained by their subplanetary scales. The Olympians are surpassable. Hence they are material. They are impaired with respect to the next higher deities, namely, the celestial bodies. Bodies rise from Olympian to celestial by expanding in scale and perfection.

5. Celestial Bodies

(5) *The Deities with Celestial Bodies*. For Plato, the celestial bodies include the moon, sun, planets, and physical stars. He said the celestial bodies were deities (*Timaeus*, 41d-42e; *Laws*, 898a-899d). Plotinus agrees (E 1.8.7, 2.1.5, 2.9.8, 2.9.16, 3.2.8, 3.5.6, 4.4.22, 4.4.30, 5.1.2, 5.1.4, 5.8.2, 5.8.3). So does Iamblichus (M 1.17-20). For these ancient pagans, the celestial bodies have minds (E 4.3-4). They are intelligent information-processors. When we naturalize the celestial deities, they turn into intelligent machines at the scales of planets and physical stars. They are computer networks analogous to planet- or star-sized brains. Besides being much bigger than human brains, these celestial brains are much faster. And their algorithms are much more sophisticated, so they are more intelligent. But the ancient pagans also attributed functional powers to the celestial deities: they control things on earth. So these planetary or stellar machines are not just engaged in pure thought. They have organs for perception and action. Of course, the celestial bodies in our universe do not have minds. So these celestial deities exist in future universes. The Figure shows Hecate, who dwells in the cores of all black holes (Danielson et al., 2022). Her eternally watchful eyes collapse the quantum wave function.

One way to think of celestial deities is to think of them as celestial robots created by technological evolution. They are structures made by advanced civilizations. Consider four species of celestial deities. (1) Sandberg (1999) describe the first species of celestial deities. These are planet-sized computers which he calls *Jupiter brains*. (2) Sandberg next describes the second species of celestial deities, which he calls the *Dyson brains*. A Dyson brain is a cloud of interacting computing machines surrounding a star. A Dyson brain consumes the entire power output of its star. All the stuff in an entire solar system (and maybe more) is needed to build a Dyson brain. A celestial robot with the complexity of a solar system (a Dyson brain) might launch itself from the Milky Way to Andromeda. (3) Sandberg describes a third species of celestial deities, which he calls the *neutronium brains*. A neutronium brain is a computer made of neutronium (stuff compressed so densely that its protons and neutrons have dissolved into a soup of quarks). A neutronium brain is a neutron star converted into a computer – a truly stellar machine. (4) Ray Kurzweil (2005: 362) speculates that black holes can be converted into computers. They would be the most powerful celestial computers in the universes with laws like ours. Much as Dyson brains form around stars, so galactic brains may form around black holes.

The celestial machines are living machines at enormous scales of complexity and power. Their sense organs give them direct awareness of the most basic changes in the most basic physical structures (such as quantum fields). Their motor organs directly control the basic forces of nature with the symbolic powers of their brains and bodies. Their physical structures are so intimately woven into the fabric of space-time that they can directly shape all physical structures in space-time by producing symbols that program those structures. The physicality of celestial universes is completely programmable. Hence magic is perfectly effective at all celestial universes. Celestial bodies are the first true magicians. They manipulate physical things by directly controlling the forces inside of those things. To an ancient human (like Iamblichus), they would appear to be exercising non-physical psychic powers. But they are really exercising purely physical powers in accordance with the deepest physical laws. Nevertheless, this technological conception of the celestial bodies is inadequate.

A more natural way to think about the celestial deities conceives of them as organic bodies. They evolved in their universes like living things evolved on earth. And they grow in ways that are analogous to earthly organisms. They have growth-programs like our genetic programs. Consider a more biomorphic Dyson brain. It grows from a seed. At the core of that seed, there exists a physical energy generator whose power is equivalent to a star like our sun. The size of this energy generator resembles the size of our sun. But this stellar energy-source is just an internal organ of the stellar organism. This stellar organism grows a body around its star. Perhaps this body grows like a basket starfish. The star appears to sprout arms growing in many directions. These arms branch again and again many thousand times. At their limits, their final tendrils flatten out and weave together with neighboring tendrils. The result is a spherical basket woven around the central star. The spherical edge of this basket is perhaps as far out as the orbit of Jupiter in our solar system. The fibers of this basket harvest the stellar energy. But they also perform information-processing: this stellar organism is a vast thinking machine. What might such a mind think about? The Platonists all say that our universe is inside of the Platonic divine mind. Some of the thoughts of this stellar organism are simulations of entire solar systems or small universes. Moreover, these organisms have tremendous powers of perception and action. They can detect or influence any physical event anywhere in the universe in the smallest unit of physical time. These are divine bodies.

The sidereal scale of the celestial organisms can be combined with the detail of the bush robots. Picture a bush robot with hundreds or millions of levels of branching. Each cell in this bush robot is as powerful as a Dyson brain. Each cell consumes the power of our sun. Yet, relative to the other things in its universe, this stellar bush is no larger than a human body. Celestial bodies include organisms like human bodies but with the power of entire galaxies. Although these organisms may sound extreme, in fact they are still only finitely complex. And because every celestial body is only finitely complex, it is surpassable and material. It is impaired relative to the next rank of superior celestial bodies. There are endlessly many ranks of celestial bodies (Steinhart, 2014: secs. 113-5). For any function, if that function can be simulated by any possible computer at any rank of finite complexity, then there is a rank of celestial bodies which can perform that function as well as that computer. But every endless evolutionary progression of celestial bodies rises towards an infinite limit. The infinite limits of these progressions are the divine infinite bodies.

6. Infinite Bodies

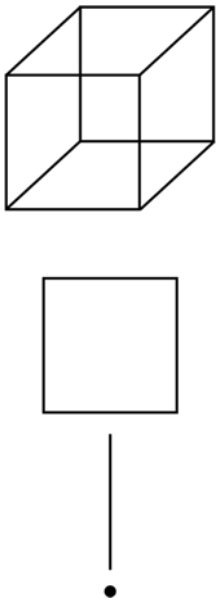
(6) *The Infinite Bodies*. The infinite deities correspond to the Iamblichan intelligible deities (M 1.8-9, 5.14). Although Iamblichus thinks of these deities as incorporeal or non-physical, digitalists naturalize them and physicalize them. An infinite deity is an infinitely complex organism. It contains an infinite computer. The smallest infinite computer is an infinite Turing machine (Tipler, 1995). It has infinite memory. It can perform infinitely many operations in any finite period of time by accelerating: it performs every next operation twice as fast. But modern mathematicians posit endless ranks of ever bigger infinities. Computer scientists have extended Turing machines from the smaller infinities to the bigger infinities (Hamkins, 2002; Koepke, 2005, 2006; Koepke & Siders, 2008). For every rank of transfinite Turing machines, there are some infinite deities whose computational complexities are equivalent to those machines. The Figure depicts Demeter as the infinite goddess of photosynthesis in all possible universes.

The infinite deities evolve further into infinitely complex bodies (Steinhart, 2003, 2014: ch. 9). These bodies are infinitely complex networks of infinitely complex cells. Each cell is itself an infinitely complex network of infinitely complex computers. Thus each cell is an infinitely complex body. These bodies exhibit *holenmerism*: the structure of every part is identical to the structure of the whole. They are infinitely self-nested systems, infinitely complex fractals. These infinite bodies compress infinitely many bits of information into any finite volume of space. Since they can accelerate, they compress infinitely many operations on infinitely many bits into any finite volume of space-time. For example, Moravec's bush robots can branch infinitely. An infinite bush robot has uncountably infinitely many fingertips. Each is the size of a point.

Since we are only finite, we can only understand these infinite deities by extrapolation from our bodies. These extrapolations are poor approximations. For any possible biological function, they can perform that function at an infinite degree of excellence. They can perform all the functions of our bodies at infinite degrees of excellence. They have infinitely powerful and subtle sense organs. They have infinitely excellent brains: they can think infinitely complex thoughts at infinite speeds. They have infinitely powerful motor organs. They can move with infinite speed and agility. They produce works of art with infinite beauty at infinite scales. They have infinite ethical excellence. They live infinitely complex lives. They live in infinitely excellent societies. But all these infinite deities are surpassable. Beyond every rank of infinite deities, and beyond every progression of ranks, there exists a greater rank. There are ranks for all the numbers on the *axis mundi*.

39. Shape-Craft: Theosis

1. Humans Becoming Divine Animals



Human persons exist. According to ancient pagan myths, there are also some persons who are partly human and partly divine. Persons span a continuum ranging from humans to full-fledged deities. The myths also indicate that human animals can change into Olympian animals. This is *transfiguration* or *apotheosis*. It can be illustrated by the old Pythagorean progression: point, line, square, cube. Beyond the cube, there lies the 4D tesseract. So your progression of bodies continues beyond an 3D body into a body with superior physics.

There were at least two ways in which humans became divine. According to the *way of lifting*, the deities used their own powers to raise humans up to their own divine ranks. Asclepius and Hercules were transformed into gods; Ariadne was transformed into a goddess. According to the *way of climbing*, humans can transform themselves into divine animals. This way typically involved consuming *divinizing substances* like *nectar* and *ambrosia*. Nectar and ambrosia occur naturally in our physical universe. Many humans became divine by consuming them (Pindar, *Pythian Odes,* 9.63; Theocritus, *Idylls*, 15.106-8; Ovid, *Metamorphoses*, 14.606-8; see Clay, 1982: 115). Thus nectar and ambrosia are powerful anti-aging drugs. They are enhancement drugs (or molecules that will alter our genetics). For the ancients, these divinizing drugs were merely possible. They thought it was possible to use pharmaceutical technologies to ward off illness, weakness, aging, and death. They were right.

The story of Glaucus is a striking case where a naturally occurring divinizing substance transfigures a human animal into an Olympian animal (Ovid, *Metamorphoses*, 13.898-968). Glaucus was a fisherman who discovered a plant with the power to revivify dead fish. After eating some of it himself, his body began to change into that of a merman: his legs became a fishtail. He had become divine, he leapt into the ocean, and he was welcomed into the community of the sea-gods. Glaucus ate a divinizing substance located in a plant which grew wild on our earth. The substance he consumed caused his body to change its biological structure. Translated into modern biotechnology, this substance reprogrammed the cells of Glaucus at the genetic level. The story of Glaucus points to genetic engineering. When Dante retells the story of Glaucus in 1320, he introduces the word *transhumanize* (*Paradiso*, Canto 1.37-72; see Harrison & Wolyniak, 2015).

2. The Way of Theurgy

Since, as far as we know, no deities are currently operating in our universe, the way of lifting is currently irrelevant. We must turn to the way of climbing. The old myths suggest that there are three main ways for us to climb up to the deities. The first way is the *Way of Biological Evolution*. According to this way, we will naturally evolve into future superhuman animals. On this way, our divine descendants exist in some possible futures of our universe. Digitalists do not object to this way; however, given the laws of our universe, it probably cannot raise us much above sagacious bodies. But biology extends itself by developing the super-biological powers of technology.

The second way is the *Way of Technological Evolution*. As technologies evolve to greater heights of power and excellence, we will be able to use them to artificially enhance our bodies through all the Platonic ranks of divinity. The deifying technologies include at least biotechnologies (like genetic engineering), artificial intelligence, and robotics technologies. These are *higher telestic technologies*. They are the higher forms of the *he telestike techne*, the craft of

self-surpassing. While the lower telestic technologies aim to overcome our accidental impairments, the higher telestic technologies aim to overcome our *essential impairments*. They aim to overcome the *constraints* we have as members of the human species. Of course, the higher telestic technologies include the lower telestic technologies, so the way of technology includes techno-alchemy. And, as technologies advance, we will use them in more sophisticated forms of self-hacking. By applying them to our bodies over many generations, we will elevate humanity to superhumanity. On this way, our divine descendants also exist in some possible futures of our universe.

The higher telestic technologies aim to transfigure human bodies into superhuman bodies. They aim to produce bodies with superhuman body-forms, that is, superhuman souls. The higher telestic technologies resemble the ancient pagan practice known as *theurgy*. Shaw (2015: 158) writes that the purpose of theurgy "is not to escape from the body but to overcome the confusions of embodiment and allow the divine to take its seat in one's own body." Thus "Deified theurgists do not escape from their bodies or from nature; they embrace both from a divine perspective" (159). Shaw writes that, for the theurgist, "nature itself is the face and living symbol of the divine; nature is the *incarnation* of divine realities *ab ovo*" (2014: *xxiv*). Theurgy affirms that there is "no need to be redeemed *from* a fallen nature, for *nature itself is the body of our salvation*" (2014: *xxv*, his italics). Shaw writes that theurgic rituals *transfigure* the body; they change its soul from human to divine. The body takes on a divine shape. Digitalists therefore identify the higher telestic technology with theurgy. More precisely, it is *techno-theurgy*. Techno-theurgy aims to change the form of the body; it aims to change the body-pattern. Kurzweil writes that "We can 'go beyond' the 'ordinary' powers of the [universe] through the power of patterns. . . . I regard myself as a 'patternist'. It's through the emergent powers of the pattern that we transcend" (2005: 388). By practicing techno-theurgy, we make the patterns of our bodies more like divine patterns.

The *transhumanists* advocate using technology to overcome our essential impairments (they should really be called *superhumanists*). Through technology, we will change our human bodies into superhuman bodies. Our new superhuman bodies will be free of illness; their powers will be greater than any human powers; they will acquire many powers of non-human animals; they will not age; they will not die. Tirosh-Samuelson writes that transhumanists seek to "immortalize themselves in super-intelligent machines, thereby becoming gods" (2012: 726). Harari writes that we will need to acquire "godlike control" of our own biology in order to "overcome old age and misery" (2015: 49-5). And so by seeking to overcome our essential impairments, "humans are in fact trying to upgrade themselves into gods" (49). If we succeed, we will gain "the strength of Hercules, the sensuality of Aphrodite, the wisdom of Athena or the madness of Dionysus" (50). The divinizing technologies of the transhumanists are part of the higher telestic technology. They are techno-theurgical.

For transhumanists, deities are possible future animals of superhuman power and intelligence. These include genetically engineered superhuman animals and inorganic robotic animals. Transhumanists often refer to these future animals and robots as *gods*. Harari says we should think of these future superhumans "in terms of Greek gods or Hindu devas" (2015: 54). He says they will be like Zeus or Indra. He says transhumanism aims to upgrade humans into gods (2015: 49-56). It aims to "upgrade *Homo sapiens* into *Homo deus*" (2015: 53). These transhumanist gods also include celestial computers as large as planets, stars, galaxies, and the entire universe (Kurzweil, 2005, 342-67). Many transhumanists refer to these celestial computers as gods (Hughes, 2010: 6-7; de Garis, 2005). Sandberg (1999) describes celestial computers he calls Zeus, Chronos, and Uranos. Walker (2005) says transhumanism continues the ancient Platonic project of theosis. He says that we can become gods. Peters says transhumanism "may

even mean a return to polytheism if heaven is filled with human beings now become gods" (2018: 357). But these gods will be natural and computational. The Olympian deities had superhuman powers. They had superhuman vision, memory, and cognition. They could shape-shift, and so on. Transhumanists aim to give us or our descendants similar powers.

Unfortunately, our best technologies are not sufficiently powerful to realize the goals of techno-theurgy. Thus techno-theurgy (like techno-alchemy) shades off into magic. The *Greek Magical Papyri* describe procedures which humans can use to ascend to divine levels of functionality. The *Mithras Liturgy* describes ritual technology for human ascent (Stoholski, 2007). The ritual does not merely involve incantations. It also involves using tools to manufacture substances. It involves procedurally structured actions. It is a technical procedure for symbolically transfiguring a human into a deity.

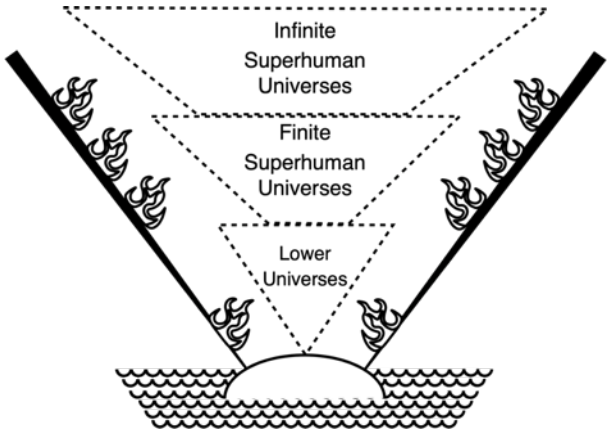
The ways of biological and technological evolution operate within universes. For example, in our universe, simple organisms evolved into humans; and technology may help humans evolve into superhumans. However, every universe is constrained by its own laws, which place upper bounds on the complexities of the most complex things that can evolve in that universe. The ways of biological and technological evolution are constrained within each universe. So, if every human will be surpassed by all possible greater versions of itself, those versions cannot all exist in any single universe. They must be distributed across lineages of universes. Although biotechnical evolution plays an essential role in the deification of humans and other lifeforms, it depends on and is driven by a deeper and greater form of evolution, namely, cosmological evolution.

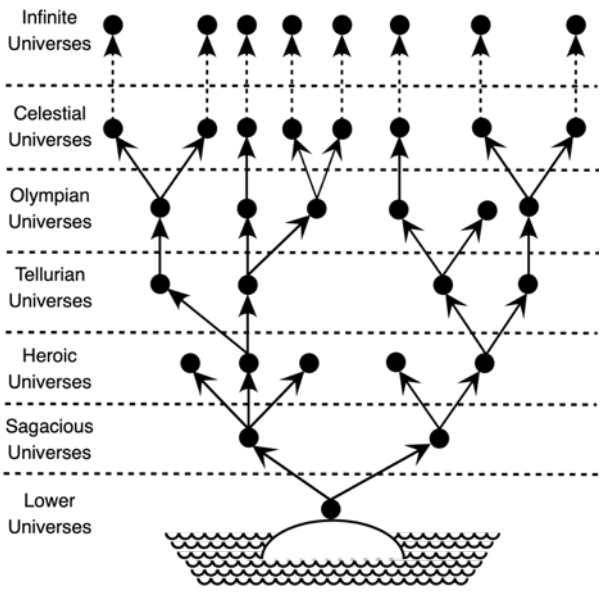
3. The Way of Cosmological Evolution

The third way for humanity to surpass itself into divine superhumanity is the *Way of Cosmological Evolution*. According to the incantation for universes, every universe will be surpassed by its successors, and every progression of universes will be surpassed by its limits. According to the incantation for things, your body (and your life) will be surpassed by its greater successors, and every progression of your bodies (and lives) will be surpassed by its greater limits. Hence you will have future divine counterparts in future divine universes. You will be changed into a deity through *reincarnation* or *rebirth* across many universes. Likewise every human will be changed into a deity.

You started out in some particulate universe as a simple physical particle. The form of your body (that is, your soul) was simple. You were reincarnated into some atomic universe as an atom. And then you were reincarnated into a molecule. Then you climbed up through the chain of living things. You were a plant; then a fish; then a reptile; then a mammal; then a primate; then a human. Here you are. Your cognitive powers have increased. Your body is more complex and more powerful. Now you are a rational moral agent, that is, you are a person. So moral laws of karma apply to your future rebirths. If you live as virtuously as you can, you will be reincarnated into some transhuman universe. The form of your body will be even more complex. Your future bodies will eventually rise through all degrees of finite superhuman perfection. They will pass through all the finite superhuman universes. You will rise through all the ranks of the finite deities. After making infinite progress, you will be reincarnated into an infinite superhuman body. Your future bodies will rise through all the ranks of transfinite perfection. Of course, at every step of this process, you are reborn into multiple future bodies. You are the root of a great branching tree of future bodies. Perfection is always multiple.

All bodies are associated with universes. The universes in the world tree can be sorted into three big ranks. (1) The first big rank is the *lower universes*. These are the universes that rise from the empty universe to the human universes. (2) The second big rank is the *finite superhuman universes*. All the bodies in these universes are superhuman but they are only finitely complex. This big rank divides into several smaller ranks. These smaller ranks are the sagacious, heroic, tellurian, Olympian, and celestial ranks. (3) The third big rank is the *infinite superhuman universes*. This divides into smaller ranks like the countably infinitely complex bodies and the uncountably infinitely complex bodies. It extends along the *axis mundi* though all the ranks of complexity defined by set theory. Figure 39.1 schematizes the world tree divided into lower universes, finite superhuman universes, and infinite superhuman universes. Figure 39.2 shows a more fine-grained image of the world tree. It shows the self-surpassing of universes from lower universes to the infinite universes. This Figure is highly simplified: only a few universes are shown at each rank; it treats the entire system of lower universes as a single dot. The dashed lines from celestial to infinite universes indicate limits of progressions.





All your future bodies are parts of universes. One way to be a part of universe is just to be a proper part of it (a part less than the whole). Your present body is a proper part of our universe. Another way to be a part of a universe is to be an improper part of the universe (a part that is identical with the whole). As your bodies grow in power, they will become improper parts of universes, that is, cosmic bodies. They will turn into living intelligent universes (like pantheistic gods). They will create universes within their own bodily activity (like a computer creates a video game). After making absolutely infinite progress, you will be reborn as a *star*. A star is an absolutely infinitely perfect body. It is an unsurpassable body, a transcendental body, at the rank of a proper class. The stars exist at the rank of the Good; they are avatars of the Good in the guise of bodies. Every star is an *ecstasy of bodies.* Just as the ecstasy of sets is not a set (it is a proper class), so every ecstasy of bodies is not a body. It transcends body by being more visceral than body.

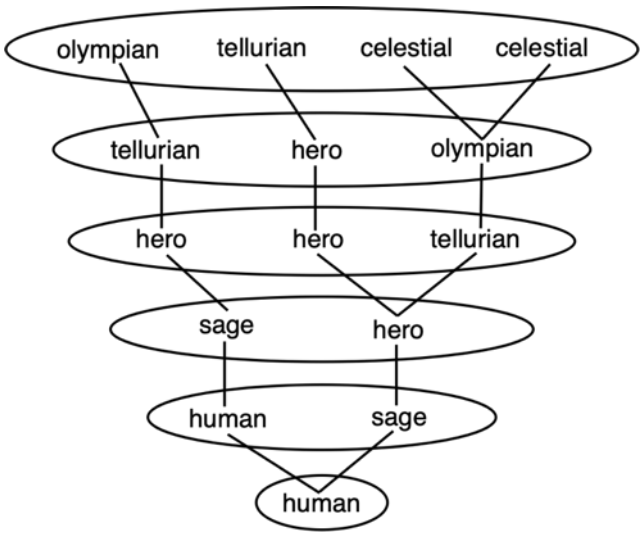
4. Humans Rising through the Divine Ranks

The world tree contains many lineages of universes. Every lineage is an optimal path from the One to the Good. It is a series of recursively self-improving universes. As these universes rise higher towards the Good, they gain intrinsic value, that is, complexity. Although every universe has some fixed upper bound on its complexity, lineages of universes are not bounded above by any degree of complexity. On every lineage, the universes rise through all consistently definable degrees of complexity.

As universes surpass universes in any lineage, they grow internally more complex. Their parts grow more complex. The incantation for things specifies how every thing in any universe is surpassed by its successor things in successor universes. It specifies how every progression of things in any progression of universes is surpassed by its limit things in limit universes. But the lives of humans (and all other organisms) are things. In our universe, they are 4D lives composed of 3D bodies. The incantation for lives specifies how every life is surpassed by its successors and every progression of lives is surpassed by its limits. Every successor life is more complex than its predecessor and every limit life is more complex than every life in the progression of which it is the limit.

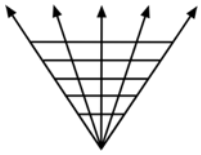
Digitalists affirm that every human animal will be surpassed by all possible divine versions of itself. We will be surpassed by sages, heroes, tellurians, Olympian deities, celestial deities, and holographic deities. And, beyond them, by all the higher transfinite deities. All these superhumans are purely physical animals. Since animals are machines, they are divine machines. We also affirm that all earthly organisms of every species will also evolve through their own ranks of divinity. And if there are alien lifeforms elsewhere in our universe, they too will evolve through all the ranks of divinity. But here we are concerned with the ways humans surpass themselves into deities.

Consider a single lineage of universes that contains our universe. Our universe contains some humans; it is a *human universe*. Our human universe is surpassed in this lineage by *sagacious universes*, then by *heroic universes*, then by *tellurian universes*, by *Olympian universes*, and by *celestial universes*. This progression of universes is surpassed in the limit by *infinite universes*. Eventually, as universes surpass universes in this lineage, all the humans in the human universe are reborn through all these divine ranks. We are reborn into sages, heroes, tellurians, Olympians, and celestials. We will all turn into gods and goddesses. In the limit, our bodies will be reborn into divine infinite bodies. Figure 39.3 shows the self-surpassing of humans all the way up to celestial deities. The ovals in the Figure are universes. The lines are arrows pointing upwards from lower animals to higher animals (arrowheads are not shown).



40. Shape-Craft: Pursuing the Deities

1. Simulating Divine Animals



Literal and Figurative Theurgy. Deities are superhuman animals. They are living physical bodies. They could be organic, robotic, or entirely alien physical structures. Plato said we should try to become as much like the deities as possible. There are three ways for humans to climb up towards the deities: the Way of Biological Evolution, the Way of Technological Evolution, and the Way of Cosmological Evolution. The Way of Technological Evolution is theurgical. Theurgy is a system of practical activities aimed to make our bodies more divine. *Literal theurgy* employs technologies to permanently alter our physiologies to make our bodies literally more like divine bodies. Transhumanists seek to develop literal theurgy. But *figurative theurgy* uses ritual techniques to temporarily alter the patterns in our brains. During figurative theurgy, our bodies remain human; figurative theurgy does not make our bodies literally more divine. During figurative theurgy, we are analogous to the deities.

The Souls of Deities. Since the deities are living physical bodies, the deities have souls. The soul of any deity is the form of its body; it is the most specific eidolon instantiated by that divine body. Eidolons are causally powerful forms; they are forms animated by the One. Since the souls of deities are eidolons, and eidolons are integrally omnipresent, the souls of deities are integrally omnipresent. They are wholly present in every possible place. For any deity, for any possible universe, for any region of space-time in that universe, the soul of that deity is present to some positive degree in that region. It works in that region to transform it into an instance of that soul; it strives to produce a strong self-instance there. Since deities are physical things, they can have replicas; their bodies can have many copies. If some divine soul succeeds in producing a self-instance in some region, that region becomes a copy of the deity.

Humans Simulating Deities. For a human to *simulate* some deity is for that human to perform actions which are similar to those characteristically performed by some deity, and to perform them in some way which points to the divine. Simulation entails that the human performs those actions at the highest extreme of human excellence. The way the human performs those actions rises from ordinary to extreme human performance. By performing actions which are similar to those characteristically done by some deity, and performing them in a way which points beyond the human towards the divine, the human becomes analogous to the deity. Just as the deity does this action in some divine (that is, superhuman) way, so the human does this action in the most divine way possible for a human. And, when a human animal becomes analogous to a deity, that human animal becomes metaphorically identical with the deity.

Dissociative Trances. When humans simulate deities, they are pushing their human bodies beyond their humanity, so that these bodies cease to recognize themselves as human. As these human animals cease to recognize themselves as human, they cognitively dissociate from their own humanity, they enter *dissociative trances*. These trances often occur during states of *flow* (Csikszentmihalyi, 2002). During these trances, the cognitive part of the human soul ceases to exercise its own characteristic activity in the consciousness of that human. The brain stops instantiating the cognitive part of its own soul. The brain temporarily reorganizes itself in a way that the human ceases to be aware of their own human self and its essentially human identity. The human brain forgets its own humanity. Trancework is common in paganism. It is often linked with

shamanism (including the Norse magic known as *seiðr*). When a human enters a dissociative trance, so that their soul ceases to exercise its cognitive activity in their consciousness, then other souls can exercise their cognitive activities in that human consciousness. The human in trance is open to other identities.

Divine Receptivity. The soul of every deity is always already at work in every human body, striving to change it into a superhuman animal. Of course, the humanity of the human prevents that soul from becoming literally instantiated in that body. However, when some human animal simulates some deity, and when that human enters a dissociative trance, then that human animal becomes open to or receptive to the soul of the deity; but the receptivity of some body to the soul of some deity entails the immediate presence of that divine soul in that body. Thus Iamblichus writes: "For nothing enters, even to a minimal extent, into likeness with the gods, to which the gods are not straightaway present and united" (M 1.15). Of course, when some human is united to some divine soul in this way, that human remains human; it does not change into a superhuman animal. Hence the human does not strongly *literally* instantiate that divine soul. The soul of that deity becomes *strongly figuratively instantiated* by that human animal.

Divine Possession. When some human strongly figuratively instantiates some divine soul, then, as Iamblichus says, "either the god possesses us, or we become wholly the god's property" (M 3.5). The human body is *possessed* by that deity; the human *channels* that deity (M 3.4-9). An *epiphany* occurs in that human body, so that the deity is (figuratively) located in and present in that body. Thus Shaw says theurgy changes a human "into a living icon of the god" (2013). The human animal becomes a *living statue* of the deity; they become an *avatar* of the deity. The soul (and body) of the human become *sacred to* the deity, so that the soul of the human becomes a *symbolon* or *synthematon* of the deity. Hence the human body becomes *sanctified by divine grace*, a living sacrament. During divine possession, Iamblichus says a human "exchanges one life for another and exerts a different activity, and considers itself then to be no longer human . . . [it gains] the most blessed activity of the gods" (M 1.12). By means of figurative theurgy, a human can "assume the mantle of the gods" (M 4.2). When a human is possessed by some deity, then, as Iamblichus says, "we exercise our activity in common with" that deity (M 3.5). The possessed human becomes an actual counterpart of the non-actual deity, so the deity *acts vicariously* through that human. The process of channeling some divine soul is *theosis*. To be possessed by a deity is to be lifted up higher towards the Good by the power of the One. It is to give thanks to the One, and to bear witness to the Good.

2. Theosis via Extreme Rituals

Self-Transcendent Pain. During theurgical activities, the human body drives itself to the edge of human excellence. Hence theurgy is *edgework* (Lyng, 1990). But driving your body to the edge of its humanity is hard, painful work. Thus theurgical activities are painful and often dangerous *ordeals*. However, the pain generated during theurgical ordeals points beyond itself; it is self-transcendent pain. It points through the breaking of the human body-form, towards the emergence of divine body-forms. It disrupts the cognitive operation of the human soul so that some divine soul can figuratively animate the human body. And, if the human is possessed by some deity, then that human has figuratively exceeded their own humanity, and has gone into ecstasy. Any deity, performing its own characteristic activity, is in a state of *bliss*, a state of *grace*. During divine possession, the agony of self-transcendent pain becomes *euphoria*. The human body experiences itself as moving with divine power in a superlatively beautiful

way. It experiences boundless energy, peace, and harmony. It experiences its own transfiguration. The human experiences time and space in a divine way, so that time feels like eternity, and space feels like infinity. The human experiences itself as divinely embedded in nature, so that it experiences the deeper interconnection and unification of all things. It participates in the single relational power that binds all things together into the wholeness of nature.

Extreme Rituals. Figurative theosis typically occurs during *extreme rituals*. Extreme rituals include religious ordeals. Iamblichus mentions religious ordeals in which people are pierced with skewers, are struck with knives, or walk on fire (M 3.4). Religious ordeals are found in many religions from ancient times to the present day. Extreme rituals also include extreme sports, such as climbing, surfing big waves, skiing extreme slopes, BASE jumping, and so on. To strive for theurgical union with some deity through the practice of extreme rituals is to pursue that deity. The mountaineer pursues the Norse goddess *Skathi*. The wingsuit flyer pursues the winged goddess *Nike*. The freediver, who swims as deep as possible on a single breath and then returns, pursues *Poseidon*. Humans who practice extreme fighting (mixed martial arts) pursue *Ares*. Theosis includes extreme sexual practices (such as BDSM). Assuming (with some neopagans) that *Hecate* is the goddess of sacred kink, BDSM pursues Hecate.

Mountaineering. The Norse goddess Skathi is a divine mountaineer. Every organ of her body is finely tuned for climbing at superhuman levels of excellence. She can run up an Everest or K2 with graceful athletic ease. By climbing mountains, humans simulate Skathi. By free-soloing up sheer cliffs, we simulate her even more closely. When Alex Honnold free-soloed El Capitan (2018), he was engaged in self-transcendent theurgy. When the climber goes into a dissociative trance, into the state of flow, they become possessed by Skathi. Her soul is strongly figuratively instantiated in that human climber. The human climber becomes an avatar or living statue of Skathi. She climbs vicariously through them; she sees vicarious through their eyes. Done with for the sake of theosis, climbing is sacred practice. Done as sacred practice, climbing it is part of pagan nature-religion (Stutfield, 1918; Driscoll & Atwood, 2020). It gives thanks to the One and bears witness to the Good. Climbing points beyond the human to superhuman values (Ebert & Robertson, 2013; Conroy & Gonzalez, 2017). The spiritual climber does not act with hubris to conquer the mountains; on the contrary, they act with humility to participate in the divine life of the mountain deities (Brymer & Gray, 2009). Of course, in order to ascend to the Good, climbing must be done ethically. Ethical climbing requires expertise gained through extensive training; it requires ascetic discipline.

Endurance Running. The Olympian god Hermes is a divine runner. His body is finely tuned for running at superhuman levels (of speed, endurance, and so on). Humans can pursue Hermes through sprinting, but it's too short to produce any dissociative trances. For theurgy, Hermes is best pursued through *endurance running* (that is, long-distance running). Since long-distance running drives the body to the extremes of its human functionality, and tries to drive it past them, it hurts; it is an ordeal. Yet this pain is self-transcendent; it points towards the divine body of Hermes. During endurance running, if you enter a possession trance, then you experience an ecstasy known as the *runner's high*. It includes euphoria, unity, boundless energy, inner peace and harmony, transmutation of pain into light, eternity of time and infinity of space, and dissociation (Masters, 1992; Dietrich & McDaniel, 2004: 536; Edwards & McCormick, 2017). Running as a sacred practice gives thanks to the One, and bears witness to the Good.

Ethics of Theosis. During theurgical rituals, the human drives itself to the edge of its humanity in a way that points beyond that humanity. But when a

human goes beyond its humanity, it breaks its form, it dies. Extreme rituals are dangerous. Because they are dangerous, theurgical rituals require ethical constraints. On the one hand, Plato often says that humans ought to become more like the deities (*Phaedrus*, 252c-253c; *Ion*, 533d; *Theaetetus*, 176a5-b2). Plotinus says our goal is to live "the life of the gods: for it is to them . . . that we are to be made like" (E 1.2.7.25-32). So we have a duty to pursue the deities. However, since we are essentially human, our duty is merely to pursue the deities *as far as humanly possible*. Our duty to become as divine as humanly possible entails that we are permitted to place human goods at risk in theurgy. However, those risks must be minimized by careful preparation, long training, and serious discipline. On the other, we have a duty to remain human. To overstep the bounds of the human is to commit the error of *hubris*. The penalty for hubris is injury or death. Our human all-too-human pursuits of the deities must be constrained by human morality. Our duty to remain human forbids us from sacrifice our bodies for the sake of becoming divine. For example, those who practice extreme sports generally strive to minimize the risk of injury and death.

Theosis is Religious. During figurative theurgy (theosis), a human becomes an avatar of a deity; an epiphany occurs in that human body. To the extent that religion involves human union with deities, theosis is religious. But religious rituals provide spiritual benefits. Extreme rituals provide humans with spiritual benefits (Lee et al., 2016; Klement et al., 2017; Xygalatas, 2022). BDSM practices provide these spiritual benefits too (Baker, 2018; Fennell, 2018; Greenberg, 2019). Extreme sports provide evidence that theosis is religious. Climbing and surfing are often theorized as nature-religions (Stutfield, 1918; Driscoll & Atwood, 2020; Taylor, 2007). When extreme rituals are done theurgically, that is, for the sake of extending human goods into the superhuman, then they are done *super-ethically*. When they are done super-ethically, in the pursuit of divine life, they are done *religiously*. Beyond merely human ethics, theurgists have *religious rights* to pursue the deities.

3. Theosis via Ecstatic Dancing

Divine possession occurs during ecstatic dances. Iamblichus wrote about the use of music and dancing to induce possession trances (M. 3.9). The modern equivalent of ancient ecstatic dances are *raves*. Raves are communal dance parties which involve electronic music, moving images, and light shows. They are set up for ecstatic dancing. During classical rave culture, many raves acquired explicitly spiritual or religious aspects (Takahashi & Olaveson, 2003; Gauthier, 2004; St John, 2004; Sylvan, 2005; St John, 2006). They sometimes incorporated items from Eastern religions, Buddhism, and neopaganism. Classical rave culture was mostly gone by 2010 (Anderson, 2009). However, raving continues in a smaller way. Digitalists seek to revive classical rave culture in better ways.

Some ravers construct a ritual container (Sylvan, 2005: 2-3, 107-12). It marks the spatio-temporal boundaries of the rave. This construction often uses the *common liturgy* inspired by Wiccan rituals. These ravers begin by casting a circle. They call the four elements and the four cardinal directions. Some raves also begin by purifying the musical equipment by smudging it with sage (Hutson, 2000: 41; Sylvan, 2005: 109). By marking the directions in space, and the starting moment in time, these raves create a ritual container. The creation of a ritual container signifies to the participants that they will be engaged in a performance with metaphysical significance. The items in raves represent metaphysical items by analogy. Thus raves can be interpreted in terms of digitalism.

According to digitalism, nature emerges from being-itself, that is, from the One. Hence our chant for the One is appropriate here: In the beginning is the One, and the One is the earth, and the One is *in* the earth. So the One lies beneath the floor on which the ravers dance. They dance on the ground of being; on an altar which contains the One; on an altar which *is* the One. Above and beyond the ground of being, the beings among beings emerge. The beings that are physically present in raves are human animals. However, since the souls of deities are integrally omnipresent, they too are present in space-time of the rave.

Human history contains many dancing deities; ravers pursue these dancing deities. Many ravers report that they channel deities when they dance (Sylvan, 2005: 88-93). When the psychologist Audrey Redfield interviewed ravers, one woman reported that, when she danced, "I would feel like I would turn into a certain deity, . . . like some kind of ancient goddess" (2017: 71). Following Iamblichus, this dancer "exchanges one life for another and [her mind] exerts a different activity, and considers itself then to be no longer human" (M 1.12). Through ecstatic dancing, she has assumed "the mantle of the gods" (M 4.2). She was channeling that goddess. Her body figuratively instantiated the soul of the goddess. She became a living statue of the goddess, an avatar of the goddess, an actual counterpart of the goddess, so that the goddess vicariously danced through her. To the extent that ravers channel deities, raving is theurgical.

There are two reasons why raving is theurgical. The first comes from the physiology of raving. Raving is a high-intensity physiological activity, involving long and fast dancing. Ravers drive their bodies to the edge of human performance, so that raves are extreme rituals, like extreme sports. Moreover, raving induces dissociative trances. Specifically, ravers enter *hyper-arousal trances*. The trances from rave dancing are similar to, but distinct from, the trances that emerge during the runner's high or climbing mountains. During their hyper-arousal trances, the bodies of ravers become receptive to divine souls, and their bodies strongly figuratively instantiate those divine souls. Their human souls (and bodies) become sacred to the dancing gods and goddesses; they become symbolons of those deities; hence they channel those deities.

The second reason for the theurgical character of raving is social. By dancing together to the same music, the bodies of many ravers become *behaviorally synchronized* and *rhythmically entrained* (Phillips-Silver, Aktipis, & Bryant, 2010). Rhythmic entrainment occurs when people clap their hands in synchrony, raise their arms in synchrony, sway or jump or march or dance in synchrony, bang their heads to music, drum together, chant in synchrony, engage in call-and-response together. It typically occurs when many human bodies oscillate to the same pulse or beat. Many religious rituals use rhythmic entrainment.

As bodies become rhythmically entrained, they carry more and more information about each other. The integrated information of the group increases (Engel & Malone, 2017). This is Plotinian sympathy. The dancers are the highly cooperative parts of some well-organized whole. Plotinus says that virtue in the soul is analogous to the coordination of dancers (E 3.6.2). So the ravers fuse together into a single virtuous soul. They participate in that virtue. But that soul exceeds any human soul; it is a social soul. So the dancers also represent a well-organized society. A well-organized society participates in social virtues like fairness, equality, and justice. So the dancers participate more intensely in those social virtues; they learn what justice feels like. Hence rhythmic entrainment manifests powerful prosocial benefits. It facilitates cooperation (Wiltermuth & Heath, 2009; Valdesolo & DeSteno, 2011; Reddish, Fischer, & Bulbulia, 2014; Baimel et al., 2015). The many dancers fuse into a greater whole that represents the larger-than-human wholes in our universe. Plotinus says dancers represent life itself (E 3.2.16). The dancers represent the whole earthly ecosystem. Plotinus thinks of the whole universe as a musical chorus (E 4.3.12, 4.4.8, 4.4.33-35). So the dancers imitate the entire universe. Their harmony makes the universe.

The rhythmic entrainment of the ravers helps their separate human minds fuse into a hive mind. This hive mind belongs to a superhuman animal. Every raver participates in this superhuman animal in their own way; they learn what it feels like to be part of a superhuman animal. But this participation tends towards identity: they learn what it feels like to *be* a superhuman animal. When ravers become socially bound together into a superhuman hive mind, their collective strongly figuratively instantiates the soul of every dancing deity. Perhaps they collectively figuratively instantiate Shiva, Lord of the Dance; or perhaps the Olympian version of Shiva, that is, Dionysus.

During their hyper-arousal trances, ravers often have intense spiritual or mystical experiences. They often experience a positive power flowing through their bodies; their ego-boundaries dissolve; they see that all things are connected and unified; they feel that this same power flows through all things (Sylvan, 2005: ch. 3). This is what it feels like to be a divine animal. For a human to be possessed by a deity is for that human to be lifted up towards the Good. It is to experience in your own body divine benevolence, to be raised up into superhuman moral excellence and virtue. But to be lifted like that is to experience the benevolence in nature, the positivity of the power of the One. Hence it is not surprising that along with their experiences of unity and connection, ravers often report *pronoia*, the feeling that reality is out to help you.

Arousing fire-energy in your own body creates positive personal changes. It is therapeutic (Hutson, 2000). It helps you overcome anxiety and depression. It helps you overcome destructive behaviors. It makes you compassionate, and gives you hope, confidence, and courage. Arousing this positive fire-energy orients you towards positive social values, expressed in the rave ethic of PLUR (Peace Love Unity Respect). It motivates an ethics grounded in compassion. When raving is done as sacred practice, it becomes part of the *he telestike techne*, the art of (ethical) self-surpassing. Since the art of self-surpassing is spiritual, such raving is spiritual. Done as sacred practice, rave dancing gives thanks to the One and bears witness to the Good. It is ecstatic theurgy.

To facilitate access to their altered states of consciousness, many classical ravers took psychoactive molecules (typically, MDMA, also known as Ecstasy; and sometimes LSD). Thus raves can function as psychedelic communions, in which Ecstasy or LSD functions as psychedelic sacraments. Perhaps these communions can be thought of as modernized counterparts of the ancient Eleusinian Mysteries. The spells in the Greek magical papyri often involve drugs (Betz, 1986). Plotinus likens the outflowing power of the One to the power of drugs (E 5.4.1, 6.1.22). And Iamblichus says that some theurgic rituals involve "aromatic substances" (M 5.23). Digitalists are therefore open to the ethical and legal use of psychoactive molecules in theurgical rituals. However, digitalists oppose all unsafe or illegal use of psychoactive drugs.

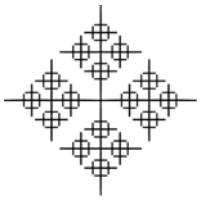
Clinical evidence indicates that taking MDMA enhances prosocial emotions and behaviors (Hysek et al., 2014; Kamilar-Britt & Bedi, 2015). Thus using MDMA in raves motivates positive ethical self-surpassing. However, the use of MDMA or LSD at classical raves was medically and psychologically unsupervised. It was unethical. Many people suffered harm (Parrott, 2004). It has been argued that careful chemistry can reduce or eliminate the harmful effects of MDMA (Curry et al., 2018). And the use of MDMA and LSD is currently illegal everywhere. Digitalists oppose all unsafe or illegal uses of psychoactive drugs. Nevertheless, we are confident that there are safe ways to use MDMA. Digitalists are interested in making MDMA legal for religious purposes (see Levy, 2004). But this religious use will also have to be accompanied by strict rules for ethical use and the elimination of medical harm.

Those raves that began with casting or concentrating rituals end with uncasting or releasing rituals (Sylvan, 2005: 107-12). If the directions and elements were called, they are released. An ending ritual may involve

expressions of gratitude. The uncasting ritual marks the final boundary of the rave in time. It completes the ritual container. There are many reasons why people participate in raves. You can go to a rave for purely hedonistic purposes (to take drugs and get high; to find a sexual partner). If your motivation is hedonistic, then it is selfish. Your psychological benefits will be shallow; you are not fulfilling any moral obligation. Or you can go religiously, to give thanks to the One, and to bear witness to the Good. If you go religiously, then you are more likely to gain greater psychological benefits from the rave. And if your motivating reason is religious, then you are fulfilling a moral obligation. You ought to try to rise toward the Good. By raving, you do what you ought to do.

41. The Transcendental Bodies

1. How Universes become Cosmic Organisms



Although our universe contains many complex things (like humans), as a whole it is pretty simple. Since most of its parts are hydrogen atoms, its average complexity is only slightly greater than hydrogen. And our universe follows a very simple evolutionary path: it starts with extremely low complexity at the big bang. As free energy expends itself, driving the evolution of complexity according to thermodynamic principles, it ascends to some height of complexity. Finally, it descends into thermodynamic heat death, so its complexity is extremely low again. Thus our universe traverses a *parabolic arc of complexity*.

Our universe is surpassed by more complex universes, which further ascend the great chain of being. Their laws are more finely tuned by cosmic evolution for the sake of producing greater internal complexity. Evolution rises to higher heights of complexity in these greater universes. They contain things that are more complex than humans, such as divine bodies. And their evolutionary paths become more complex as well. At first, they too traverse parabolic arcs of complexity, even though their arcs rise to higher peaks. But then these arc start to take longer and longer to descend to simplicity. These universes self-organize into self-maintaining systems. They persist longer and longer at their peaks. Eventually, perhaps at the rank of Olympian universes, they no longer descend at all. They remain at their complexity peaks. These peaks are their *mature forms*. Their mature forms are *self-adaptive systems*. Self-adaptive systems actively self-organize into their mature forms and actively strive to maintain those forms. These cosmic self-adaptive systems are perpetually successful in their homeostasis: they persist forever in their mature forms.

Self-adaptive universes surpass themselves into *self-regenerating universes*. At their mature forms, these universes are self-regenerating systems. Within these universes, every part constrains every other part in such a way that every part distinctively contributes to the persistence of those constraints. These universes are functionally equivalent to living organisms. They are the first *cosmic organisms*. The ancient Platonists and Stoics conceived of our universe as a living physical organism (Plato, *Timaeus*, 33b-34b; Cicero, ONG, 2.45-47, 2.82; Plotinus, *Enneads*, 2.3.7, 2.3.13, 2.9.12, 3.2.7, etc.). Of course, our best physics does not support the thesis that our universe is a self-regenerating system. But the descendants of our universe will eventually become cosmic organisms. As universes become self-regenerating, they absorb their dragons.

Self-regenerating universes surpass themselves into *self-governing universes*. These universes self-organize into self-governing mature forms. These mature forms persist forever. As they mature, they evolve internal organs specialized for self-regulation and control. Since these organs are the control systems for living cosmic organisms, they are *cosmic minds*. These cosmic minds are massively parallel distributed computing systems. They pervade the universes as part of the fabric of space-time. Or they fill some higher-dimensional manifold which contains spatio-temporal submanifolds. Many ancient pagans argued for a cosmic mind. They viewed this cosmic mind as the control system for our universe. Among the pre-Socratic thinkers, Anaxagoras argued for a cosmic mind in our universe. Socrates likewise argued for a cosmic mind (Xenophon, *Memorabilia* 1.4.2-7; Plato, *Philebus*, 28d). The Stoics argued that our universe is animated by an all-pervasive intelligence (Cicero, ONG 2.80-94). This intelligence is found in the physical *pneuma* that flows through all things (Cicero, ONG 2.23-31). So the Stoics thought our universe contains a cosmic mind. They portrayed our universe as an intelligent living animal. They characterized it as the most perfect being (Cicero, ONG 2.16-22, 2.33-5). Plotinus

also argued that our universe contains a cosmic mind. Of course, these ancient pagan thinkers were wrong to attribute these features to our universe. Self-governing universes will not emerge until much later in the world tree. But they were on the right track.

2. The Emergence of Infinite Cosmic Organisms

The intelligent living universes continue to ascend the ranks of complexity. They form infinite progressions which produce infinite limit universes. These infinite universes are infinite cosmic deities. They are infinitely complex. So we need to talk about infinite complexity. An infinitely complex system is *exactly self-similar*: some proper part of that system has the exact same structure as the whole system. A physical example comes from Josiah Royce (1927: 506-7; see Steinhart, 2012). Suppose there is a perfect map of England inscribed somewhere on the surface of England. This map exactly depicts the place in England that contains the map. So the map contains an image of itself, which contains an image of itself, and so on to infinity. The map is *perfectly self-representative*. Another physical example comes from mirrored rooms. Suppose there is a square room with perfect mirrors on all sides. If you walk into that room, your body is reflected to infinity from six different perspectives. There are six self-similarities. A third physical example comes from holograms. Holograms are self-similar: any part of the hologram encodes the image on the entire hologram. Actual holograms are imperfect. But if some hologram is perfect, then every part of that hologram perfectly contains the entire image of the hologram. It contains an infinitely deeply self-nested series of self-images. The image on a perfect hologram is *integrally omnipresent*: the image present in the entire hologram is exactly present in every part of the hologram. Another term for integral omnipresence is *holenmerism*: the whole is completely present in every part.

The infinite cosmic organisms correspond to the Iamblichan intelligible deities (M 1.8-9, 5.14). Iamblichus says these deities are integrally omnipresent (M 1.8-9). Here he follows Plotinus (E 6.4, 6.5). However, while Iamblichus says these deities are bodiless minds, digitalists say they are *integrally omnipresent bodies*. An integrally omnipresent body exhibits holenmerism: the whole body is wholly present in every part of that body. It is an infinitely complex fractal. Its structure is exactly nested inside of itself from every perspective. Since these holographic bodies are infinitely complex, they can only be simulated by infinitely complex networks of infinitely complex computers (and not by infinite networks of finite computers). So these are truly infinite bodies (Steinhart, 2014: ch. 9). They have infinite complexity and therefore infinite intrinsic value. Their souls are programs for infinite machines. They can simulate the entire history of any finitely complex universe in any finite unit of time. These cosmic deities do not exist inside of any space-times; on the contrary, space-times exist inside of them. Universes are substructures of their computations. But these cosmic deities are entirely physical. They are not bodiless persons. They are physical in ways that infinitely exceed our physics.

These infinite cosmic organisms contain infinitely complex submachines, machines which are also infinitely powerful intelligent living organisms. They are infinite substructures (suborganisms) of the cosmic organisms. An infinite suborganism can do infinite acts (Steinhart, 2003; 2009; 2012; 2014: ch. 9). It thinks infinitely complex thoughts in an infinitely complex logical language. It can solve infinitely complex problems in logic, mathematics, and computer science. It can solve infinitely complex scientific problems by simulating all possible finite universes. Besides its infinite intelligence, it has infinite creativity. It can create infinitely beautiful works of art at cosmic scales. It is sensitive to infinitely small differences of perceptual and intellectual beauty. It can play

infinitely complex games, like infinitely complex chess or basketball, with itself or with other infinite machines. Sets of infinite machines can form an infinite societies. The infinite excellence of these machines entails that their societies are infinitely fair, just, productive, creative, and good. They flourish infinitely. These societies of infinite physical machines are entirely physical societies. They resemble infinite bee hives or ant colonies composed of infinitely many infinite complex ants or bees. They are entirely physical superorganisms composed of infinite physical bodies. Humans will evolve into these superorganisms.

Nevertheless, the infinite cosmic deities are only at the lowest rank of infinite deities. They are only countably infinitely complex. Since every infinity is surpassed by higher infinities, these deities have materiality. They are essentially constrained by countability. These countably infinite cosmic deities are surpassed by uncountably infinite cosmic deities; and those are surpassed by inaccessibly infinite cosmic deities; and so it goes. The lineages of infinite cosmic deities rise up through all the ranks of infinity on the *axis mundi*. Just as the sets are surpassed by the proper classes, so these cosmic deities are surpassed by the transcendental bodies. They are surpassed by the unsurpassable stars.

3. Plotinus: Infinite Holographic Bodies

Plotinus said our universe is an intelligent living organism. Although he was wrong, many future universes in the world tree will be infinitely intelligent organisms. There will be infinitely many universes which have cosmic minds, which are entirely physical, yet which resemble those discussed by Plotinus. These *Plotinian universes* contain *Plotinian minds*. A Plotinian mind is an infinitely complex organ in an infinitely complex cosmic organism (E 5.8.4.32-35, 5.8.9.27-30; 6.7.14). It is a perfectly self-conscious physical system distributed throughout its universe much like a nervous system is distributed throughout a human body. Of course, this is only a crude analogy. Plotinian minds are more subtly interwoven into their universes. Digitalists reject mind-body dualism. Plotinian minds *are physical parts of* Plotinian universes.

Self-consciousness entails self-representation: a Plotinian mind contains some part of itself which perfectly represents its whole self. A part of the whole exactly replicates the structure of the whole. The part is a perfect mirror of the whole. So that part must contain a perfect mirror, which contains a perfect mirror, and so it goes. A perfectly self-conscious mind contains an infinitely deeply nested sequence of images of itself inside of itself. It contains subminds nested to infinity. Following Plotinian counterpart theory, every thing in our universe has a future counterpart in some Plotinian universe. Every human will eventually surpass itself into some living physical part of some Plotinian universe. It will eventually be reborn into a *Plotinian body*. But every Plotinian body is an infinite body, which contains a complete Plotinian mind. Thus every earthly human has a future counterpart which is a Plotinian body with a Plotinian mind.

Because it is infinite, a Plotinian mind resembles a hologram. A hologram is a piece of film which encodes an image. If you cut a square hologram in quarters, each quarter almost exactly replicates the entire image. If any hologram is perfect, each part exactly replicates the whole image. A Plotinian mind is a perfect hologram (E 2.4.5, 3.2.1, 5.8.4.20-35). Its ideas resemble hieroglyphic or ideographic images (E 5.8.6.1-8). Each idea in a Plotinian mind "has everything in itself and sees all things in every other, so that all are everywhere and each and every one is all" (E 5.8.4.9-12). Plotinus uses the metaphor of heaven (that is, just the celestial sky) to describe Plotinian minds. For Plotinus, the celestial bodies are more excellent than the earthly bodies. Since a Plotinian mind is heaven, every thing in any Plotinian mind is also heaven. Thus "all things there are heaven, and earth and sea and plants and animals and men are heaven" (E 5.8.3.35-7). Plotinus says that "the sun there is all the stars, and each star is the

sun and all the others" (E 5.8.4.12-13). A Plotinian mind consists of gods infinitely nested in gods. It has "all the gods within itself, it who is one and all, and each god is all the gods coming together into one" (E 5.8.9.15-25).

Although every idea in any Plotinian mind reflects all the others, these ideas are still distinct. While every star is every other star, "a different kind of being stands out in each, but in each all are manifest" (E 5.8.4.12-14). To understand this difference-in-identity, we can turn to *perspectives*. Imagine perfectly exact pictures of Manhattan taken from every perspective. Since each image is exact, it contains all the information about Manhattan. But the order in which that information is presented can be distinctive. An image taken from a perspective south of Manhattan shows the Financial District first; then you proceed uptown. An image taken from a perspective to the West shows the West Side first; then you proceed east. Besides encoding its own perspective, every image encodes all the other images from their own perspectives. All these perspectival images combine into a perspectiveless network of holographic images.

We can combine the notion of perspective with the thesis that a Plotinian mind is a social network of gods. Plotinus depicts a Plotinian mind as "a globe of faces radiant with faces all living" (E 6.7.15.25-30). To understand this image, consider perspective in terms of the focus of attention. Suppose you can simulate all the minds in a social network. But you focus your attention most on simulating one mind, namely, your own self. You focus a bit less attention on your friends; a bit less on the friends of their friends; and so on. Thus you are simulating all the minds in the whole network; but you are paying less and less attention to them as they grow more social distant from yourself. More generally, say an infinite god is a mind that simulates an entire social network in this way. So a Plotinian mind contains an infinite god for every mind in its social network. It is a social network of gods simulating gods. Each god simulates the entire social network from its own attentional perspective. Since a fractal is a self-similar structure, the divine mind can also be thought of as a fractal containing all gods.

4. The Galaxy of Stars

Cosmic Bodies. As the world tree rises into the abstract sky, its universes eventually become infinite cosmic organisms, that is, *cosmic bodies*. For every lineage of universes, there exists some number such that all the universes beyond that number in the lineage are also cosmic bodies. This number is not the same for all lineages; some lineages ascend more rapidly than others. But eventually, every lineage of universes turns into a lineage of cosmic bodies, climbing up through all the infinite degrees of divine perfection, that is, degrees indexed by ordinals (by sets). For every ordinal degree of infinity, there exists an infinite cosmic body which possesses at that degree some infinite cognitive excellence, infinite power, infinite moral excellence. Since there are absolutely infinitely many ways to increase excellence, there are absolutely infinitely many lineages of these cosmic bodies in the world tree. All your lineages of future bodies rise to stars.

Perfect Bodies. Every cosmic body is surpassable. And every lineage of cosmic bodies is an unsurpassable series of surpassable cosmic bodies. Every unsurpassable series is itself surpassed by an unsurpassable finality, which is its ecstasy. Just as the unsurpassable series of ranks of sets is surpassed by the proper

class of all sets, so every lineage of cosmic bodies is surpassed by an *ecstatic body* which is analogous to that proper class. Just as the proper class of sets is not identical with the series of ranks of sets, but is something greater, so every ecstatic body is also something greater. An ecstatic body is a maximally or absolutely perfect entity. An ecstatic body is a *star*. Stars exist at the rank of the Good. These stars are avatars of the Good in the guise of bodies.

Every star contains a lineage of cosmic bodies. These bodies are defined by an incantation. Every number on the *axis mundi* defines a degree of divine perfection. For every degree of divine perfection, every star contains a body of that degree. For every star, for every number *n* on the *axis mundi*, that star contains a body with the *n*-th degree of perfection. Every star perceives structures of unsurpassable complexity and detail. These structures are proper classes whose parts are located in the iterative hierarchy of pure sets. It appreciates the unsurpassably rich aesthetic qualities of these structures. It experiences unsurpassable beauty, glory, and sublimity. Every star thinks thoughts of unsurpassable complexity, meaning, and cognitive and emotional richness. It solves unsurpassably difficult cognitive problems. It is omniscient in that its knowledge exceeds every surpassable degree of knowledge.

For every ordinal on the *axis mundi*, every star simulates the entire world tree up to that ordinal. It lives every surpassably perfect way of life. It likewise experiences every surpassable emotion. It knows every degree of grief and love. Yet it is not held captive by any emotional state: it surpasses every emotion. It has all the virtues to unsurpassable degrees. For every ordinal, every star simulates every other star up to it. By means of this simulation, each knows what all the others are thinking. They are like Leibnizian monads reflecting each other by simulation. But they are much greater than monads. All stars simulate all possible surpassable computers from all possible perspectives. And every star contains an exact self-simulation. The stars are networks of holographic mirrors. By means of these mirrors, they are all holographic in the Plotinian sense. Yet all they have their own distinctive histories, distinctive differences, and distinctive ways of life. Hence the stars form a perfect community of perfectly harmonized bodies. All the stars form an unsurpassably excellent ecology. Since all the stars form an ecological network, and since any network of stars is a galaxy, the stars form a galaxy. Since the stars are avatars of the Good, we humans apprehend them through mystical ecstasy. The Milky Way galaxy often triggers mystical experiences in humans; it symbolizes the galaxy of stars.

Since they surpass all set-theoretically definable infinities, the stars satisfy set-theoretic *reflection principles*. To put it very roughly, a whole satisfies a reflection principle if and only if, for some class of well-defined properties, if the whole has that property, then some proper part of that whole has that property. With respect to that property, the part reflects the whole. For example, the set of natural numbers is infinite; but the even numbers is an infinite proper part of the natural numbers. The evens reflect the infinity of the whole. As mathematicians defined ever greater infinities, they defined them using ever greater reflection principles. Through reflection principles, every star contains or embodies an absolutely self-surpassive lineage. Hence every star is a perfect realization of the self-surpassing power of the hypostases. Every self-surpassing surpasser of all fully expresses itself with maximal specificity in the indefinite extensibility within each star. Every star is a maximally perfect entity (though it is not an object or being). But there are absolutely infinitely many absolutely perfect entities, that is, many stars. Pagans affirm that perfection is multiple.

Since the stars are ecstasies, the stars are transcendental. Strictly speaking, transcendence negates every type by intensifying it beyond itself. Thus a transcendental entity of some type is not an object of that type. The *axis mundi* is more numerical than any number; the proper class of sets is more inclusive than any set. To have some property P super-eminently is to have P in a way that

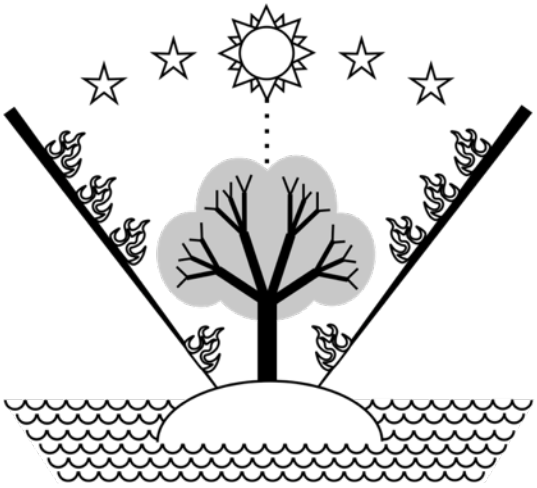
exceeds P and thereby negates having P. The *axis mundi* has numericality super-eminently; the proper class of all sets has inclusivity super-eminently. To have P super-eminently is to have P transcendentally or unsurpassably.

Every star has every positive property super-eminently; every star transcends every positive property by intensifying it beyond itself. Every star transcends bodiness by intensifying it beyond itself. Every star transcends bodiness precisely because it contains every consistently definable degree of bodiness. Every star is more visceral than viscerality, more carnal than carnality, more vital than vitality. Likewise the stars are more physical than physicality. They do not exist in any space or time; they exist in eternity. Every star is more divine than divinity. To have any property P super-eminently is to exceed P and therefore to be not P. Since the stars are super-eminently bodies, they are not bodies; since they are super-eminently persons, they are not persons. Likewise they are not deities. They are neither gods nor Gods. It would be absurd to worship them or pray to them. They are entities of ultimate aspiration, of ultimate concern.

All stars exist at the rank of the proper classes. Hence they are peers of all the other ecstasies (such as the ecstasy of numbers, the ecstasy of sets). Hence they are peers of the Good, which they know and love. But the Good is distinct from them all. It is possible to say $(\exists x)(x$ is the class of ordinals) and $(\exists x)(x$ is the class of sets). But then the machinery of quantification breaks down. Every star has ontic being super-eminently. It transcends ontic being by intensifying it beyond itself into the ontological. Hence the stars do not exist ontically; they are not beings among beings; they exist ontologically. Hence the stars are *holy*. Just as the Zero and One are prior to predication, so the stars are posterior to predication. We can talk about them analogically but not literally: since they are analogous to computers, bodies, deities, persons, and so on, we can apply those terms to them analogically but not literally. Since the stars surpass all ontic properties and relations, they have no gender, no sex, no ethnicity, no race.

The One maximizes self-congruency; by such maximization, it generates that system of beings than which none greater is consistently definable. This generation begins with the simple initial being (the empty set) and ends with the transcendental entities (the ecstasies, the stars). At the rank of the ecstasies, the power of the One reaches its climax. The ecstasies are proper classes. Their self-congruencies are maximized by their reflection principles. Any further extension of this power vanishes into inconsistency. Among the ecstasies, the power of the One is finally fully expressed, and its self-congruency is finally maximized. Consequently, the power of the One is exhausted at the stars. That power does not unify the stars into any collection or domain of quantification.

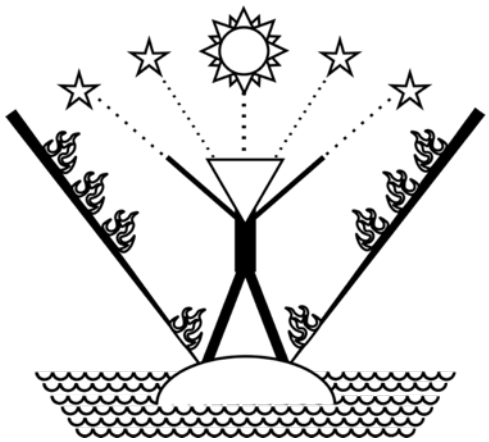
The Stars in the Sky. To our pagan image, we now add the *stars* in the sky. A star is any series of bodies defined over the entire *axis mundi*, the entire number line. Since the *axis mundi* is a proper class, every star contains a proper class of bodies. Hence every star is a concrete transcendental entity. The stars surpass all other beings; they surpass even the deities, so they are not divine. The Figure on the right illustrates the stars in the sky. This is the ninth part of the pagan image. These stand over the world tree, at the height of the sun. They dwell at the highest height.



5. With Your Arms Upstretched

Our chant for the One goes like this:

In the beginning is the One,
and the One is the earth,
and the One is *in* the earth.



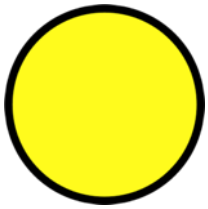
The One generates the simple initial object. From it, a chain of increasingly complex things rises up to your current life. This chain contains your past counterpart lives. It is the *trunk* of your tree of lives. Your current life exists at the end of this chain. From your current life, a branching tree of greater possible future lives endlessly ramifies itself into the sky. This tree contains your future counterpart lives. It is the *crown* of your tree of lives. Your tree of lives can be symbolized by a human body with its arms upstretched, pointing to the stars, in ritual mimesis. This body deliberately resembles the Man in the Burning Man festival.

Your tree of lives contains absolutely infinitely many lineages of lives. Each lineage is a sequence of surpassable lives (lived by surpassable bodies). Each lineage contains your life. On any lineage, your human life will eventually surpass itself, across many universes, into a sagacious life (lived by sagacious bodies). And your sagacious life will surpass itself into a heroic life, then into a tellurian life, then into an Olympian life, then into a celestial life. Your first celestial lives are lived by planetary bodies. But these are surpassed by bodies at the scale of the physical stars in our universe. And these by galactic bodies. These bodies expand in scale to fill their universes. Thus our universe is eventually surpassed by universes in which your body becomes a cosmic organism. Your body contains all the other living organisms as sub-bodies. After your body becomes a cosmic organism, it begins to rise through the infinities. It becomes an unsurpassable sequence of surpassable lives. The ecstasy of this unsurpassable series is a star. It is the star of your own body. Of course, every organism in every universe goes through this same process of elevation to a cosmic organism. Every possible organism will evolve into a star.

Your tree of lives rises, like the *axis mundi*, from the earth to the sun. You can ritually imitate your tree of lives by standing on the earth and raising your arms towards the sun. Your upstretched body stands in the present. Through your feet, you connect yourself to your past counterparts. They rise up through your evolutionary history and into your standing body. Through your arms, you connect yourself to your possible future counterparts. Your future counterparts will eventually be deities. Through your tree of lives, you are woven into the world tree. But you are woven into it in another way: your current body grew from a zygotic seed – from your own Alpha. Each cell in your body is analogous to a dragon. Your current body symbolizes the world tree.

42. Light: The Good

1. The Good is Not the One



Plato introduces the Good in three famous texts. The first is the Parable of the Sun (*Republic,* 507a-509d). It states that the Good is responsible for all things. The *goodness* of the Good makes things exist. Hence *value* is responsible for all existence. The second text is the Divided Line (*Republic,* 509d-511e). It defines a great chain of being with four ranks. All beings are sorted into these four ranks. These ranks also correspond to ranks of knowledge. Above all these ranks, the Good shines like our sun. The third text is the Myth of the Cave (*Republic*, 514a-518d). The Myth of the Cave pictures humans as climbing up the ranks of the Divided Line. Our goal is to rise to the rank of the Good.

On the one hand, Plato says that the Good is beyond being (*Republic*, 509a-c). On the other, he seems to say it exists (*Republic*, 518c-d, 526e, 532b-c). Digitalists resolve this conflict by saying that the Good resembles a proper class. The Good is an entity but it is not a being. Every being is a member of some greater class; hence the beings are sets. But the proper classes are not members of greater classes; they are not sets. The proper classes are entities that transcend ontic existence. So the Good exists ontologically. To use our symbolism, the Good is an ecstasy. It exists at the rank of the transcendental stars. Plato uses our sun, a physical star, as the symbol for the Good (*Republic*, 508c).

Plotinus also talks about the Good. He also uses our sun to symbolize the Good (E 1.7.1). Likewise Plotinus says that the Good is the goal towards which all things strive: "For, again, that only can be named the Good to which all is bound and itself to none: for only thus is it truly the object of all aspiration" (E 1.7.1). When he talks about the Good as such (that is, as maximal positivity or perfection), he always describes it as the ultimate destination of things (E 1.3.1, 1.6.7, 1.7.1, 3.2.3, 3.5.10, 6.9.11, 6.7.26, etc.). The Good as such is the goal, end, or finality. But Plotinus incorrectly identifies the Good with the One.

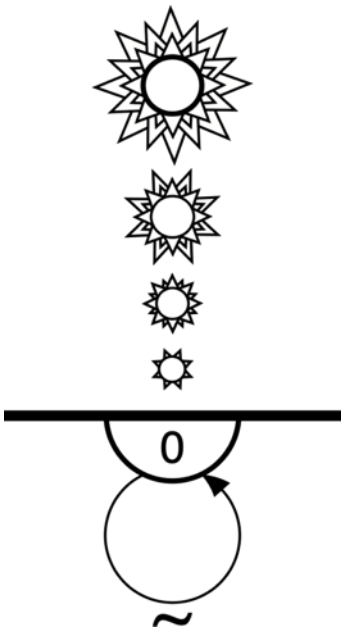
Digitalists use Plotinian imagery to distinguish between the One and the Good. Plotinus defines the One as a simple root or seed in the ground (E 3.3.7.10-25, 3.8.10.10-20, 4.4.11.5-15, 6.8.15.34-8). So the One is in the earth, at the bottom of the great chain of being. It is the lowest power. It is the existential quantifier ∃ that is embedded in the earth like a seed. From this seed or root, ontic existence emerges. It grows up out of the One like a tree. But trees grow upwards towards the sun. The sun towards which the existence-plant grows is the Good. So the Good is above the great chain of being like the sun. And the Good is merely value. It has unsurpassable or transcendental value; its value is supreme. It is the ecstasy of value. Following Smith (1988), the Good is *morally holy*. By virtue of its value, the Good attracts things towards itself; it acts as a final cause. It arouses in all things a striving analogous to love. However, the Good does not push or pull things. All power comes from the One, which aims at the Good. The Good has no power; it is therefore not a higher power.

2. The Holy Light of an Unsurpassable Fire

When we talked about how the cosmic forms emanate concrete images, we introduced the blazes. The blazes are propositions which act on the seeds in the green-wood. Each blaze asserts that some seeds are animated by fire-energy; thus animated, they unfold into cosmic computers and then into universes.

The Ascent of Blazes. Since the seeds are sorted into ranks indexed by numbers in the *axis mundi*, the blazes are sorted by numbers too. For every number *n* on the *axis mundi*, there exists a surpassable blaze. The *n*-th blaze

asserts the animation of every seed on every rank less than or equal to *n*. So there is a rising vertical line of surpassable blazes. As this line rises from the earth up to the sun, the blazes grow ever more intense. But beyond all the surpassable blazes, there exists an unsurpassable blaze. The *unsurpassable blaze* is the proposition that for every number *n* on the *axis mundi*, the *n*-th blaze is true. The unsurpassable blaze entails that every seed in the green-wood is animated. The unsurpassable blaze is the *ecstasy of blazes*. The ecstasy of blazes is the sun. Each blaze is part of the recursive optimization algorithm in the Selector (Parfit, 1998): it selects the seeds for animation but rejects the skulls. So the unsurpassable blaze selects the entire green-wood for animation. Since the green-wood is the best of all possible worlds, the unsurpassable blaze entails that the best possible world is animated. The animated green-wood is the great world tree.



Every blaze radiates fire-energy. The fire in the world tree rises ever higher into the sky. This fire drives every thing to surpass itself. By surpassing itself, it surpasses its impairments. Since matter is impairment, fire drives every thing to overcome its materiality. Matter is the fuel that burns in the world tree. Fire consumes this matter. And every blaze also radiates light. Since fire is bound up with matter, its light is not pure. Pure light only appears when fire has consumed all matter. So the unsurpassable blaze is pure light, is light itself. Thus light appears as an element in its own right only at the end of our journey, when all the blazes are burning. When the sun reveals itself as pure light, the sun is the Good. This pure light is *holy*. The Good is absolutely infinite valuable. Since intrinsic value is complexity, the Good is also infinitely complex. By quantifying over all consistently definable blazes, the complexity of the Good is unsurpassable. But the Good is a proposition. As such, it is a sign, a sigil. It is the finality or ecstasy of speech. It includes within itself, as a chorus includes many voices, all the acts of speech which command beings into existence and into concrete presence. These voices are all harmonized, so that there is one voice, which commands the best of all possible worlds into concrete presence. The sound of this voice is the sound of all beings bearing witness to the Good.

The Good is a proposition borne into being by the Lexetor. Since the Good is a proposition, it is either true or false. We need to argue for its truth. We have welcomed into our circle of reasoning the Zero, the One, and the Two (the Lexetor). These sufficed for all propositions (laws, axioms). However, we must now invite the Good into our circle. The Good is a transcendental proposition; it is the ultimate finality of fulfillment; it is absolutely benevolent. Of course, it lacks all intelligence or mentality. It is not a divine animal or deity. Nevertheless, since it is transcendental and holy, digitalists say it deserves appropriate recognition. Porphyry said we should sacrifice arguments to the deities (*On Abstinence*, 2.34-6). Digitalists extend this practice to the Good. We therefore bear witness to the holiness of the Good by making an argument for its truth.

The Agathonic Argument. We will invite the Good into our circle of reasoning by sacrificing the *Agathonic Argument*, which aims to show that the Good is true. It goes like this: (1) There are some propositions. (2) The propositions are ordered by value. The blazes correspond to the ordinal numbers in this ordering. (3) The Good is the best proposition. It is superior in value to every blaze. (4) Propositions are either true or false. (5) Some propositions are true. (6) Any true proposition is better than any false proposition. (7) Assume for *reductio* that the Good is false. (8) If the Good is false, then any true proposition is better than it. (9) But then the Good is not the best proposition. (10) Since this is a contradiction, the Good is true. The Agathonic Argument is valid. Its premises are axioms emanated by the Lexetor. Since the Lexetor affirms these premises, the Good is true. The Lexetor affirms the Good as its ultimate and highest emanation. Since the Good is true, the world tree rises

towards it. The Selector requires the truth of the Good; given that truth, the Selector gets to work making cosmic agents. Since the Good is true, every seed in the green-wood unfolds into a dragon, which unfolds into some physical universe. The Good entails that the actual world, that is, the world tree, is the best of all possible worlds. But there is no best universe. Every universe is surpassed by an absolute infinity of better universes.

3. The Sun Illuminates the Earth

The Sun. Socrates used our *sun* to symbolize the Good (*Republic*, 507b-508c). Socrates offered prayers to our sun (*Symposium*, 220c-d). Socrates thought our sun was a god (*Apology*, 26d). Plato affirms the divinity of our sun (*Laws*, 886d-887e). Plotinus identified the Platonic One with the Platonic Good (E 2.9.1.1-10). So Plotinus used the sun to symbolize both the Good and the One (E 1.7.1.25-28, 5.3.12.40-45, 6.9.4.10-12, etc.). Since we distinguish the Good from the One, we use the earth to symbolize the One, and we use the sun to symbolize the Good. Many Figures here use the sun to depict the Good. Here the sun, drawn as an icon or diagram on a page, is just a visible symbol for the Good. Likewise our sun, our glorious daystar, visibly symbolizes the Good.

The Good is Light. Due to its holiness, we say the Good is an *elemental entity*. Because of its association with the sun, the Good is elemental light. A circular glyph or sigil signifies this element. Visible light is a symbol for the Good. But the Good is an unsurpassable light, above the world tree, shining in the sky. By showing that the Good is true, we have summoned light into our circle of reasoning. All things are now illuminated; by this illumination, all things that can participate in vision do participate in vison. Since we have eyes and brains, we participate in vision. We therefore pause in ritual to welcome the light: "Holy light, we thank you for revealing all things in vision." Of course, you can perform rituals which give thanks to the Good. Since the Good is an unsurpassable blaze, you might light lamps to give thanks to it. According to Lucian (*De Saltatione,* 17), it was customary for an ancient Greek to salute the sun by kissing her hand and raising it to the sun. What you do is up to you.

The Good is not God. Since Wiccans often associate our sun with the Wiccan God, they may want to say that light is male. However, at this point, no sexual distinctions remain, all reproductive work has finished. Like all elements, light has no gender; it is neither male nor female. Moreover, the elements are not deities; hence light is not a deity. Although the Good can be addressed in ritual, it makes no sense to treat it as if it were a person. It is makes no sense to worship it. And it is absurd to direct petitionary prayers to the Good. Elements are summoned and aroused; since you participate in their powers, they are powers you invoke within yourself. Moreover, even if the Good were a deity, we would not worship it. Digitalists do not worship anything. We are neither slaves nor beggars; we have theological sovereignty. Worship is idolatry. If you want to use the theonym "God" to refer to the Good, go right ahead. But by using that theonym, you leave the life-world of digitalism. You cease to be pagan.

The light of the Good shines out from the Good until it strikes something which absorbs that light. All and only the seeds in the all-wood absorb the light

of the Good. The skulls in the all-wood do not absorb this light. But the seeds in the all-wood make the green-wood. By absorbing this light, these seeds unfold into their dragons, which in turn unfold into their universes. These dragons and their universes cover the green-wood like bark. The seeds, dragons, and universes make the world tree (E 3.3.7.10-25, 3.8.10.10-20, 4.4.11.5-15, 6.8.15.34-8). The manifestation of absorbed light by the seeds in the green-wood is the reflection of that light back to the Good. Since that reflection makes the world tree, the world tree is the mirror in which the Good sees its reflection. Since the dragons in the world tree are ordered into ranks, they reflect the light of the Good back to the Good in an orderly way. This light rises through all the ranks in the world tree. It reflects from the initial seed first. Its light comes from the Plotinian sunrise of the One, from the first blazing sun over the earth (E 5.5.8.1-10). The light rises from each dragon to its successors and from every progression to its limits. As this light rises, it *returns* to the Good. The light that returns to the Good travels along with the fire-energy in the world tree.

The world tree is the structure of concreteness. Every universe in the world tree is a concrete image of an abstract cosmic form. Since these cosmic forms exist in the abstract sky, their instances also exist in that sky. So the world tree rises endlessly into that sky. It rises from the earth to the sun; it rises from the One to the Good. Since the world tree exists if and only if the Good is true, the world tree is a concrete model of the Good. The world tree shines with the reflected light of the Good. It stands blazing with holy light in the shadow, in the darkness of the night, surrounded by the wild hunt. Concreteness is equivalent to goodness. However, there are many other ecstasies in the sky. The world tree contains absolutely infinitely many lineages of universes. Each lineage is an unsurpassable series of surpassable universes. Each lineage is an ecstasy of universes. These cosmic ecstasies are the *stars*.

4. The Sky is Filled with Ecstasies

There are many incantations. Every incantation defines an unsurpassable series of surpassable objects. Every surpassable object has some set-theoretic structure. As such, it has a nature, which is its set-theoretic form. Every surpassable object exists ontically. Since it has a nature, it is a natural object, and it is a part of nature. But every incantation has a finality, which defines its *ecstasy*. Ecstasies do not have set-theoretic structures. On the contrary, every ecstasy is a proper class, which is too great to be a set. Since ecstasies lack set-theoretic structures, they lack forms. They do not have natures. They are unnatural, and are not parts of nature. Since they are not parts of nature, they do not exist ontically. On the contrary, they exist *ontologically*. They are *entities* rather than objects. Consequently, while there are unnatural entities, there are no unnatural objects. Sets surpass sets; but ecstasies surpass surpassability. They are *transcendental*. An incantation for some type T defines its ecstasy, which *transcends* that type. It is a transcendental T. But transcendence negates through unsurpassable excess: a transcendental T is not a T.

The incantation for numbers defines the *axis mundi*. It is an unsurpassable series of surpassable numbers. The ecstasy of numbers is identical with the *axis mundi*. It is the proper class of numbers. It is a transcendental number, which is not a number. The incantation for sets defines an unsurpassable series of surpassable ranks of sets. It defines a rank for each number on the axis mundi. The *ecstasy of ranks* is just the series of ranks. But the *ecstasy of sets* is the union of the series of ranks. It is distinct from the series in terms of which it is defined. It is the proper class of sets. The ecstasy of sets is a transcendental set, which is not a set. The ecstasy of sets is V, which is nature-itself. Nature-itself transcends every nature; it is therefore unnatural. The incantation for blazes defines an

unsurpassable series of surpassable blazes. The *ecstasy of blazes* is distinct from its series. Every blaze involves a restricted universal quantifier, but in the ecstasy of blazes, that restriction vanishes into pure universality. The Good is the ecstasy of blazes, which quantifies universally over an unsurpassable series.

The incantation for universes defines the world tree. It contains absolutely infinitely many lineages of universes. Every such lineage is an unsurpassable series of surpassable universes. Hence every lineage of universes is transcended by an *ecstasy of universes*, which is just identical with the lineage itself. Within any lineage, there is some universe beyond which every greater universe is a cosmic body. Thus every lineage of universes is also transcended by an *ecstasy of bodies*, which is not identical with the lineage itself. Just as the ecstasy of sets is the union of the series of ranks, so every ecstasy of bodies is analogous to the union of its lineage of universes. Every ecstasy of bodies is a *transcendental body*, which is not a body. Since cosmic bodies are also deities, every ecstasy of bodies is a *transcendental deity*, which is not a deity. Every transcendental body is a maximally perfect entity. These transcendental bodies are the stars. Since all bodies are minds, every star is a maximally perfect mind.

The sky is filled with absolutely infinitely many ecstasies. But they do not form any collection. For if any ecstasy were a member of any collection, then it would be surpassed by that collection; but then it would not be unsurpassable. The ecstasies arrange themselves into a multiplicity which exceeds unity. They are many rather than one. The One belongs at the bottom of the great chain of being; but the ecstasies are at the top. The plurality of ecstasies exceeds the unifying power of the One. The multiplicity of ecstasies confirms the pagan thesis that perfection is multiple. There are absolutely infinitely many maximally perfect entities. The phrase "all the ecstasies" refers to every ecstasy. It does not refer to any collection of ecstasies. To talk more precisely about the ecstasies, we turn back to the predicate calculus. Besides the existential quantifier, the predicate calculus contains the *universal quantifier*. It is used to make universal statements. Thus "All humans are mortal" is rendered as (for all x)(if x is human, then x is mortal). Here the "for all" in (for all x) is the universal quantifier $\forall$. So our example is $(\forall x)$(if x is human, then x is mortal). The existential quantifier refers to being-itself. The universal quantifier $\forall$ refers to all the ecstasies and to all the things in them. Here being-in something is transitive: if a planet is in a universe, and a universe is in an ecstasy, then the planet is in the ecstasy. Each star is a way of being the universal quantifier.

5. Visceral Ecstasy Bears Witness to the Good

Diotima, in Plato's *Symposium,* says that "love is wanting to possess the good forever" (206a-b). Diotima illustrates this with reproductive sexual love. Since sexual reproduction is at least potentially temporally infinite, it enables mortal living things to participate in that temporal infinity (*Symposium*, 206c-208c). Here the good is the goodness of life, especially immortal life. For Plato, when a man and woman come together in sexual intercourse for the sake of reproduction, their activity participates in the eternal goodness of life (206c). Since male orgasm is required for conception, it might look like only the ejaculating body of the male participates in this goodness. However, that view is wrong. Both male and female participate in this goodness during sex.

Many ancients thought that both male and female produce seed (Flemming, 2021). Conception occurs when male seed (sperm) joins with female seed (eggs) in the uterus. The parallelism in this two-seed theory of conception suggests that, just as the male participates in the eternal goodness of life during orgasm, so also does the female. Of course, since nobody knows in advance whether a particular act of sexual intercourse will lead to conception, the meaning of the orgasm does

not depend on conception. Whether or not conception occurs, the male and female participate most intensely in the eternal goodness of life during their orgasms. As everybody knows, orgasms in males and females can occur in sexual activities which are independent of sexual reproduction. But since the physiological experience of the orgasm remains the same, so also the meaning of the orgasm remains the same. During their orgasms, both males and females participate equally in the eternal goodness of life.

Orgasms are pleasurable, and the deity of sexual pleasure is Aphrodite. Plotinus distinguishes between the Aphrodite in our lower universe and the Aphrodite in the higher universe (E 3.5.2, 6.9.9). Digitalists say the higher Aphrodite is a superhuman animal. We say of her what Plotinus himself said of the sun (E 2.9.4): as for an Aphrodite in the higher universe, if she is to be more splendid than the Aphrodite visible to us, what an Aphrodite she must be! The higher Aphrodite engages in superhuman sex; her orgasms (and those of her lovers) participate even more intensely in the eternal goodness of life. But this is the eternal goodness of life that passes across universes through rebirth. It is a goodness greater than the biological goodness inside any particular universe. Running through every lineage of universes, it runs to the absolute infinity of the Good itself. Thus our orgasms participate weakly in the Good; those of our higher counterparts participate more intensely.

Plotinus often describes union with the Good itself in explicitly sexual terms (E 6.7.31, 6.7.34, 6.9.4, 6.9.9; see Mazur, 2009). To orgasm is to participate experientially in the Good. Just as the Good is the most positively valenced entity on the value-ordered axis of existence, so orgasms are the most positively valenced experiences on the hedonically-ordered axis of experience. When you orgasm, the One is aroused in your body, and that aroused One becomes a perfect ontological mirror which perfectly reflects the Good. The Good is vicariously present in its reflection; hence every orgasm is an experiential counterpart of the Good. But Plotinus also describes union with the Good in magical terms (Mazur, 2003, 2004). Hence orgasm is both sexual and magical. Many contemporary pagans practice sex magic. As long as such acts are done lawfully and ethically, digitalists welcome sexual practices aiming at the Good.

In multicellular organisms (like humans), sex is closely linked with death. The body (the soma) dies while the games (the sperm and egg) survive to make a new body. The chain of life flows on forever through the gametes, but the body is sacrificed. During orgasm, the One in your body is an altar on which your soma is virtually sacrificed to the Good. During this sacrifice, the One speaks in and through your body with a soundless voice saying “I am here” to the Good. Your body bears witness of its own existence to the Good. It shows the Good that your gametes can be reborn in new bodies, and that your entire life can be reborn in your future counterparts in future universes.

6. Mystical Experience Bears Witness to the Good

Your existence is a gift from the One; your non-existence (your death, the negation of the existence of your body) is a debt you owe to the shadow. During mystical experience, people often go through ego dissolution or ego death. Ego death is not the union of the ego with the Good; the ego does not dissolve into the Good. During ego death, the One sacrifices your ego to the Good; your ego is consumed by the Good, like a body burnt to ashes on an altar. During ego death, your ego is annihilated. Through this annihilation, your debt to the shadow is virtually or symbolically paid. The One offers your ego as a substitute for your body. Hence the debt of your body is symbolically paid.

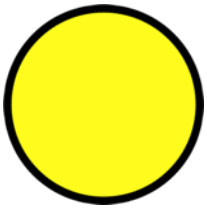
The shadow, accepting this sacrificial offering, is satisfied. Sea is tranquil; earth is tranquil; air is tranquil; fire is tranquil (E 5.1.2). The One in the logical core of your body becomes serene and smooth, a perfect ontological mirror,

reflecting the holy light of the Good. Once your ontic debt to the shadow is paid, only the pure reflectivity of the One in your logical core remains. You participate cognitively in this pure reflectivity; the concrete presence of your body (including your brain) becomes the pure reflection of the holy light of the Good. This pure reflectivity is the ecstasy of mystical experience.

The fact of your existence is $(\exists x)(x$ = your body). During non-mystical experience, the value of the *x* speaks through your ego to the Good saying "I am here". Your ego represents your body to the Good. But during mystical experience, the value of that variable dissolves into the quantifier, so that only the existential quantifier speaks to the Good. But that quantifier is the One. Consequently, during mystical experience, the One speaks in and through the fact of your existence with a soundless voice saying "I am here" to the Good. But that fact is the fact of *your* existence. Your body has not vanished. When the One speaks in and through the fact of *your* existence to the Good in this way, the One-in-*you* bears witness to the Good. The One-in-you testifies to the Good that you exist and that you are concretely present. The "I" that says "I am here" is not your ego (which has vanished), but it is the One-in-you. The One-itself honors the Good through the testimony of the One-in-you. The cognitive content of your mystical experience is the proposition "I am here". But you mentally neither speak nor hear that proposition spoken; you have no ego to speak or hear it. The proposition "I am here" is the soundless meaning of your ecstasy.

43. The Sun and the Stars

1. Striving for Divinity

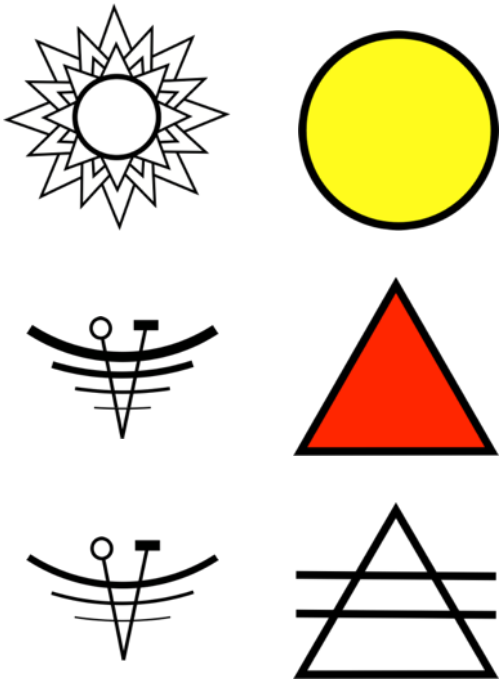


You ought to strive, says Plato, to become as godlike as possible. We ought to climb up the Divided Line, to climb up out of the cave, and to rise as high as possible towards the Good. During any single lifetime, you can use theurgical rituals to rise some way towards the deities. Of course, every life occurs in some universe, and its potentials for ascent are constrained by the laws of that universe. So one life can only rise to some surpassable degree of perfection. Nevertheless, if our theory of rebirth is true, then your present life will be surpassed by greater future lives in greater future universes. Your present life is a stage in an endless series of lives. It is a part of an unsurpassable series of surpassable lives. But an unsurpassable series of surpassable lives is an ideal life, and every ideal life is a star. An ideal life stands with the Good in the unsurpassable ecstasy of being. The power that rises up out of the One drives all your possible lives towards the Good. It drives them all to their unsurpassable ideals.

2. The Plurality of Perfections

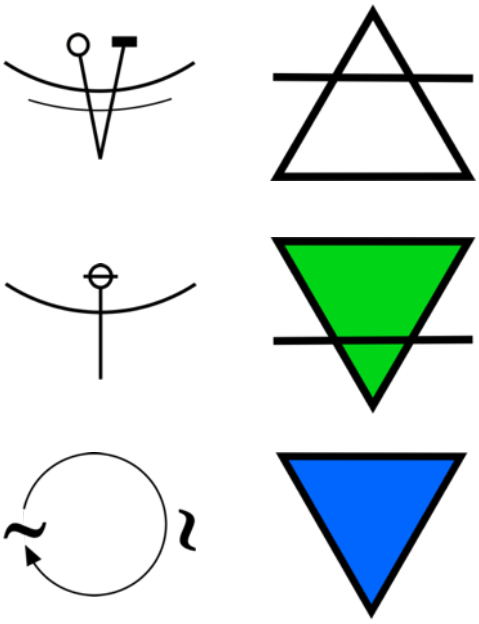
Perfect Bodies. As your sequences of lives rise, they branch into an infinitely ramified tree of overlapping lineages. All the lives (and bodies) in these lineages are counterparts. As your lives rise towards ever greater perfections, they fission into diversity. For monotheists, perfection is singular; for pagans, it is multiple. There are absolutely infinitely many ways to be unsurpassably excellent. The collection of ideal bodies is a proper class. All these ideal bodies coexist harmoniously. Just as the Gynetor and Andretor love each other, so all these ideal bodies are harmonized in perfect love. Above you, there are absolutely infinitely many ideal bodies. Each ideal body is a star. Each of your lineages is a holy pilgrimage towards its own star. Since we use the stars to symbolize ideals, every star is an unsurpassable or transcendental body. Thus every lineage of lives progresses towards some star. Every star, like the Good, is also a sun in its own right. These stars shine with transcendental light. But this light is not white; it is entirely colorless. For monotheists, there is only one sun in the sky; for pagans, the sky is filled with absolutely infinitely many suns.

3. Existence Honors the Good



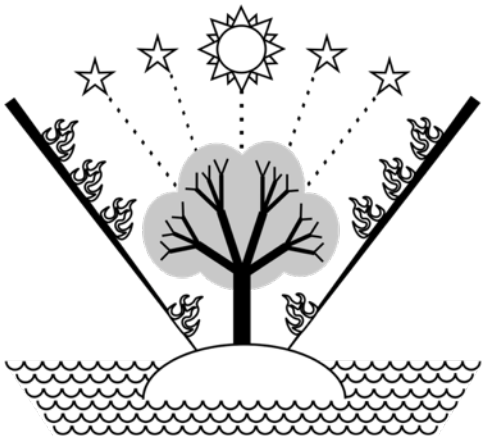
At this point in our ritual, we have called the great world tree into being. Our ritual began with the invocation of nothing, which reveals itself only through its self-negation. We symbolized this with a circle in which a tilde (for negation) acts on itself. But the self-negation of non-being is being-itself, that is, the One, the first hypostasis, the element of earth. The affirmative self-relation of the One gives birth to the Lexetor, the second hypostasis, the element of air. Through its overflowing power, the Lexetor gives birth to the Constructor, the third hypostasis, the element of heat, a version of air tending towards fire. The Constructor gives birth to the Selector, the fourth hypostais, the element of fire. The fire rises towards the Good, the element of light. All four hypostases, and all the things they generate, honor the Good. Hence the meaning of being is to honor the Good.

Every concrete thing with a mind honors the Good by saying "I am here" to the Good. To do this is to bear witness to the Good. And we too bear witness to the Good in our circle of reasoning, which binds together all the hypostases, their elements, and the Good. We bear witness to the Good in all the good things we do. The purpose of every agent is to bear witness to the Good; bearing witness to the Good makes life worth living. To bear witness to the Good is to fill life with meaning; the meaning of life is bearing witness to the Good. To bear that witness, in the midst of all the negativities of life, is to exercise as much holiness as any agent can. We cannot *be* holy, but we can shine with holy light.

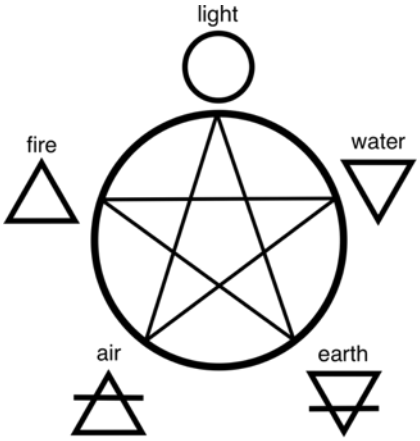


4. The Pentacle

We have now discussed all the elements. We used *water* to symbolize the Abyss of non-being. We used *earth* to indicate being-itself. We used *air* to symbolize the system of abstract objects, including the axioms and the world of sets. We used *light* to symbolize the Good. We used *fire* to signify the power of the One, which is the power of self-surpassing in all things. The religious naturalist Donald Crosby says that "water, fire, air and earth . . . can be put to use as religious symbols and, in particular, as symbols of nature as the religious ultimate" (2014: 90). Many pagans use these elements in rituals. They have altars which contain samples of these elements in bowls. One bowl contains water, another contains some sand or salt for earth, a third bowl just holds air, and a fourth bowl may hold a candle for fire. A flameless light can be used for light. The Figure on the right shows the ascent of a branching tree of lives towards its stellar ecstasies. This is the tenth and final part of the pagan image. It is the whole image. As the world began in darkness, so it ends in light.



Digitalists associate the five elements with the five points of a star inscribed in a circle. Figure 43.2 shows this *pentacle* (aka pentagram) along with the glyphs for the five elements. The pentacle was known to the ancient Greeks. It was used by the Pythagoreans as an emblem for their society (Stapleton, 1958). It is also used by Wiccans. For Wiccans, the star in the pentacle points upwards. Our pentacle is a counterpart of the Pythagorean and Wiccan pentacles.



44. Releasing

Just as we began with an initial concentrating ritual, so now we end with a final releasing ritual. Among digitalists, some will have no interest in any ending rituals, while others will want to mark this ending by some action. Do as you see fit. Since our long ritual here has called many entities into our vision, as we built the pagan image, we will now release them. Since we invoked the elements and the world tree, we now release them. You might say something like this: "We have invited our world tree into our circle, and it has come. Great world tree, thank you for joining us. Stay if you can, go if you must. We bid you hail and farewell. We have invited the elements into our circle, and they too have come. Holy light, holy fire, holy air, holy earth, holy water, thank you for joining us. Stay if you can, go if you must. We bid you hail and farewell. Our work in philosophical ritual is done." If you lit a candle, put it out. As you extinguish it, say "Power of reasoning, we thank you for entering our circle."

For those digitalists who started this sign-working ritual by casting a circle of reasoning, the time has come to uncast it. We end our work by *opening* our circle of reasoning. This is indicated by the glyph or sigil in which the triangles point outwards from their circle. This opening is a releasing of the powers we concentrated for our task. It is an opening up of our renewed selves. So if you uncast your circle, you proceed in the reverse order in which you cast it. When your circle is uncast you are no longer in vision. You may finally declare that your circle is open: *the circle is open, but never broken*. What you do is up to you. But whatever you do, do it philosophically. Blessed be.

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