

Conor Cunningham

HOMO EX MACHINA:
THE NIGHTMARE DREAMS

The Western mind is held captive by the hegemonic idea of a base upon which all else is erected. This fixation amputates the imagination, stymies thought, and limits disciplines, both intra and inter. Moreover, it encourages forms of fundamentalism, scientific, religious and philosophical, in both professional and populist manifestations. Our thesis is that there is no such base, while at the same time, fundamentalism's sheer opposite (the pure flux of relativism) is crucially also precluded. Modelling our approach on that of effective theory, somewhat analogous to Nietzsche's idea of *wirkliche Historie*, but more precisely as employed in physics; we develop a theology of *mixis* that generates a more fecund alternative, especially as it relates to the person.

Keywords: Fractional Quantum Hall Effect, Aquinas, Plato, Aristotle, emergence, reduction, layer cake, mixis, methexis, effective theory, tripartite anthropology, mixed relation, dualism, reductive materialism, human soul, zoology, ascent, descent, actuality, potentiality.

For Alexei Bodrov, with thanks

PRELUDE

A scientist, theologian, and a philosopher walk into a bar. They sit, waiter comes, and drinks are ordered. The philosopher leans back on their seat and offers up something of a soliloquy (we've all been there, as victims and perpetrators).

The Western mind is held captive by the hegemonic idea of a base upon which all else is erected: The atom, the brain, the Bible, the gene, the cosmos, the flux. But this fixation amputates the imagination, stymies thought, and limits disciplines, both intra and inter. Its Turtles all the way down, and all the way up. There is no basem, nor a ceiling to existence.

One of the other two nod at this testudinal regress. With a glint in their eye, the philosopher produces their denouement:

Atlas hangs as much as he holds.

The theologian exclaims excitedly: *That just what I was thinking. Methexis, participation,*

Great minds think alike, – announces the philosopher.

Fools think likewise, – warns the scientist knowingly.

That's just what I was going to say, – exclaim the other two in unison.

The waiter comes to the table with the bill, all fall silent.

INTRODUCTION: THE END OF HUMANS

Ludwig Feuerbach argued that theology is anthropology. He is, I would argue, utterly correct. Of course, Feuerbach's intention is, largely speaking, critical insofar as his diagnosis is deflationary. In other words, theology is nothing *but* anthropology, there being no remainder, nothing left for theology; it being emptied of content. God was simply a projection of what is best of the human: goods become the Good, and we name this God, and the function it provides – religion (*religare*, “to bind”). As irony would have it, his own thinking was later eviscerated by the Masters of Suspicion (so named by Paul Ricoeur) – Marx, Freud, and Nietzsche (and Darwin arguably). Feuerbach had opened Pandora's Box, letting the genie of complete critique out of the bottle, so to speak. The problem was that he still presumed there was such a thing as the human, but the human was now itself reduced, rendered an epiphenomenon as it was now a product not a producer; a projection and not the one projecting. This was the end of freedom, as it was the end of the human.

In Freud we have the economy of desire (the currency of which was sex); in Nietzsche, the economy of power (the currency of which was will); lastly, in Marx, and class struggle (the currency of which is, of course, money). Forget God being but a chimera: Man now looked in the mirror like a Magritte painting (e.g., *La reproduction interdite*, 1937) and saw only the back of his own head, or what they took to be the back

of their own head, but in fact was not. There was now no back or front, except arbitrarily: Matter and its equivocal aggregations articulated in its own univocal language was all to be had. As Robert Spaemann puts it, “man has become an anthropomorphism to himself”¹. This is what we term *Homo ex machina*. Yet there was a longing in Feuerbach, to be fair, consequently a frustration, an impatience with cowardly theologians of his time. “Beatitude is the last word of religion and theology. But what is beatitude? Sensibility as the object of phantasy and feelings. The assertion that Christianity wants only spiritual beatitude is a shameless lie of modern hypocrites or ignoramuses. Christianity differentiates itself from philosophical paganism ... precisely in that it formulates a carnal, i.e., a sensible beatitude and immortality as ultimate end and essence of humanity”².

In a bid to answer Feuerbach’s complaint we advocate a theology that consists in a symphonic union of four key terms or concepts: mixed relation, *mixis*, tripartite anthropology, and participation. A mixed relation (the union of a real and logical relation – creation is real for us, but logical only for God); the ancient idea of *mixis*, an English rendering of the Latin past participle *mixtum*, which simply means a union of previously separate ingredients. Mixture is, of course, multivalent: *mixis*, *krasis*, *syntheton* and *plekō*, and so on. According to the Stoics there are three types of material arrangement: “fusion (σύγχυσις)”, “juxtaposition” (παράθεσις), which only affords aggregation, and blending (κράσις), in which ingredients are preserved, yet there is interpenetration (ἀντιπαρεκτείνω / ἀντιπαρήκω). In comparison, any true *mixt*, for Aristotle, must be a homogeneous mixture, a homoeomer³. If the ingredients persist unaltered then there is only an atomistic aggregate or juxtaposition. Yet, at the same time, if there is complete destruction then there is fusion and not mixture, which is to say, there cannot be mixture if the ingredients are not at all (*holōs ouk ontā*). Some other thing which comes to be (*gegonos*) from them is actually (i.e. the mixture), while each of the things which were, before they were mixed, still are, but potentially,

¹ Robert Spaemann, *Essays in Anthropology: Variations on a Theme*, Eugene, OR: Cascade, 2010, p. xxiv.

² Ludwig Feuerbach, “Wider den Dualismus von Leib und Seele, Fleisch und Geist” [1846], *Gesammelte Werke*, ed. Werner Schuffenhauer, Berlin, 1989, 10, p. 147. John Updike updates such an insight in his poem *Seven Stanzas for Easter*.

³ *De generatione*, 1.5.321b17-22; 1.10.328a3-14; and 2.78.

and has not been destroyed (*ouk apolōlota*). A *mixis*, therefore, involves a union of previously separate ingredients; something new emerges, yet the ingredients are preserved, virtually, but not actually, something we realise by the last condition, namely that they are separable (*chōrizesthai palin*)⁴. Aquinas agrees, arguing that ingredients are present *virtutē*. Interestingly, Aquinas never uses the adverb *virtualiter* or the adjective *virtualis*, but rather the noun *virtus* in its nominative and ablative forms. The ingredients of a substance remain a real power⁵. For Aristotle and Aquinas, being in a *mixis* is to be and not to be⁶. This is analogous to the human as *mixis* of both soul and body, and more, woven or mixed with the divine as source of the soul. As Gregory Nazianzus says, “What is greater for human lowliness than to be woven (πλακῆναι) with God, and to become God from the mixture (μῖξεως)?”⁷ It would seem here, that Gregory has rendered the verb and noun synonyms, despite having different roots⁸. Aquinas echoes this idea of the human as a *mixis*: “Man is said to be [composed] from soul and body, as from two things some third thing is constituted which is neither of those [two]; for a man is neither soul nor body”⁹. They are person. In a lovely turn of phrase, Schneider says (as does Bazán), “The body is the visibility of the soul, because the soul is the actuality of the body”¹⁰. Therefore our bodies are manifestations of the soul, the face of the soul, as it were¹¹. This is most certainly true, yet conversely the soul is the *utterance* of the body, its *mousikē*. Together, beyond union, and lived in the spirit, they emanate a halleluiah even: “Take eat this is my body, which is given for you”. But we are getting ahead of ourselves. Plato rightly insists that “We ought

⁴ *De generatione*, I.10, 327b27-29.

⁵ On this see Chris Decaen “Elemental Virtual Presence in St Thomas”, *The Thomist*, 64 (2000), pp. 271-300.

⁶ DG I.10, 327b23ff).

⁷ Or.30.3.

⁸ See Andrew Hofer OP, *Christ in the Life and Teaching of Gregory of Nazianzus*, Oxford: OUP, 2013, p. 118.

⁹ *De ente*, chpt. Z.

¹⁰ Theodor Schneider, *Die Einheit des Menschen: Die anthropologische Formel “anima forma corporis” im sogenannten Korrektorienstreit und bei Petrus Johannis Olivi*, Münster: Aschendorff, 1972, p. 27. “The body is, if you will, the visible soul.”, Carlos Bazán, “La corporalité selon saint Thomas”, *Revue philosophique de Louvain*, 1983: 81(51), p. 407.

¹¹ See *Q. de anima*, a. 9, ad 7m.

not to seek the good in the unmixed life but in the mixed one”¹². The unmixed life, we would argue, gives rise to dualism and its progeny reductive materialism, which is very often parsed in solely extensionalist terms (see below).

It should be noted that the problem today, for the Aristotelian account of *mixis*, lies with decomposition. That is, for any such process to gain traction it must select one “bit” rather than another to recover the previous existing ingredients; but how, if they do not exist in the *mixt*, which is a homogeneous, or at least not in a robust enough manner? The Stoic approach avoids this as it does not maintain that the ingredients do not exist. Or, more importantly, two quantities of matter can, for the Stoics, occupy the same region of space concurrently. Their view is easier on the imagination, for any such separation is less perplexing as it involves a separation of that which was still there, though in a vastly different manner. Here one problem is avoided only to be replaced by another. Namely, how to characterise elements before and during a *mixis*, the properties they manifest. Aristotle defines the elements in isolation, but the Stoics cannot do this. Put another way, how do the Stoics describe the elements pre-*mixis* and then in the *mixis*? Aristotle’s position does not recognise the second as the elements are there only virtually¹³.

Leaving these difficulties aside, the *mixis* and mixed relation is underwritten by what Aquinas, following Plato, calls participation, or *methexis* in terms of *esse*. This is the infinitive of the verb “to be”, which we should translate as existence rather than as “being”: God is existence itself, and we do but participate – hence creation being a mixed relation. Lastly, and as intimated already, a *tripartite anthropology* (body, soul, and spirit). Such a tripartite anthropology goes back to Plato. Subsequently it is found in the Jewish-Hellenistic reading of Gen 2:7, most evident in St Paul (1 Thess 5:23). Most telling is that Philo of Alexandria, Flavius Josephus and St Paul writing at the same time, but from very different perspectives, all employ a tripartite division for the human. This anthropology was adopted by several Church Fathers and was developed up to and including in the work of Aquinas, though maybe less explicitly. St Irenaeus captures it beautifully when articulating his κρᾶσις-based anthropology, which rejects both fusion and juxtaposition, pointing

¹² *Philebus*, 61b.

¹³ See Paul Needham, *Macroscopic Metaphysics: Middle-sized Objects and Longish Processes*, Cham, Switzerland: Springer, 2017, p. 100.

towards this tripartite anthropology: “Now the soul and the spirit are certainly a part of the man, but certainly not the man; for the perfect man consists in the commingling [*commixtio*] and the union [*adunitio*] of the soul receiving the Spirit of the Father, and the admixture [*admixtae*] of that fleshly nature which was molded after the image of God”¹⁴. In a more pithy fashion, St Gregory Nyssa says, “man consists of these three...body and soul and spirit”¹⁵. Crucially it should be noted that this tripartition is echoed in Christ, for Aquinas points out that “three substances were united in Christ – body, soul and divinity”¹⁶. As St Paul tells us, and Aquinas quoting him: “I will pray with the spirit and I will also pray with the mind”¹⁷. Or again,

There are three that testify:

The Spirit, and the water and the blood,

And these three agree (1 Jn 5:8)

Arguably it is this tripartite anthropology that allows for a more fecund understanding of the human, and thereby anthropology, which is better articulated within a wider zoology and therefore a more expansive metaphysics, which is conjoined to history in a unique *mixis* (see below). To that end, it is important to recall that Feuerbach also wrote that *man is what he eats*, but of course the problem is that all that the human eats is dead; all flesh becomes meat: you cannot separate flesh without it becoming meat, consequently, you cannot eat flesh, it is seemingly impossible. We eat only death, or the dead in this respect (Aristotle would insist as much, because for him a dead body is only so homonymously).

¹⁴ *Against Heresies* 5.6.1.

¹⁵ Gregory of Nyssa, *De hom.*, op.8.5. In much more recent theology, Bulgakov tells us: “The human hypostatic spirit, which lives in man and which fundamentally distinguishes him from the animal world, has a divine, uncreated origin from ‘God’s breath’ [cf. Gen 2:7]. This spirit is a spark of Divinity that is endowed by God with a creaturely hypostatic face in the image of the Logos and, through Him, in the image of the entire Holy Trinity ... Through his spirit, man communes with the Divine essence and is capable of being ‘deified’. Being united with and living by the divine nature, man is not only man but also potentially – by predestination, by his formal structure – a god-man. At the same time, in his nature, as the soul of the world, as ‘flesh’ (i.e., through his animate body), man unites in himself the entire world, which in this sense is his humanity. Man consists of an uncreated, divine spirit, hypostatized by a creaturely I, and of a created soul and body”. Sergei Bulgakov, *Bride of the Lamb*, trans., Boris Jakum, Grand Rapids, MI: Eerdmans, 2001, p. 186.

¹⁶ *Quod.* 2, a.1.

¹⁷ 1 Cor 14:15, cited in *STII-II*, q. 28, a. 4, obj. 2.

But there is one exception to this, an exception that embraces all else as its beginning and end: the food of Christ himself, which is the very reason for creation. Crucially there can be no depletion, the body of Christ is not a scarce resource (outflanking Marx). No wonder then, that Christ tells us to eat (*eisthein*) his flesh, but then tells us to chew it (*trogein*) (Jn 6:53-56). Signs of incredulity here, and they spread like a virus: the tempting thread that hangs from the jumper – now pulled, now no more. After all, look at a person and they are but elements, yet we call them “Adam”. “Where are you ‘Adam?’” asks God today, just as he asked in *Genesis*. Understandably so, when we read the philosopher of mind Thomas Metzinger tells us that “No such things as selves exist in the world: Nobody ever was or had a self”¹⁸. The Eucharist, then, signals the generosity of creation *ex nihilo*. And it is the instrumental causality of the sacraments that recalls both that we humans are a *mixt* and that creation is a mixed relation, just as they recall Christ’s humanity as a real efficient instrumental cause of salvation.

We shall return to this. Before doing so we deal with the logic behind Feuerbach’s “theology is *nothing but* anthropology” – what accommodates such thinking? Something that condemns both theology and anthropology entirely and renders freedom impossible. For what is *indispensable* here is transcendence (here echoing the Quine-Putnam argument for the indispensability of mathematics for all science) without which immanence crumbles in on itself, consuming itself, as it were. For example, we insist on still referring to anthropology, however quaintly. Given the logics available, this is equivalent to saying the sun rises or sets, though we know, given Copernicus (or at least those who later proved his idea), that it does no such thing. Anthropology is wholly functionalised; therefore, all terms and parameters are replaceable because they are nominal. It is not that the emperor is without clothes, but skin too, and bones remain a noisy argument.

As something of a portend, at the time of Aquinas there was a growing tendency to view the sacraments extrinsically, tellingly compared to leaden coins, therefore all authority came from external, divine imposition and this entailed the beginnings of sacramental occasionalism, though it more accurately termed sacramental behaviourism (often with the window-dressing of morality), then nominalism, and eventual

¹⁸ Thomas Metzinger, *Being No one: The Self-Model Theory of Subjectivity*, Cambridge: MIT Press, 2003, p. 1.

abandonment. And as history would have it, this spilt into areas that are now legion: Body and soul, theology and philosophy, descent and ascent, grace and nature, life and death, time and eternity, and so on. This contrasts with the dynamic synthesis generated by the logic of *mix-is*, mixed relation, a tripartite anthropology, and *methexis*. In this sense we should speak of *the Reformation that never was*. There is no forcing the argument to see not only Zwingli at the end of this road but Nietzsche's coins, tired and worn that have lost their picture, now counting only as base metal. The Western mind is held captive by the hegemonic idea of a base upon which all else is erected (the chat in the bar above); again, Feuerbach's nothing *but* anthropology. Very often such a base metastasises into reductionism: the leaden coin, the base metal only.

THE END OF NATURE

In 1945 R.G. Collingwood argued that in the history of European thought there have been three periods of cosmological thinking when the idea of nature generated radically new approaches within science¹⁹. First, the Greek understanding of nature. Its physics was one of growth; nature was approached as if it were alive. This *Weltanschauung* was superseded by the second approach, what Collingwood called Renaissance cosmology, one that was corpuscularian and decompositional, which is, arguably, epitomised by the separability principle of classical physics with its temptation of microphysical fundamentalism – all wholes are reducible to their parts. Its formation was partly generated by the Cartesian dualism of *res cogitans* (mind) and *res extensa* (matter): the Cartesian cut consolidates Atomism and remains mandatory and even constitutive for the exact sciences of today and was later echoed in the Heisenberg cut between an object and its environment. Arguably, this fundamental bifurcation was itself facilitated by the previous substantialisation of matter (possessing its own form) – “matter” being now a stand-alone term and no longer a relative term as it was for Aristotle and Aquinas and is arguably the case today for physics. This is tantamount to a shotgun divorce between form and matter. Whitehead agreed with Collingwood's analysis, calling the dualistic outlook that has been prevalent during the modern period “scientific materialism”²⁰. We should,

¹⁹ See R Collingwood, *The Idea of Nature*, Oxford: Clarendon Press, 1945.

²⁰ A N Whitehead, *Science and the Modern World*, NYC: Free Press, 1967.

therefore, take on board Hans Jonas's crucial insight: "the *res cogitans* was made perhaps more for the sake of the *res extensa* than for its own"²¹. In other words, mind was made for the sake of matter, rather than the other way around: the lead rather than the imprint of the aforementioned coin. Any such dualistic pattern of thinking, or of parsing the world, invites, because it accommodates, the cutting free of the *res cogitans*, which is rendered otiose, and if not redundant, it is absorbed by its opposite. An eventuality mirrored by the hyper-spiritualisation of the soul: Here, body as mere matter, and soul as pure spirit reflect each other, rather than being a true *mixis*, again, something we term a person. To prioritize either is to have given up the ghost already, so to speak, for all we are left with are "bodies": material substance and spiritual substance, thus we are back with Descartes, which is to be left with no way of understanding unity – there is no unity between, nor within – consequently, neither exist. The corollary being that this prioritization leaves us bodiless, as reductive materialism testifies so well. Against this, prophylactically as it were, those such as Aristotle and Aquinas argue clearly that there is no such thing as a cadaver, hence, no such thing as a body, as usually understood; again, it qualifies as such only homonymously. Instead, any foot tapping is only to the *danse macabre* of 0's and 1's as existence is flatlined.

A move such as this can be witnessed in the advocacy of a purely extensionalist world, wherein all intentionality, all properties, and so on, are vanquished; this is especially evident in the work of Quine. We witness another casualty of this mode of thinking, a surprising one, we would surmise, not faeries, souls, persons, normativity even, but material objects: They become merely gerrymandered aggregates of matter, whatever "matter" might be, except as a placeholder. This is what Plato calls a disaster: 'Any blend (σύγκρασις) which does not have measure (μέτρος) or the nature of proportion (σύμμετρος) in any way whatsoever, of necessity destroys both its ingredients and, primarily, itself. A thing of this sort is truly no blend at all, but a kind of unblended disaster, a real disaster for the things which acquire it"²². Why disaster? Because of Feuerbach's "nothing but". Disturbingly, yet consistently, Lynne Rudder Baker contends that any such reductionist framework will not be

²¹ Hans Jonas, *The Phenomenon of Life: Toward a Philosophical Biology*, Evanston, IL: Northwestern University Press, 2001, p. 54, No 7.

²² *Philebus*, 64d9-e3.

able to speak of the Twin Towers falling, which is a double disaster²³. Our world will consist solely in what we might call “*Oxford changes*”, for just as a “*Cambridge change*”, so coined by Peter Geach, only accommodates real change for one side of a relation (i.e., becoming an uncle), which is more than fine, here, for Oxford changes, there is no real truth-maker *in toto*. By contrast, the true *mixis* that Plato recommends avoids such undesirable philosophical consequences of the mere juxtaposition afforded by any such extensional analysis. This means that there cannot be any transitivity between realms, as it were; between what can only be juxtaposed. This is reminiscent of the atomists, insofar as for them there was never a true *mixt*, rather there was only the appearance of such. Instead, there was mere aggregation (our gerrymandered objects, once again). Such aggregation is like the reverse of the child’s address: From home, to street ... to the universe. Instead, books to chapters, to pages, syllables...to letters. But surely even more, for any lone unit, say, a letter (or a particle), is itself composed, so the letter “A” would itself begin the process anew. The sense of our concepts lapse into nominalism²⁴. Such atomism is reminiscent, of course, with reductionism, again, with an auxiliary advocacy of extensionalism. We should ask, maybe, how atomism, reductionism or, for that matter, postmodernism is able to *utter* data at all, to traverse a sentence, given its own terms. All components of said utterance would surely fall into disarray, if indeed they can fall. Tellingly, any posting of pure flux is always impure, therefore parasitic. We notice this in the employment of either the definite or indefinite article: *a* or *the* flux. Form always reemerges: *the nightmare dreams*.

²³ See Lynne Rudder Baker, *The Metaphysics of Everyday Life*, Cambridge: CUP, 2007, pp. 25-31.

²⁴ See Plato’s *Theaetetus* 203a-205e. If the syllable SO is just the letters S and O, then knowledge of S and O should be sufficient for knowledge of SO, and vice versa, but it is not [203d]. If SO is a new form arising from the combination of S and O, it ceases to have S and O as parts, and so can’t be composed of them [204a, 205b]. Socrates summarizes these points at 205d-e. For Aristotle’s so-called Syllable Regress see In *Metaphysics* VII.17.1673-1674. “The syllable, then, is something-not only its elements (the vowel and the consonant) but also something else; and the flesh is not only fire and earth or the hot and the cold, but also something else. Since then that something must be either an element or a compound of elements, if it is and element the same argument will again apply; for flesh will consist of this fire and earth and something still further, so that the process will go on to infinity”. In *Metaphysics* VII, 17 (1041b 11-22).

MY PRECIOUS: THE ONE BASE TO REDUCE THEM ALL

Our cultural addiction to the base is pervasive, and seemingly perennial. “I am my brain”, Nagel writes, not in agreement with the statement, but rather as an illustration of our cultural situation²⁵. The brain does not act as a synecdoche for the person: the reverse is true, the person being tantamount to a prosthetic (a vat, if you will). If we argue that we are not our brains, that this is a category mistake, as Gilbert Ryle would put it, doing so following Husserl who spoke of a confusion of fields (*Gebietsvermengung*), itself an echo Aristotle’s understanding of metabasis: *a metabasis eis alio genos*. In addition, it can be said that such talk is guilty also of a mereological (part-whole) fallacy, or that cognition is embodied, extended or enacted and therefore extracranial, and so on. Yet the purchase of such arguments is limited, since we remain “brain-people”, a species of the particulate. Here, the brain is a synonym for the “micro”, as it invites further reduction: “You are nothing but a pack of neurons” (Francis Crick) – and exemplifies a pervasive meme, one bolstered by a raft of auxiliary logics. This is the idea of a base, something fundamental (a unique terminus), the candidates for which vary greatly, as does the field of knowledge in which an incarnation makes an appearance. Echoing the philosopher in the bar at the beginning, the candidate for base takes many forms: From Democritus’ Atom and Thales’ Water, to the microphysical, DNA of the “central dogma”, the Brain, the Bible, Being, the Cosmos, the Flux, and so on. A progeny of the postulation of a base is fundamentalism – religious, scientific and philosophical. For example: biblical inerrancy in terms of religion; a fetish for TOEs (“theory of everything”) in science, this being analogous to Borges’ “Zahir”; reductive materialism in philosophy, and its “High Church” stance of eliminativism. The perennial temptation to posit a base arises from what Plato calls the war between giants who tell us we are but body or matter, and the friends of the forms who appeal to the immaterial only²⁶. Both sides are allergic to the ancient idea of *mixis*.

The temptation to indulge erroneous positions such as reductionism or scientism arises from our indoctrination into believing in a hierarchi-

²⁵ Thomas Nagel, *The View From Nowhere*, Oxford: OUP, 1986.

²⁶ *Sophist*, 245c-249d.

cal view of the sciences, physics being the master science²⁷. Well, we say physics when really it should be high-energy physics. By way of example, one need only recall the long-running fight between two Nobel laureates, Steven Weinberg and Phillip Anderson, over funding for the Superconducting Super Collider. The former deeming high-energy physics to be superior to condensed matter physics, whilst the latter deeming it largely irrelevant. Weinberg argued that “particle physics is in some sense more fundamental than other areas of physics”²⁸. Incidentally, such an understanding reflects Weisskopf’s distinction between extensive and intensive research²⁹. Anderson’s riposte is most revealing: “The more the elementary particle physicists tell us about the nature of the fundamental laws, the less relevance they seem to have to the very real problems of the rest of science”³⁰. In this way, condensed matter physics cuts into the nomological hegemony of high-energy physics, yet, arguably, in so doing, has freed it from a false ambition, or at least any destructive inference that would accompany it, which would not be physics, but bad metaphysics³¹. Under the shadow of this veneration of high-energy physics, all other sciences pale into various degrees of insignificance, which in turn distorts the best achievements of physics. This dominant perspective is the outcome of a picture by which we have been bewitched: the layer cake, to borrow Putnam and Oppenheim’s metaphor from the 1950’s³². This metaphor provides a mandate for the positing of a base that sucks in all that is supposed to reside above, down to its level, for truth resides only in the base. As Ernest Rutherford once said, “There is only physics, all is stamp collecting”. Or co-discoverer of DNA’s double helix, Francis Watson: “Physics is the only science; the rest is just social work”.

²⁷ The term “reductionism” first appears in C Garnett, “Scientific Method and the Concept of Emergence”, *The Journal of Philosophy*, 39 (1942), pp. 477-486. Scientism appears to have been first used by Friedrich Hayek.

²⁸ S. Weinberg, “Newtonianism, Reductionism and the Art of Congressional Testimony”, *Nature*, 330 (1987), p. 434.

²⁹ V. F. Weisskopf, “In Defence of High Energy Physics”, in *Nature of Matter: Purposes of High Energy Physics*, ed. L. C. L. Youan, Brookhaven National Laboratory, 1965, pp. 33-46.

³⁰ P.W. Anderson, “More is Different”, *Science*, New Series, 177, No 4047, 4 August 1972, p. 393.

³¹ See P. Humphreys, *Emergence: A Philosophical Account*, Oxford: OUP, 2016, p. 6.

³² See P. Oppenheim, and H Putnam, “The Unity of Science as a Working Hypothesis”, *Minnesota Studies in Philosophy of Science*, 2 (1958), pp. 3-36.

Arguably this is not only wrong but dangerous, spitting out brain people, or more accurately, people-brains such as ourselves. We can observe this cultural situation in the rhetoric surrounding MRI scans and religious experience, whatever that may be. The neurologist takes the scan of the person having said experience, notices an area of greater activity - bingo, religious experience is nothing: "x" marks its spot or absence. Of course, two things spring to mind immediately. First, put a scientist in whilst they are thinking about $E=mc^2$, and we have our bingo, too. Surely, no one makes the next move of rendering this nonrealist (this is Gnosticism in disguise). Second, imagine a cartoon of the neurologist looking inside the brain, we should then picture another neurologist look inside their brain, and on we go. This is a species of cultural nonsense wherein religion is said to be natural, anthropological even, and therefore it is naturalised. Where to begin? If religion is true, a natural virtue for Aquinas, we would expect it to be natural. More, naturalism or ontological naturalism (or certainly eliminativism) is most certainly not natural, and therefore it should be supernaturalised, and re-categorized as an exotic atheist cult, which is a religious conceit, trading wholly on cultural appropriation from the religious tradition of its Abrahamic sisters and brothers formed down millennia, just as anthropology does, indeed the entire university. After all it was monks who invented the *university* so we could study the *universe*.

The operation of a fundamentalist base look like this, which is *highly transferrable across many disciplines*, 1) The Hierarchy thesis: The universe is stratified into levels. 2) The Fundamentality thesis: There is a bottom level, which is fundamental. 3) The Primacy thesis: Entities on the fundamental level are primarily real and the rest are at best derivative, if they are real at all³³. The reducing theory deposes the reduced one. This is the *tyranny of scales*, and it leaves all modes of *scientia* vulnerable for two stark reasons³⁴. The cultural impact of which can be witnessed in the academy (shaping research avenues, especially funding, and pedagogy), and importantly, in society also. The first of these reasons is the precarious nature of all theorising, which comes immediately to our attention when theories change, especially in the case of radical theory

³³ See J. Schaffer, "Monism: The Priority of the Whole", *Philosophical Review*, 119 (2010), pp. 31-76;

³⁴ See R Batterman, "The Tyranny of Scales", *Oxford Handbook of the Philosophy of Physics*, Oxford: OUP, 2013, pp. 255-286.

change. Think of the move from Newtonian physics to Einstein's Special and then General Relativity or the shift from Classical to Quantum Mechanics – evidence of the transience of our best accepted theories. We end up with theories “emeritus”, in what is known as “meta-pessimistic induction”. As Bas van Fraassen points out, “It was discovered not long ago that the success of Newtonian science had indeed given us, for several hundred years, incredibly powerful, far reaching, false beliefs about nature. No one, I think, took that as reason to regret Newton's life and work or its scientific influence”³⁵. Science is, to paraphrase Poincaré, ruins accumulated upon ruins.

A PERSISTENT VEGETATIVE STATE: BRAIN DEAD

Religion and science have lost their respective atoms. Yet this is liberating. Just as we cannot approach scripture *ab initio*; nor can we approach science in such a manner. But this does not threaten truth as such. Instead encouraging the requisite cultural or conceptual detox, shunning our addiction to the idea of a base, or its pure absence: The flux. The second reason is implicit in Rutherford's aside, and in Nagel's protest, again a progeny of the postulated base. To take but one area of research as symptomatic, philosophy of mind. If microphysical fundamentalism roamed the corridors of physics, its dogma of microphysical supervenience was soon exported to philosophy and received rather deferentially. The work of Jaegwon Kim is representative of the malaise, what he terms causal exclusion, but better termed expulsion. In simplest terms, for there to be mental causation the mental must be anchored in the physical (it must supervene), or there is overdetermination (more than one cause), and the latter is shunned. We are left with two options: reductionism (and therewith no mental), or epiphenomenalism (mind is not real, like a stone, but more like a shadow cast by a stone). The former gives us causation at the expense of mind; the latter causal impotence. Courageous moderns may well accept this, arguing that we just have to grow up and leave childish things such as minds behind. Such willingness is witnessed in the frisson surrounding Benjamin Libet's now infamous experiments, wherein what is deemed “readiness potential” manifests itself (non-conscious activity in the fron-

³⁵ Bas van Fraassen, “‘World’ Is Not a Count Noun”, *Noûs*, Vol. 29, No 2 (Jun., 1995), p. 1147.

topolar and parietal cortex) 350 milliseconds before simple motor actions reach consciousness – *ergo*, free will is an illusion. Surely, then, we have locked people up in prison solely for reasons of arbitrary cultural convenience, freely willed by no one. All that’s left of the human is *Homo ex machina*, for legal functions perhaps (hence the growth in neurolaw, and God forbid, neurotheology). It should be noted though that for Aquinas “the wise person rules the stars; the fool is ruled by them”. The vicious person has become predictable, as they have assumed only material causes, and they have chosen to act as a material form only, therefore their freedom is drastically curtailed, as sensible objects determine their passions, which in a habitual manner determines their volitions. Yet such passions when perfected by virtues are elevated, or so Aquinas argues. Leaving aside the philosophical mess on display in the interpretations of Libet’s work – that “readiness potential” must be posited as an unmoved-mover, it is the eager cultural embrace of this interpretation that is of greater interest, along with the reappearance of a variant of Cartesian dualism, what Kim calls Descartes’s revenge: Mind/brain or macro/micro³⁶. Jerry Fodor rightly refers to the above as the end of the world³⁷. Why? Because such microphysical supervenience (or exclusion) generalises; its logic is transferred across all disciplines *inflicting causal drainage*³⁸. Its applicability in philosophy of mind applies equally in geology, biology, chemistry, and most certainly anthropology, which is now risible, therefore nihilism pertains. Anthropos floats in the abstract skies of functionalism, like the smile of the Cheshire cat.

In a highly indicative manner, modern imaginations are sometimes prone to argue in a rather Sophomore manner, like with Libet’s experiments. For example, we read stories about those such as Phineas Gage, apocryphal or not, wherein the poor railway worker was struck by a line of track, right through his head. Subsequently, his personality changed, and so on. Or, “Our Auntie Jean was never the same after her stroke”. Lastly, advocates of neurolaw will often point to cases of a person with a tumour who commits egregious acts, but when the tumour is removed, their behaviour returns to “normal”, and so on. All of this is fine, as far as it goes. The point of concern is the inference, whether explicit

³⁶ Jaegwon Kim, *Mind in the Physical World*, Cambridge: MIT, 1980, p. 38.

³⁷ Jerry Fodor, “Making Mind Matter More”, *Philosophical Topics*, 17:1 (1989), p. 77.

³⁸ See N. Block, “Do Causal Powers Drain Away?”, *Phil. and Phenom. Research*, (2003), pp. 133-150.

or implicit, that such cases point to the nonexistence of the soul. This seems most myopic, and culturally laden, labouring under the impression that today is obviously more advanced than the past. Aquinas: “if certain corporeal organs have been harmed, the soul cannot directly understand either itself or anything else as when the *brain* is injured”³⁹. Conversely, the “The soul is the very nature of the body”⁴⁰. As for Phineas, *Man does not live by bread alone, we are told, but by implication bread as well*. Hence in the Our Father we pray for our daily bread. Or as my café on the way to work says in a bid for early morning wit: *Coffee, because murder is frowned upon*. Our reliance on the body is obvious, a rude example being death, which is an extremely expensive idea, in other words, if reductionism were true, death would be fictitious. As philosopher of biology Ghiselin puts it: “if we ask the question, when did human life begin? The answer is never”⁴¹. The process of reductionism, it would seem, begins with the reduction of person to mind, and then mind to the brain, and ends by undermining everything that could metaphysically sustain the *nomen dignitatis* all ethics presumes. Theologically this is comparable to the heresy of Docetism, which comes from the Greek *dokein* (to seem) – we only seem to be human, a *homo ex machina* invoked for purely functional purposes. This is a universalised Zwinglianism: We are not real body and blood, but merely symbolic⁴².

REDUCTION IN THREE FLAVOURS

It should be noted that such materialist ideology, analogous to that of the Flat Earth, comes in three modalities: *Diachronic*, *synchronic*, and lastly, *prospective*. The first reduces all to its past: you are nothing but your origins (*the genetic fallacy*), trapped by history, from which nothing escapes, arguably history too, as that is metaphysically expensive, beyond the purse of materialism. This is the sheer flux of phylogeny (a biology of becoming, without a biology of being). The second, likewise, says you are nothing *but*. An index finger extended, accusingly, pointing at our bodies, directed to that from which we are made now (*fallacy of composition*). Carl Sagan exemplifies this stance: “I am a collection of

³⁹ *De spiritualis creaturis*, a.2; emphasis mine.

⁴⁰ I Sent., dist. 3. Q.2, a.3, ad 1: “Anima enim est natura ipsius corporis”.

⁴¹ Michael Ghiselin, *Metaphysics and the Origin of Species*, New York: SUNY Press, 1997, p. 1.

⁴² Here, ignoring the deeper meaning of the term symbolic as used by the ancient Greeks.

water, calcium, and organic molecules called Carl Sagan. You are a collection of almost identical molecules with a different collective label". The last one hedges its bets by trading on the future: You wait and see; you *will be* nothing. We see this explicitly in the nodding heads that accompany pronouncements about Strong AI: "in the future there will be robots that will undermine the abilities of humans, far surpassing them in every measurable aspect". Inevitably, a crass inference motivates and follows from such self-assured factoids: The human is therefore nothing, at least nothing much. This flat Earth stance has been wheeled out throughout history, going back thousands of years – same view, different tie. There is nothing new under the sun. Most recently the above is exemplified by the nature writer Robert McFarlane: "What does human behaviour matter", he asks, "when Homo sapiens will have disappeared from Earth in the blink of a geological eye? Viewed from the perspective of deserts or oceans, morality looks absurd, crushed to irrelevance. A *flat ontology* entices: all life is equally insignificant in the face of our eventual ruin"⁴³. This should hang above the architrave of all doors at every education institution as an example of horrendous thinking. Staggering ineptitude, though a lovely writer, it should be said. G.K. Chesterton's retort to identical thinking evident in his day (here responding to Herbert Spencer), "this contemptible notion that the size of the solar system ought to over-awe the spiritual dogma of man. Why should a man surrender his dignity to the solar system any more than a whale? If mere size proves that man is not the image of God, then a whale might be the image of God ... It is quite futile to say that man is small compared to the cosmos, for man was always small compared to the nearest tree".

If it is not the changing menu of high-energy physics' particles that are king, it is the swamp of phylogeny, or the coming threat of robotic usurpation, so we might as well concede now. That's just the point, though, *the concession is always already*. Importantly, advocates of these three flavours or modalities of reduction, have decided beforehand that humans are worthless, because they must be if their ideology it to get off the ground (irony intended). Second, theology should be wholly bemused (though humanism is in real trouble), as they are indeed already less than others, and the material is embraced, and that's just plain old orthodoxy. This is obvious. Strong AI, for instance, is a species of

⁴³ Robert Macfarlane, *Underland: A Deep Time Journey*, London: Penguin Books, 2019, p. 15.

Pelagianism, as it is a performance-based metrics. But humans in the Abrahamic traditions have always been outperformed, being so by that which are called angels. We have fully self-conscious, hyper intelligent beings that are not us. Yet such out-performance does not carry the day, and that's the radical anthropology at work in theology, which is the only anthropology to be had, or so it would seem. After all, it is humans that will judge the angels, despite their superiority, in these performance terms (1 Cor 6:3). From another perspective, one Wednesday every year Christians gather to remind themselves that from *dust* them came and to dust they shall return: the imposition of ashes (forget Darwin). It would seem, then, that the shock of Darwin arose for those for whom such ashes were indeed an unwanted imposition, cultural and otherwise, and therefore avoided. This is compounded mightily when we realise God became human, at least according to Christianity, and did so by way of mammalian birth, at a historical time and a geographical place, into a tribe. God did not become an angel or reside as a ubiquitous force field. Lastly, elements – mere bread, mere wine, like the dust, transubstantiated – the Eucharist (what St Irenaeus calls the *mixed cup*) as instrumental cause of grace, being analogous to Christ's humanity as a conjoined efficient instrument of salvation. (So, let the Deists tremble). Angels and dust, against Pelagianism and Gnosticism – a zoology as antidote that came way before the disease.

THEŌSIS AS ANTHROPOLOGY: DEPENDENCE AS INDEPENDENCE

We should remind ourselves that for theologians, such as St Irenaeus, in terms of our anthropology, the flesh is in the image of God, the soul the similitude, and the spirit, the likeness. This lines up with his idea that for the Gentiles God was creator; for the Jews God was law-maker; whilst for the Christians, He is Father: creation (body) capacity (soul), salvation (spirit) – the *mixt* of which is in the end not about getting somewhere nice, but the perfection of humanity, this is called *theōsis*, a term coined by Gregory Nazianzus: “I might be made God to the same extent that he was made man”⁴⁴. As St Augustine said, “we have not been made Christians, we have been made Christ”⁴⁵. Who is, we

⁴⁴ Or. 29.19.

⁴⁵ As quoted in D. Meconi, *The One Christ*, Washington, D.C.: CUA press, 2013, p. xi.

are told, the first born of the dead. Here we must be careful, as there is a certain conceptual incontinence afoot: This is not about resurrection *simpliciter* but rather that the progeny of Adam having become the progeny of Christ are no longer, therefore, beholden to the old bread of generation, because they have been regenerated. Christ born of a virgin, and more, without an earthly father (just like Adam), uses the same material as that from which Adam was made and redeems it. Analogously, human parents in being less involved (God we are told, creates human souls directly, not the parents) are, paradoxically, more so (like Mary, she “who is fairly mixed”, as Gerard Manley Hopkins put it). This is the case with the soul also, as we shall see. Crucially, if the parents seek their prodigal portion, to snatch at ownership of the child, its inheritance, at the end, will be the grave. “Do not call anyone on Earth father” (Mt 23:9). Parents take up a preparative role, as a Priest might at Mass, readying the elements in just such a fashion. Here, God creates the human soul as Pagan gods might, for God is beholden to pre-existing matter, fittingly organised, just as souls always do. As with the person, so too with the Eucharist. This Father of all must wait for the seasons that allow the harvest, and the forming into elements (wheat and grape), formed as artefacts (bread and wine) which then are presided over. God waits on history, thereby gifting it the vertigo of its very thickness, wherein history can rise-up *disputing entirety’s every pretence*. “Woman, my time has not yet come” (Jn 2:4) says Jesus to his Mother at the wedding of Cana, yet he does his mother’s bidding, as the waiters do hers, just as she had done his Father’s. History: observe infinity dwindled to infancy, as Gerard Manley Hopkins put it. Again, was Adam not made from the dust, thereby signalling that that which was very good would arise from the same elements, just as God’s Son would; and Eve from the side of Adam, and from the new Eve (matter so prepared) Christ. How else, after all, would the Incarnation be possible? The dependence of each soul anticipates the dependence of the Son.

This is, arguably, the most radical idea of creation, if both aspects are approached simultaneously: *ex nihilo/ praesuppositio materia praexistente*. We can bring these together by combining a mixed relation and *mixis*. Jerusalem and Athens, what have they to do with each other? Bethlehem – the *mixis* of which they are the ingredients, the entity they are not. This returns us to our three modalities of materialist reduction. The gleaming Gnosticism informing any negative reading of materiality seems ludicrous and speaks more to the vanity of modernity

and its adolescent, ambitious self-harm, than it does to theology, as does the comic book preoccupation with AI, except of course, economically and ethically, which is massive. Lastly, any student should ask the purveyors and peddlers of the three reductions one question: What would it take to be otherwise? That is, what would be required, what would it look for such reductionism and therefore removal of human worth, not to be the case? Any answer, if forthcoming, will render Harry Potter as fantastic and magical as a Tuesday afternoon in Detroit, at a bus stop in the drizzling rain, having just missed the thing we were waiting for.

STUCK IN THE MIDDLE WITH YOU: THE TOWER OF EROS

Crucially, the scientific method, as generally presented and proselytised, has been superseded, not out of failure, but out of sheer success⁴⁶. This gives hope to Collingwood's 3rd cosmology. The rise of systems analysis, complexity, self-organisation, and quantum mechanics has moved us to a situation where the "flame" (processes) rather than the "rock" (substance) has become the more appropriate metaphor⁴⁷. We concur but argue that this is better served by a metaphysics of *mixt*: an effective union of substance and process, form and matter, or better, act and potentiality. To that end, a thesis put forward here is that existence does not bottom out in a particulate or microphysical fundament (priority pluralism), nor does it have a fundamental level at the top, say, the cosmos (priority monism). The former, we argue, accommodates a world consisting in "gunk"⁴⁸. This accommodates the conceivability of a "gunky" world: a world devoid of mereological simples and entails infinite descent. The latter, though, is a "junky" world: if every object in the world is a proper part, there is no infinite ascent. This precludes universal composition and mereological nihilism; instead it consists in restricted composition. One world lacks all substances (no bottom level), and the other too many (no top level): which is a crisis

⁴⁶ See R. Harré, *One Thousand Years of Philosophy: From Rāmānuja to Wittgenstein*, Malden, MA: Blackwell, 2000.

⁴⁷ See J Earley, "Would Introductory Chemistry Textbooks work Better with a New Philosophical Basis?", *Foundations of Chemistry*, (2004), pp.137-160.

⁴⁸ See D. Lewis, *Parts of Classes*, Cambridge: Basil Blackwell, 1991.

for fundamental mereology⁴⁹. A *mixt* of both gives us a “hunky” world wherein every object has both proper parts and is itself a proper part⁵⁰. This possibility challenges both atomism and priority monism, though both are undermined from other quarters too⁵¹. In mereological terms, we argue that the world is grounded in intermediates – substantial priority, salvaging fundamental mereology. Such priority consists in a *mixt* of the macro and the micro, articulated in a concomitant application of the analytic and the synthetic, emergence and reduction, descent and ascent in terms of actuality (ἐνέργεια) and potentiality (δύναμις), always aware of the apophatic (negative) and cataphatic (positive) moments intrinsic to all *scientia*.

An enlightening example of the surpassing of an old method, the logic of which extends across many disciplines, is found in physics with electroweak theory and quantum chromodynamics in the Standard Model (SM), developed in the 1970’s and 80’s. This was interpreted as a major success for reductionism, that is, the move to a “TOE”: again, the pure base metal, without print. Of course, even then gravity was not in the picture (quantum gravity still eludes us), and many parameters helping to construct the model were arbitrary. But the employment in Quantum Field Theory (QFT) of renormalization group theory became necessary: roughly, a strategy for taming infinities⁵². For example, phase transitions (say, liquid to gas) take place in finite systems, but can only be understood by invoking the thermodynamic limit: $N \rightarrow \infty$. It is the strange world of Wilson’s renormalization groups that aids us here as it in one sense reigns in any such infinities, allowing us to approximate in a meaningful manner that which is going on. Consequently, our understanding of the SM has changed radically. It is now construed as an effective field theory (EFT): A theory that captures what is relevant in, or at, a given domain, doing so effectively – it works, by ignoring all else.

⁴⁹ J Tallant, “Problems of parthood for proponents of priority”, *Analysis*, Vol. 73, No 3, July 2013, pp. 429-438.

⁵⁰ E. Bohn, “Must there be a Top Level?”, *The Philosophical Quarterly*, (2009), Vol., 50, No 205, pp. 193-201.

⁵¹ See Ross Inman, *Substance and the Fundamentality of the Familiar*, London and NYC: Routledge, 2018.

⁵² K. Wilson, “Renormalization Group and Critical Phenomena. I. Renormalization Group and the Kadanoff Scaling Picture”, *Physical Review*, B 4, (1971), pp. 5-15.

A defining feature of an EFT is restriction of freedom, it can be thought of this way. Recall Sherlock Holmes' response to Dr Watson's surprise at his being ignorant of heliocentrism: "What the deuce is it to me? You say that we go round the Sun. If we went round the Moon it would not make a pennyworth of difference to me or my work". An EFT is a theory of dynamics of a system at energies lower than the given cut-off, and these are therefore decoupled from higher energy levels, such details being washed out in the analysis – as when we squint our eyes to see better. Many physicists approach the Standard Model of particle physics as an EFT, whilst nearly all condensed matter physics is described by EFT. This results in a natural pluralism that consists, we argue, in a richer sense of unity. Rather than a layer cake, we have a never-ending tower of theories, and what qualifies as up and down are context driven⁵³. This recalls Heraclitus' fragment, "The way up and down is one and the same (ὁδὸς ἄνω κάτω μία καὶ ὄντη)". Aristotle tells us "For up and down are not the same for all things"⁵⁴. Zoologically (and here this is meant in metaphysical terms, and importantly the use of the term zoology helps detox us culturally, as we will see) this is certainly the case. If Quantum Field Theory consists in never ending tower of theories, turtles all the way down, as the old lady apparently said to the physicist, the apocryphal testudinal tale, but turtles all the way up, too (just as for Aquinas it is form all the way down, and matter all the way up, if understood in terms of act and potentiality– God being the exception), it seems to offer us autonomous domains: domains of study, concepts, energy levels, engagement or intervention, and so on. Such domains are referred to as protectorates or a universality class⁵⁵. This is reminiscent of Plato: "Knowledge also is surely one, but each part of it that commands a certain *field* is marked off and given a special name proper to itself. Hence language recognizes many arts and many forms of knowledge"⁵⁶. Interestingly this is just how Aquinas defines the intellectual soul in relation to its powers, a constitutional monarch, so to speak: dependent and independent in relation to its subjects (see be-

⁵³ H. Georgi, "Effective Quantum Field Theories", in *The New Physics*, ed. P. Davies, Cambridge: Cambridge University Press, 1989.

⁵⁴ *De anima*, II, 415b28-416a5.

⁵⁵ R. Laughlin, D. Pines, "The Theory of Everything", *Proc. Nat. Acad. Sci.*, 97 (2000), pp. 28-31.

⁵⁶ *Sophist*, 257c.

low). Crucially, even if we do find a TOE effective theory will still be required as a scaffolding support for any calculations, and any such TOE will be so abstracted that if we are to deal with phenomena EFTs will be required once again. More shockingly, the idea of localisation, which gives a supposed mandate to decomposition, in terms of separability, is otiose in a scale-free universe, which we argue is the case, therefore the concept of supervenience turns out to be a cultural product: no wonder its failure is commonplace⁵⁷. Along with EFT, this helps motivate a radical reconsideration of our understanding of hierarchy. Crucial to this endeavour, is not only that we have a never-ending tower of effective theories but that the lower and higher are inseparable and reversable. This is consonant with the Proclean idea that hierarchy is suffused with both converting love (*eros epistreptikos*) and providential love (*eros pronoetikos*), by which “lower” and “higher” serve each other. There is another way of articulating this in theoretical physics. In Fourier Analysis the world is described in the variables of wavenumbers rather than spatial positions, the small (fundamental) layers corresponding to large lengthscales. The normal science (in a Kuhnian sense) of fundamentality is ruptured. We should say *more* fundamental, never *most*.

Once we thought the Earth was the centre of the universe. Copernicus disabused us of this (leaving the cosmological principle aside, as today it explicitly treats the cosmos as homogenous and isotropic). Here, the particulate suffers a similar fate⁵⁸. After all, a particle, properly understood, is but a manifestation of a quantum field; unsurprising then, that permutation invariance pertains, wherein one particle can be replaced without cost to the system (somewhat analogous to molecular turnover for organisms: all our molecules change over time, but we remain who we are: “Adam”). Moreover, in the Fractional Quantum Hall Effect (FQHE: an effect seen in semiconductors) we have quasi particles, named such not because of a lack of reality, but rather that they are inherently relational (hence only having a fractional charge). This is analogous to Hermann Haken’s work on lasers, in terms of his notion of the “enslaving principle”, which seemingly entailed only macroscopic, thermodynamic theory, such as the Landau theory of phase transitions⁵⁹. Harré points

⁵⁷ See Thalos, *Without Hierarchy*, Oxford: OUP, 2014.

⁵⁸ See X.-C. Wen, *Quantum Field Theory of Many-Body Systems*, Oxford: OUP, 2004.

⁵⁹ See B. Kröger, *Hermann Haken: From the Laser to Synergistics*, Cham, Switzerland: Springer, 2015.

out, “It is a fallacy to take the parts of a whole to be constituents of the unanalysed whole from which they came”⁶⁰. In other words, the notion of a part is derivative, and sometimes we presume a part, but such an appellation is only gained via the whole. In short, something is effectively enslaved, and this gives provisional, methodological dominance, one that is reversible given another context. Indeed, it is analogous to biological systems in general if they are mixed with biology of being. Such an enslaving principle is intrinsic to all *scientia*, what would any metabolism be without one, or how would any discourse such as sociology exist. Returning to physics.

EPOCHÉ: REDUCTION AND EMERGENCE

Radically, most phases of condensed matter can be characterized by symmetry considerations; the FQHE State is instead characterized by topological order, a mix of short and long-ranged holistic entanglements. Yet those such as Morrison and Mainwood argue that the failure of mereological supervenience is so well-established and common that it becomes trivial. Maybe, but there is little recognition of such failure, and that this general lacuna informs much philosophical understanding, both civilian and professional. It is true that its pervasiveness blunts certain investigations, insofar as they do not result in a distinction between, say, resultant and emergent systems or provide a mechanism⁶¹. Here again, though, the FQHE is more than useful. Not only is there a failure of mereological supervenience which is one more instance of the scuppering of any notion of microphysical fundamentalism, but the nature of this form of emergence is of a different stripe. Unlike much emergence that often entails short-range entanglements, FQHE consist in long-range also, and it is these that generate topological order which determine the system as a whole. Regarding the former, these can, some argue, be reinterpreted as unitary operations that can as a result

⁶⁰ Rom Harré, “Mereological Principles and Chemical Affordances”, in *The Philosophy of Chemistry: Practices, Methodologies and Concepts*, ed. Jean-Pierre Lloyd, Newcastle: Cambridge Scholars Press, 2013, p. 111.

⁶¹ See P. Mainwood, *Is more different?*, Oxford (2006), D. Phil. dissertation; and M. Morrison, “Emergent Physics and Micro-Ontology”, *Philosophy of Science*, 79 (January 2012), pp. 141-166. Incidentally, the terms emergent and resultant were coined by Lewes in the very same passage. See G.H. Lewes, *Problems of Life and Mind*, Vol. II, London: Trübner & Co., 1874/1875.

be treated as if they were a system that does not entail entanglement. The point here being that the FQHE consist in a mixis, as it were, of short and long-range entanglements, and thereby it is the second aspect that affords universal equivalence classes. They are insensitive to local perturbations as the topological arrangements generate properties of requisite immunity, which is itself a direct consequence of its holistic nature: there is no suffrage offered to would-be individuals. Moreover, these long-range correlations are not a result of any aggregation of short-range ones. Quantum mechanics is inherently relational, and these relations do not supervene on non-relational properties. That noted, what is special about FQHE? It's not the presence of relational properties, but rather that they dictate what the system does, and therefore cannot be screened-off. This can be thought of in terms of fusion emergence, as advocated by Humphreys⁶². But there is a crucial difference. Unlike there, where the base properties are re-identified to the point of being absorbed or used up, that is they no longer exist, so to speak, here this is not the case, even though it very often is. They continue to exist, yet at the same time are re-identified in that they are transmogrified from non-relational to inherently relational basal properties – and even if it were to be argued that electrons do not have non-relational properties to begin with, the point here would be that they now have different inherently relational ones. Most tellingly, electrons which carry charge in such a system, no longer possess it on their own, as it were, which is to say, it is not intrinsic to them as it is given up to the entanglements. We have, it would seem, a new supervenience base. This outstrips the normal path of analysis, wherein we note emergence because of re-identification in terms of parts being absorbed by the whole, or when the macro is immune to the micro, but here this is not the case. That is, emergence can occur whilst keeping in place what we might be tempted to see as its nemesis – the supposedly autocratic micro-physical realiser; it's not just a matter of being relational, as that is common, but rather, being intrinsically so: there is no before.

In FQHE, electrons are entangled across all length scales. The new supervenient base is not the sum of the parts and their relations between each other. Rather, it is the parts which now bare their own relational properties (maybe this is analogous to how a tractor acts as its own chassis) – there is no individual about which to speak, even though

⁶² See P. Humphreys, *Emergence: A Philosophical Account*, Oxford: OUP, 2016.

it is a micro-base, hence it is not reductive, as typically understood. Put another way, the base is what it is, but never on its own. The micro is insensitive to itself, understood in individualistic terms. The idea of the threat of causal exclusion (Kim) is a non-starter as the “units” required to construct its logic (subvenient /supervenient) are not there. Quite simply, any base is “in on the act”, so to speak, for any such terms are cooperative from the start. Again, there is no before, which any chance of causal exclusion requires, not that it’s a satisfactory argument on its own terms. Crucially, such topological characteristics that seem to signal strong emergence may be present in classical systems, too, such as polymer systems⁶³. Analogous to the FQHE, similarly, electrons become delocalized in relation to molecular bonds, hence the radical change in language from orbits to molecular orbital theory – we speak more now in terms of potentiality. A molecule is a composite whole in which atoms lose their singularity⁶⁴. Or again, “Since the Hamiltonian of a system determines the precise nature of the physical law that governs its behaviour, to say that some system exhibits downward causation is to make a counternomic claim about it: that its behaviour would be different were it determined by the more basic laws governing the stuff of which the world is made. The emergentist and the reductionist can agree that a unified framework of physical law (quantum mechanics) governs how forces act, but disagree on the extent to which physical law is unified from a dynamical point of view, that is, on how many independent kinds of Hamiltonian operate in the world”⁶⁵. That is, are there resultant Hamiltonians only or configurational ones also?

Similarly, in terms of the failure of mereological supervenience electrons become delocalized in relation to molecular bonds, hence the radical change in language from orbits to molecular orbital theory – we speak more now in terms of potentiality. A molecule is a composite whole in which atoms lose their singularity⁶⁶. We should think more in

⁶³ See T. McLeish, M. Pexton, and T. Lancaster, “Emergence and Topological Order in Classical and Quantum Systems”, *Studies in History and Philosophy of Modern Physics*, 66 (2019), pp. 155-169.

⁶⁴ See R.S. Mulliken, “Interpretation of band spectra, part III. Electron quantum numbers and states of molecules and their atoms”, *Rev. Mod. Phys.*, (1932), 4, pp.1-86.

⁶⁵ R.F. Hendry, “Emergence vs Reduction in Chemistry”, in *Emergence in Mind*, eds. C. MacDonald and G. MacDonald, Oxford: OUP, 2010, p. 206.

⁶⁶ See R.S. Mulliken, “Electronic structures of polyatomic molecules and valence III. Quantum theory of the double bond”, *Phys. Rev.*, 41, 754 (1932); R.S. Mulliken, “The

terms of affordance, than entitative. The *apophatic* and *cataphatic* nature of the term “particle” is now evident (we need only think of no-go theorems in quantum mechanics, e.g. Malament’s). In the end, fundamental things are not necessarily fundamental⁶⁷. Crucially, though, this is not one more defence of emergence against reduction, as both presume the very same logic; just interpreting outcomes differently. Indeed, the debate between emergence and reduction is one more manifestation of pervasive cultural dualism, joining the ranks of the macro/micro, mind/brain, indeed Wilfred Sellers’ two images of manifest/scientific, or C.P. Snow’s two cultures. Instead, there should be a wholesale validation of the macro, and concomitantly an emancipation of the micro from its cultural role as tyrant. It is aided by the introduction of the near-criminally neglected analysis of the mesoscopic, which throws the analysis into relief, avoiding any simple dualism⁶⁸. We should critique reductionism, but laud reduction; after all, *reducere* means to “bring back” or restore, what Husserl termed *rückfragen* – questioning-back. We support strong emergence (e.g., FQHE effect), but are suspicious of emergence more generally, for it is often a mere placeholder, seduced by that which it rejects. In other words, emergence has a form of base envy⁶⁹: It thinks it qualifies as valid when it looks like the lower level base or is novel in relation to it. But there is no base to imitate, or from which to deviate. Here Quine’s *prima facie* nihilistic stance that there is no “up” nor “down” can be translated into a theological register, thereby saving its truth⁷⁰. In one sense, and when the cultural ideology of the base is reconstructed, any purported reduction is easily understood as a form of emergence, at least in terms of the seemingly positive connotations that are supposed to accompany it, as reduction can more easily invoke wonder: So little doing so much. Clearly, construing reduction and emergence as being

path to molecular orbital”, *Pure Appl. Chem.* (1970), 24, pp. 203-215. His work is groundbreaking in this regard.

⁶⁷ See R. Laughlin, *A Different Universe*, NYC: Basic Books, 2005.

⁶⁸ See P. Needham, *Macroscopic Metaphysics: Middle-sized Objects and Longish Processes*, Cham, Switzerland: Springer, 2017.

⁶⁹ In addition, and maybe surprisingly, since it is often seen as a “cure”, accompanied by sigh of relief, we are suspicious of *multiple realisation* also as an argument against reductionism, as it is wedded to functionalism, and here I feel we sup with the devil, least some times. A critique will have to wait.

⁷⁰ See W.V.O. Quine, “Designation and Existence”, in *Readings in Philosophical Analysis*, eds. T. Friegl and W. Sellars, New York: Appleton-Century-Crofts, 1949, p. 46.

non-competitive is more easily done if one's analysis is underwritten by a doctrine of Creation, which is the ultimate and only true reduction, arguably so. Indeed, the exotic particles of high-energy physics, if read correctly, undermine the materialist's agenda, except for the wilful, and re-present a material order that requires evermore creative imaginations. We should remember, and this is important, it is not mystery we are after, but wonder. Here the nightmare dreams, matter as friend rather than foe, likewise reduction: *Same grapes different wine*.

It wise to note, also, that emergence is quite often reduction in *semantic disguise*. Maybe we can better understand this when we realise that most of what we take to be explanation is in fact *more and more* refined description, models, if you will, which become thicker descriptions, to use Gilbert Ryle's term, popularised by anthropologist Clifford Geertz. After all that's what the old lady's point about the turtle regress was in the story. Quoting Wittgenstein "One might almost say that these foundation-walls are carried by the whole house"⁷¹. Counter-culturally, we should realise that things get simpler as we go up, messier as we descend. It is more promising to think otherwise than the additive logic of Lego blocks, instead thinking of macroscopic constraints that work on the universe, below which, most of the time, *there is no fact of the matter* at the microscopic level⁷². Renormalisation enacts as much as it reflects this very truth⁷³. *Atlas hangs as much as he holds*.

Most certainly we need the tools of both reduction and emergence if we are to be faithful to existence. Two brief examples may help motivate us. Take cancer, there are two approaches to its study, and therefore treatment. First, there is the cell-based Somatic Mutation Theory, which is reductive, and to that end, mechanistic. Second, there is a tissue-based approach, which is more about carcinogenesis, namely, Tissue Organization Field Theory. As with the Super Collider another internecine war breaks out. Here another Weinberg, this time Robert, is involved in a fight for funding against Carlos Sonnenschein. Here we would argue if either side of such a debate took cognisance of the fact that that cancer is a metaphysical term, they may be less inclined to view their respec-

⁷¹ L. Wittgenstein, *On Certainty*, Oxford: Basil Blackwell, 1974.

⁷² See E Adlam, "Fundamental?" in *What is Fundamental?*, Cham, Switzerland: Springer, 2019, p. 10.

⁷³ It may be worthy of note that renormalisation can be argued to provide only epistemological emergence, rather than ontological. But given the above, this is irrelevant.

tive approaches as self-enclosed. In short, cancer is metaphysical. For instance, because given materialism comes universal suffrage, radical democracy: pick your team: Chemo 2, cancer 3. Consequently, except culturally, a true mandate will only come from borrowed logics, and therefore a more expansive outlook. Similarly, in nuclear physics we have two models, namely the nuclear shell model or the liquid drop model. The latter treats the nucleus as an incompressible drop of nuclear fluid, and this does not afford mechanistic explanation, whilst the former does insofar as the nucleus is approached in terms of energy levels. Both are employed if *scientia* is to be as fecund as it should be, and this requires an enriched imagination.

EASTER BREAD

To help escape the stultifying clutches of the layer cake metaphor, adopting instead, the never ending tower, or that of Easter bread, the above examples should be instructive, as they suggest a space between different fundamentalisms. Aiding such discernment we should take cognisance (but very often don't) that physics and philosophy have two very different approaches to the notion of reduction that involve a terminological orthogonality⁷⁴. First, in physics a typically newer and more refined theory is said to "reduce to" an older and coarser theory: a finer theory such as Relativity does in a sense "reduce to" Newtonian physics under the "conditions" that supported the Newtonian theory. Relativity is thus said to "encompass" Newtonian theory. Philosophy, meanwhile, tends to have a higher, less general theory, which is older, "reduce" to a lower, more general and more recent theory. This orthogonality should encourage complementarity, which reality demands of us. A major conclusion is that scientific ontology is plural, not to mention its epistemologies (modes and methods), all of which are still, we argue, beholden to an alethic monism, metaphysically and theologically speaking. That is, we must move beyond the argument surrounding the unity of science vs. the disunity of science, both positions being mirror images of each other; as they presume the same logic (i.e. reduction= univocal unity)

⁷⁴ See M. Berry, "Asymptotics, Singularities and the Reduction of Theories", *Logic, Methodology and Philosophy of Science*, IX (1994), pp. 5-15. Also see L. Sklar, "Types of Intertheoretic Reduction", *British Journal for the Philosophy of Science*, 18 (1967), pp.109-124; and T. Nickles, "Two Concepts of Intertheoretic Reduction", *Journal of Philosophy*, 70, No 7 (1973), pp.181-201.

merely disagreeing on whether that pertains. In terms of unity, which is never *simpliciter*, just like being, rather there is focal equivocity, *pros hens*, at least according to Aristotle and his metaontology, so too with *mixis*, something made manifest by the operation of effective theory, renormalisation, and so on.

Paul Needham points out that, “The problem of mixt has, interestingly, never been resolved or displaced in chemistry”⁷⁵. This is important because of its possible contribution, as an alternative metaphor at the very least, to certain metaphysical and theological problems. In the *Philebus*, Plato designates the limit (*peras*) and the unlimited (*apeiron*) as the first two kinds of being, yet steps decisively beyond this Pythagorean opposition with the introduction of a third genus, namely, mixture (*mikton*), which is a distinctive mode of being, namely, “genesis”, or coming into being (Phil 26d8). Importantly, such genesis does not identify still another form of ideal being but rather the “real” being of what comes to be, which is to say, being emerges as becoming. The *mikton* is interpolated between the “One” and the “Many”, or here between *peras* and *apeiron*. (Interestingly, it was this text that inspired Cantor in developing his own notion of set theory)⁷⁶. Plato’s example of just such a becoming is more than instructive. Spoken “sound which passes through the lips whether of an individual or of all men is one and yet infinite” (Phil 17b). Our ability to discriminate unambiguously between myriads of spoken sounds is conditioned on the availability of an ideal system, that is, the phonemic system of the language. Physical utterances by individual speakers result in wide phonetic variations that only knowledge of a language’s phonological system can organise into distinct phonemes. Hence Plato’s formulation, “the knowledge of the number and nature of sounds is what makes a man a grammarian” (Phil 17b). A *mikton* marks delineation in the realm of becoming relying on certain ideal structures that mix with sensory perceptions: the *mixt* of Being and Becoming. Accordingly, each *mikton* affords an area of knowledge: meteorology with the seasons, medicine with health/disease, and so on.

In a comparable manner, Aristotle’s idea of subalternation can also be interpreted as a form of *mixt*. There, an operational discourse is re-

⁷⁵ P Needham, “Metachemistry”, in *The Philosophy of Chemistry*, ed. J.-P. Llored, Newcastle: Cambridge Scholars Press, 2013, pp.725-743.

⁷⁶ See Kai Hauser, “Cantor’s concept of Set in Light of Plato’s *Philebus*”, *The Review of Metaphysics*, Vol. 63, No 4 (June 2010), pp. 783-805.

plete with other modes of knowledge (e.g., optics employs geometry), what Plato calls an “interweaving”, or “being interwoven” (*diaplakeisa*), or Husserl “intertwining” (*Verflechtung*), as it the case for body and soul, but here by analogy with modes of engagement, or discourse that enable it to function, but of which it need not speak. Such ingredients are indispensable, again to echo the Quine-Putnam indispensability argument for a Platonic interpretation of mathematics: science cannot do without mathematics, and therefore must ontologically commit to it. Arguably, the overly familiar comment of Eugen Wigner’s about the “unreasonable *effectiveness* of mathematics in the natural sciences” now resonates differently, in terms of our employment of effective theory⁷⁷. Theology will argue that for mathematics transcendence is indispensable, as are both the *mathematician* and the *physicist*, both of whom are absent from their own discourse or discipline: again, borrowed logics. The nightmare dreams, for Ockham’s razor is always wielded by someone’s hand. Discourses are separable, yet it is not a matter of mere juxtaposition; there is marriage or union, in Henri de Lubac’s sense: *Lunion différencié*⁷⁸. Historically, marriage is an appropriate term. One of the most influential books in the genesis and spread of the *trivium* and *quadrivium* was Martinaus Capella’s *De nuptiis Mercurii et Philologiae*. A work influenced by Marcus Terentius Varro’s *Disciplinarum libri IX*, which introduced the Posidonian encyclopaedic tradition to Rome in the 1st century BC; itself an echo and major development of the Hellenistic idea of *enkuklios paideia* – a circle of knowledge, one that precludes relativism, whilst at the same time disabling any bid for reductionism. All this infused the thought of Boethius and therefore the entire Middle Ages. Moreover, for Plato, Aristotle, and Aquinas following them, it is true to say that *omnis scientia bona est*. This idea must, however, be set over and against the vice of *curiositas*⁷⁹. Consequently, knowledge must be accompanied by the virtue of *studiositas*. Clement of Rome wrote a letter to the Corinthians, it being the oldest datable document of Christianity, in it we find the following: “The head is nothing without the feet,

⁷⁷ See E. Wigner, “The Unreasonable Effectiveness of Mathematics in the Natural Sciences”, *Communications in Pure and Applied Mathematics*, 13:1 (February 1960), pp. 1-14.

⁷⁸ See Henri de Lubac, S.J., *Catholicisme, les aspects sociaux du dogme*, Paris: Cerf, 1947, p. 287.

⁷⁹ The term *curiositas* was coined by Cicero. The Latin term stems from the Greek words *periergos* and *polupragmon*.

and so the feet are nothing without the head but all conspire (*panta sympnei*) and are united in their subordination to the task of preserving the whole body”⁸⁰. All breath together (Greek *sympnei*, Latin *conspirant*). The originally medical language is extended beyond biology to anthropology, but still further, for the *sympnoia* of the parts is meant, then, to communicate the universe entire (the Cosmos, which derives from the Greek “κόσμος” for order) as a *sympnoia pantōn*, one underwritten by a shared *skopos*, or telos, which is the *eros* of all knowledge. If all knowledge is good, it is because it involves a form of faith. As Augustine says, “believe so that you may understand” (*crede, ut intelligas*). Aristotle concurs: “some trust is necessary for whoever wants to learn (*dei pisteuein ton manqanonta*)”⁸¹. It is a marriage of discourse, a concert of effort that forfeits imperial ambitions, for *scientia* seeks engagement, not subsumption, nor eradication. It is a marriage that does not seek the purely isolated, accompanied by the pretence of self-sufficiency or aseity.

AQUINAS: A MIXIS OF PLATO AND ARISTOTLE

When it comes to theology, there is a grave temptation, it being a species of the one already discussed – dualism, and its progeny the fundamentalist base, hence monism. The Dominican, Nicholas Kahm brings this temptation to our attention well: “Being is not vertical nor teleology horizontal. The imagination should be repressed here”⁸². Remember there is no up nor down, just as we will see in terms of *the imago Dei*, there is no past and future, conceived in strictly linear terms – how could there be given final causality, which is for Aquinas (flowing the author of the *Liber de Causis*, itself a paraphrasing of Proclus’ work) *the cause of all causes*⁸³. Theology must think in lateral times, for we never know not what priority will be, what will be first or last, up nor down, consecrated, or mundane. We argue that Ratzinger is correct to say that “The anthropology desired should weld together Plato and Ar-

⁸⁰ Clement, *I Epist. Ad Corinth*, 37.4. This echoes a passage from the Hippocratic book – *Peri trophēs* 23: “One confluence, one conspiracy, all in sympathy with one another!”

⁸¹ *Sophistical Refutations*, 2, 165b3.

⁸² Nicholas Kahm, OP, *Aquinas on Emotion’s Participation in Reason*, Washington, D.C.: CUA Press, 2019, p. 61.

⁸³ For a recent article on finality, see David S Oderberg, “Finality revived: powers and intentionality”, *Synthese* (2017), 194, pp. 2387-2425.

istotle precisely at the points where their doctrines were mutually opposed⁸⁴. This is exactly what Aquinas does, ignoring tribal Thomist protestations to the contrary. Aquinas argues for a *mixt* of ascent and descent – uniting Aristotle and Plato twice. Crucial to thinking in a lateral manner is the multivalent approach that Aquinas takes to the soul, that reveals his metaontology. His two main approaches are either one beginning with descent (into matter) or one beginning with ascent (from matter); the latter begins with the soul as form, whilst the former treats the soul as an intellectual substance or creature. The two approaches can also be characterised as being either more theological (descent) or philosophical (ascent), though never as wholly distinct but more in terms of emphasis. There is a unity here, in terms of anthropology, despite philosophy beginning with form and then defining the soul as the highest form, which begins to transcend matter in its operations; whilst the theology beginning with the soul as the lowest of the intellectual substances that requires matter to operate. This mixed approach converges on the same truth⁸⁵.

Analogously, just as the lowest intellectual substance must be in union with matter, so too must the soul after death, we call this need resurrection. Aquinas employs both methods to avoid certain problems. By beginning with form, that is with ascent, Platonic dualism is avoided, for without ascent it would seem there is no reason for a soul to be embodied. Substance, or descent, avoids materialism, wherein there would be no soul, and therefore no human at all. The highest form concludes that the soul is complete in existence, it has an incorruptibility, but is incomplete in essence, as it is only substance in a loose way: *hoc aliquid*. Put another way, the soul does not need to be *in alio* to be, it has *per se* existence, although it does need to be *in alio* to be complete in essence, for only the composite, the *mixis*, qualifies as substance. It seems that if the soul as substance is complete in existence but not in essence, form seems to be complete in essence but not in existence, hence its ascent. We can think also of descent suggesting the Incarnation: an intellectual substance became embodied, likewise the passion, after all someone died. The resurrection is the ascent, for the divine person recalls their body, to the point that Christ rises with His scars validating history.

⁸⁴ Joseph Ratzinger, *Eschatology: Death and Eternal Life*, 2nd ed., trans. Michael Waldstein, Washington: CUA Press, 2007, p. 148.

⁸⁵ *QDSC*, 2.

We should note that the unicity of both “up” and “down” is intimated insofar as the soul and prime matter are analogous to each other – in terms of potentiality, as Aquinas says they are⁸⁶. Similarly, soul (theology or descent), and body (philosophy or ascent) are born together. By way of an aside, we can maybe discern such a complementary approach in the Gospels wherein the angel Gabriel, on the one hand, announces the incarnation to poor, Jewish shepherds, which we can think of as descent or condescension, in this more strictly theological sense. On the other hand, the wealthy Gentiles, namely, the “Wise men”, do not receive any such message, yet in a more Aristotelian sense of ascent, use astronomy to lead them. In the end, though, they must be told by a Jewish shepherd were the King is born. This discernment of the Incarnation also has echoes of the patristic understanding of the parable of the lost sheep, this being interpreted as creation itself, which God sent his Son to save; something more understandable if we have an expansive zoology.

Against modern imaginations, we should note that for Aquinas “the soul contains the body”⁸⁷. The crucial point being that rather than any ghost in the machine (Gilbert Ryle’s phrase) it is truer to speak of *a machine in the ghost*. Yet, conversely, the soul is a part of the human⁸⁸. Here’s our *mixis*. Also, crucially, Aquinas tells us, “It is plain that a human being naturally desires his own salvation. But the soul, since it is a part of the human body is not the whole human being, and my soul is not I (*anima mea non sum ego*). Even if the soul were to achieve salvation in another life, it would not be I or any other human being”⁸⁹. The human soul has a double ontological status: existentially independent, something witnessed in its intellectual operations, yet dependence on the body. This dependence is so important that it points to the resurrection, one prefigured in every act of cognition, at the same time echoing the Passion. Aquinas points out that even the separated soul never loses this essential dependence on the body, even in the very presence of God. The dependence

⁸⁶ See SCG II, 76, No 1563. Also see, R.T. Lambert, *Self-Knowledge in Thomas Aquinas*, Bloomington, IN: Author House, 2007, ch. VIII.

⁸⁷ *ST*, 1.8. ad 2.

⁸⁸ “Not every particular substance is a hypostasis or a person, but that which has the complete nature of its species. Hence a hand, or a foot, is not called a hypostasis, or a person; nor, likewise, is the soul alone so called, since it is a part of the human species”, *ST*I, q.75. a.4.

⁸⁹ *Super I ad Corinthos*, 15.2.

of the soul is the very point of commonality between Plato and Aristotle that Aquinas discerns so well, and he is able to do so because his imagination is truly metaphysical, and not physical which seems to subdue any operational principles by subjugation to spatiality: Here as opposed to there; up contrasted to down, in an almost mechanical fashion (here the word “mechanical” is telling, as it stems for the word for trickery); such thinking being the fruit of a truncated zoology. What is most crucial is the prioritising of act over potency, which is more important than that of form and matter, indeed it somewhat relativizes those concepts. This way, it matters less if something is material or immaterial, except zoologically speaking, but rather whether it is in act or not.

This democratises Plato and Aristotle’s approaches. By that is meant, we think of Aristotle in terms of sensibility actualising the soul in terms of all knowledge, including self-knowledge. That is, without sensible species the soul remains unknown to its very self. It must be actualised. From a wholly different perspective, or so we are told, the soul looks to higher spiritual intellects, in so doing is leaving the sensible behind. In short, Aristotle has the soul, which does not know itself, look down, whilst Plato has the soul, which does know itself, look up to higher self-knowing angelic intellects. In one sense this is true, but I’m hesitant to admit that, for its truth is minimal when compared to the misguided inferences conjured from this relatively banal difference. Both Plato and Aristotle pursue the same quarry. Aquinas realises this and works out a fitting mediation of the two trajectories. If we truly prioritise act over potency, abandoning the seduction of Lego, with its additive logic, wherein we spatially build and demarcate, and return to our zoology, we realise that the soul though looking to immaterial intellects does so to look for actualisation – this is the commonality between Plato and Aristotle, one that can be emphasised when recalling that such angelic intellects belong also to the *menagerie of creation*. The zoology of such creatures is different, no doubt, but their position on the tops of trees, or indeed in the air, renders them analogically like those that forage on the forest floor. *All creatures forage for act*. Except, of course, God; yet even then God became flesh.

In an ingenious passage, Aquinas’ points out that the soul does the same thing in both Aristotle and Plato, and in the latter therefore the soul is no different than anything deemed lower:

Here we ought to consider carefully that before, when the author treated the knowledge of intellects, he said that the first intellect knows

itself alone, as he said in proposition 13, because it itself is ideal intelligible form. But other intellects as close to it participate both the form of intelligibility and the power of intellectuality from the first intellect, just as Dionysius says in Chapter IV of *On the Divine Names*, that the supreme intellectual “substances are both intelligible and intellectual”. Hence each of them know both itself and what is above it, which it participates. But because an intellectual soul participates in the first intellect in a lower way, it has in its substance only the power of intellectuality. Hence it knows its substance, not through its essence, but, according to the Platonists, through the higher things that it participates; and according to Aristotle in Book III of *On the Soul*, through the intelligible species, which are made to be in a certain sense forms, inasmuch as through them it comes to be in act⁹⁰.

He never again refers to this work, because he realises it’s true source: Proclus. Here Aquinas finds a middle ground between Descartes or illuminationism, and Hume or empiricism; or differently, between privileged self-access and self-opacity. The former entails a self that has a supraconscious self-awareness independent of experience; whilst the latter is more Aristotelian insofar it is tied to experience. Both are impossible – the bare self, or no self – being so because they are generated by dualism (just as each are the mirror image of the other), and dualism is false for many reasons, but the main central reason is that it generates a hidden third that absorbs the purported two⁹¹.

FREEDOM LEANS ON ME: INDEPENDENCE AS DEPENDENCE

As discussed above, the soul betrays that it is not fully immersed in matter, doing so in two seemingly contradictory ways. First, dependence, which is twofold: It requires a body (what is either birth or death after all?), and one with requisite operations (and therefore health). In addition, it requires species to know itself, that is, to be actualized – as we know, here Plato and Aristotle are joined, and in this way so is the soul in terms of operation pre-mortem (pre-lapsarian and post lapsar-

⁹⁰ *Liber de causis*, prop. 15. See Therese Scarpelli Corey, *Aquinas on Human Self Knowledge*, Cambridge: CUP, 2014. This is the most illuminating book on this topic.

⁹¹ See Conor Cunningham, *Genealogy of Nihilism: Philosophies of nothing and the Difference of Theology*, London and New York: Routledge, 2002.

ian) and post-mortem (pre- and during beatitude). Second, independence, again twofold: The soul has its own independent act of being and operates without an organ. Its independence accommodates or picks out its dependence and vice versa. Surprisingly this is overlooked. So, we can argue that a certain operation of the soul transcends matter, yet conversely this very achievement signals and highlights, if we take the time to notice, its sheer dependence on that which it is not, as such. Again, the integral human is from the beginning *most dependent and most independent*. The former, because it is only partially determined by a general processes, that is, its species requires help, not in terms of enhancement, but just in terms of its integral nature, as it was created in grace. Zoologically, the human's altriciality speaks volumes to this. Yet this vulnerability is the source of its exceptional abilities: We only got to the moon, wrote King Lear, or composed the Goldberg Variations because of it.

Two central points in what follows are necessary to support what we have argued throughout. The first of these is an often overlooked, yet fundamental distinction, namely that between the soul as form (*forma*) and the soul as mover (*motor*). This helps bring to our attention *three real distinctions*, each to be thought of as a fundamental *mixt* and mixed relation for humans. The first of these is the well-known real distinction between essence and existence (*esse*), but this must be accompanied by the real distinction between by essence and *operari*; and lastly, nature (human) and grace (divine). None of these exist apart, as self-identical or in some unmixed fashion except in God's oneness as *actus purus* or *ipsum esse subsitens*. Only God's essence is existence; only God's essence is His power; and only in God are grace and nature one, as they are in Christ. We should, however, tread carefully, for the theologian may be too quick to agree that such fundamentally real distinctions are united in God only, any other position being heretical. Such easy agreement, in short, misses the point, indeed it masks a blind spot. It is not just that these real distinctions are to be found as one, or self-identical in God. Sure, but no. Rather, the stalking horse here is that they also do not exist extra-mentally as separate things, so to speak – nature over there, whilst grace resides somewhere else; likewise, essence and existence, and of course this stands for *operari* too. All of which will aid our understanding of humans, their anthropology, or better, *zoology*, as mentioned already, only then is less presumed, something the Incarnation teaches us. The idea of a pure nature, a pure essentialism, or a pure operation or mover

is absurd, but this is what any dualism presumes, and this is tantamount to nihilism.

The real distinction between nature and grace will not be considered here, except insofar as to say that for the human they are integral⁹². The creatures we are from our inception in Eden, in terms of integral nature, and there is nothing else besides, except by abstraction, this zoology is our fundamental *mixt*: a creature created in grace; this being analogous to our form and matter, soul and body. Our soul is open to all things, including a *capax Dei*, but cannot achieve all things; here it is analogous to prime matter. In the first real distinction, in terms of perspective, we know that *essence* brings participation of existence to the fore, whilst the last calls to our attention that which is participating, *this* creature, the human, and their *imago Dei*. We know that nature is always graced because immortality was a gift in Eden. This is summed up well by St Augustine's distinction between the ability not to die (*posse non mori*) and the perfect state of not being able to die (*non posse mori*). This dependence is reflected in the first human's reliance on phantasms, or sensible mediations for cognition, and the fact that we could within our own capacities as a graced creature, attain natural virtues, yet even then could not attain the exceedingly good⁹³. Now we can do neither. That's the only difference. On the one had the first real distinction is accentuated because of the withdrawal of the prior gift of immortality, death brings participation tragically to the fore, and, in addition, the loss of natural virtue. Now we lack this immortality, as we are now subject to death. Concomitantly, the ability to achieve infused *and* natural virtues is gone. Yet in a sense there is no real difference pre and postlapsarian, in terms of grace and nature. *There is nothing new under the sun*, even in Eden.

CONCLUSION: FREEDOM AS *MOUSIKĒ*

Aquinas offers three forms of *per accidens* motion, and it is the last of these that is of interest here, namely, that which moves according to a part. This way, the soul, which is simple, yet finite, must move according to its parts. But how does the soul have such parts? A soul does insofar as

⁹² See Conor Cunningham "Natura Pura: Invention of the Antichrist? A Week with no Sabbath" in *Communio: International Catholic Review*, (December 2010), pp. 242-255.

⁹³ See *ST-II*, q.109, a.2.

the parts are thought of as powers, and it is in this way that the soul is not to be approached as forma but as motor, and in so being as multiplex. Echoing God as *bonum diffusivum sui*, and as the soul's *esse* flows into the body or matter, here the powers of the soul flow from the subject or its form, but do not signify the essence of that soul. Such powers are the soul's parts in relation to total power (*totalis virtutis etius*), or *totum potentiale* (potential whole), and not parts in relation to its essence. Accordingly, the type of being they possess is *inesse*⁹⁴. The potential whole is to be contrasted with a universal whole which is present to each part according to its whole essence and power. "The soul is a form insofar as it is act and likewise insofar as it is a mover, and thus it is according to the same thing that it is a form and that it is mover, but nevertheless its effect insofar as it is a form and insofar as it is mover differs"⁹⁵. Crucially Aquinas says, "In consequence of the fact that the soul, then, is the form of the body, there cannot be any medium between the soul and the body. But in consequence of that fact that it is a mover, from this point of view nothing prevents many media there: for obviously the soul moves the other members of the body through the heart, and also moves the body through the spirit"⁹⁶. Again, our tripartite anthropology.

First, it should be noted that the highest powers of the soul *do not virtually contain* that which lower powers can do (here Aquinas follows his teacher, Albert). The soul certainly contains all powers, in terms of its essence, for the soul causes the many to flow from its unity, but if we speak in terms of the powers themselves there is no nesting or reduction. That is to say, the higher power does not contain the lower. Put differently, the power of the potential whole (*totum potentiale*) is not abrogating the validity of the lower. Reason cannot do what kidneys do, no matter how hard it thinks. The lower are not united in the higher (this is true for *scientia* also). The soul as principle of all powers possessed contains them virtually *as their sole cause* but *does not contain them formally*. Aristotle's image of the tetragon in a pentagon is apposite. This is obvious, for the kidney left to itself, has no reason to do what it does, and would be unable to; similarly, for reason without kidneys, or some functional equivalent. Indeed, for Aquinas there is no continuum on which

⁹⁴ See Niholas Kahm, *OP. Aquinas on Emotion's Participation in Reason*, Washington, D.C.: CUA Press, 2019, p. 42.

⁹⁵ *QDA*, q.9.ad.2.

⁹⁶ *SPC*, q. 3.

powers reside, likewise the sciences, there being no hierarchical cake. The soul unites powers at the same time as it delegates them independence, otherwise independence would not make any sense: a kidney on a bicycle⁹⁷. Yet independence is real; “If there are two people, one of whom writes one part of a book and the other another part of, then ‘we wrote that book’ is not literally correct, but a synecdoche inasmuch as the whole stands for the part”⁹⁸. The soul, in terms of mover, is Master of one (intellect), and Jack of some, and useless at many trades, so to speak. In one sense, corruptibility of humans is tied to their matter, but again, only in this very particular sense. The soul is corrupted in being separated, it could not, in terms of its operation, be otherwise, and the alternative could only be utter annihilation. Therefore, the form its corruption must take, zoologically speaking, is separation. If one argues for a separated soul that is in some sense, indeed any sense, complete or untouched by death (the survivalist position, so-called), then dualism is unleashed, and docetic disintegration follows, and where is the freedom in that? To be free is to serve, and the soul serves the body as the body serves the soul. Both serve the person. Again, the Proclean idea that hierarchy is suffused with both converting love (*eros epistreptikos*) and providential love (*eros pronoetikos*), by which “lower” and “higher” serve each other. That’s the freedom of their *mousikē*, which we can see and hear before our very senses, and in every cognition. The nightmare always dreams.

⁹⁷ *In De sensu et sensato*, 18: 449a9.

⁹⁸ *ST*, III, q.67, a.6, ad 3.