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Philosophy, Theology and the Sciences
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Editorial Manifesto

1.

This journal will provide a new platform for constructive and critical interactions between the natural sciences in all their varieties (from physics and biology to psychology, anthropology and social science) and the fields of contemporary philosophy and theology.

The editors are well aware that such an enterprise takes place in an academic context shaped by a long history of antecedents as well as by present day conflicts of interpretation. Theology and the natural sciences have hardly ever existed in complete separation from each other. The history of their relation is characterized by deep tensions, but also by mutual inspiration and cross-fertilization. The natural sciences have shaped the world view of secular societies and have contributed to what the German sociologist Max Weber has called the “disenchantment of the World” (“Entzauberung der Welt”)¹. By this he means the fundamental conviction that the world of nature is free of mysterious forces and that everything in our world can – in principle – be mastered by means of empirical studies, mathematical calculation, and laws of nature. Still, religious convictions persist and provide a vital force in the life of many, challenging the secularization thesis that supposed religious conviction would disappear in modern societies. Since both science and religion have a deep and continuing influence on modern societies, critical reflection on their mutual relationship, their differences and common interests is a crucial prerequisite for understanding both of them as well as the central cultural developments of our day.

At the beginning of the 21st century, we are also witnessing ongoing specialization and differentiation within the natural sciences. New disciplines are being established which transcend the traditional distinction between the sciences and the humanities. Individuals working in such fields as evolutionary theory, sociobiology, neurology, and cognitive science claim to be able to handle core topics in the human and social sciences such as

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consciousness, the emotions, and societal formation and to interpret them according to the methodology of the empirical sciences.

Theology as a self-reflective form of religious thought must explicate religious notions in a world that is deeply influenced by scientific world views. It reflects upon religious convictions against the background of the scientific understanding of truth. Theology acts to its own detriment when it ignores the significance of the empirical sciences.

Both science and theology need philosophy to perform the bridging function, lest their “dialogue” deteriorate into mere equivocation, as too frequently happens in practice. In addition, the fields of philosophy of science and philosophy of religion often present new challenges to the self-understanding of science as well as to views taken for granted within theology. Hence the three indispensable foci reflected in the title of this journal.

2.

Future issues of this journal will identify relevant areas of common research and reflection. We do not presuppose any particular answer or scenario, either of consonance or of conflict, between science, philosophy and theology. What we are indeed convinced of, however, is the indispensability of ongoing dialogue. As they seek to defend their methods and conclusions, scientists, philosophers, and theologians are obliged to engage in rational discourse and the quest for the best possible arguments. All three disciplines share the common interest to make sense of reality from within our finite, human perspective. “We all must start in the middle,” 2 whether one starts in the laboratory, or with rational intuitions and phenomenology, or categories of revelation and religious experience.

We are convinced that the dialogue between the sciences, philosophy, and theology does not take place in a static, timeless realm of absolute truth. Instead, it involves a common striving towards shared meaning and understanding. Truth or truths become relevant as they connect with particular questions, particular practices, and particular interests, including, for example, the technological developments of scientific ideas and the liturgical and practical expressions of religious belief. Symbolic systems in science, just as in philosophy and theology, do not have only referential but also explana-

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tory and interpretative functions. Signs always mean something to someone in a certain context. Thus, to reflect philosophically on the cultural and historical conditions of both science and theology is a necessary component in understanding the semantics of both science and religion.

3.

The main task of this journal is therefore to provide a common platform for dialogue according to rigorous academic standards, yet one that remains open and attentive to the full range of types of scientific and theological discourse. The Journal *Philosophy, Theology and the Sciences (PTSc)* will provide a forum for asking and analyzing meta-scientific questions (sometimes referred to as “the big questions”) that arise at the intersection of these three disciplines, questions for which there is often no space in the everyday work of scholarly research. Articles will bring together real science and real theology, not lazy stereotypes or straw-man constructs that are invented merely to be knocked down by simplistic arguments. Authors will avail themselves of the best available philosophy to stimulate and in order to mediate the dialogue and to offer critical perspectives on scientific and theological contributions.

We therefore invite all scholars, religious or non-religious, to participate in the endeavor. This forum invites intellectual exploration and risk-taking, controlled by academic rigor and the force of the better argument. It provides the rare opportunity to get to know the truth-claims, the meaning, and the methods of a range of different disciplines that inquire into common questions. It encourages analyzing the relevant phenomena not from afar but from the inside out.

Although this journal is Europe-based, it is not meant to be a Europe-biased forum. Four editors and a board of experts from different countries, disciplines, and backgrounds are responsible for preserving its range of subjects, its range of scientific and cultural diversity, and the quality of its articles.

Each volume will consist of two issues a year, each of approximately 120 pages in length. It will include an editorial, three to five main articles, and book reviews. All articles and contributions that exceed eight pages in length will be double-blind peer-reviewed.

During the first two years, every issue will be devoted to a specific theme and will be compiled by one of the four editors. Articles for these opening issues will be specially commissioned. The topics for the journal’s first four
issues will be “Naturalism” (Niels Henrik Gregersen), “Human Nature and Evolution” (Celia Deane-Drummond), “Neuroscience and Morality” (Gregory Peterson), “Contingency” (Dirk Evers).

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Niels Henrik Gregersen, Copenhagen
Gregory Peterson, Brookings
Varieties of Naturalism and Religious Reflection

Methodological naturalism is integral to the practical pursuit of science, insofar as scientific explanation is about identifying causal mechanisms, co-depencies in networks of nature and deep-seated mathematical structures. Within the game of science, reference is not permitted to immaterial forces such as God or souls. The question is, however, whether science hereby simply *ignores* other forms of explanation, or is bound to *deny* that other explanations may be appropriate for answering other questions, such as limit-questions, why-questions, and questions of meaning and value. Only in the latter case, a methodological naturalism grows into a metaphysical naturalism. The idea of scientific or “hard” naturalism – the view that science is the only arbiter of truth – became prominent within American philosophy since the 1950s, and is still an influential movement. In recent years, however, this strict version of naturalism has increasingly been questioned. One reason is the fact that an explanatory pluralism appears to be a rule rather than an exception in most areas of science, and that limits of science have come up in quantum mechanics as well as in the broader areas of complex evolving systems, whose trajectories can’t be computed in advance. But also independent philosophical considerations may play a role. Most scientists would think that they know something important about their beloved ones which could not be replaced by having access to their genomes and brain scans. Many naturalists have therefore promoted a more flexible or “soft” forms of naturalism. Though still metaphysically opposed to supernaturalism, it is liberal by including broader humanistic and even sometimes religious concerns.

This first issue of *PTSc* reflects the new situation by probing the religious relevance of recent developments in science and philosophical reflection on the frontiers of naturalism. *Holmes Rolston III* points to aspects of the contemporary world view which may require a “deeper naturalism.” The way in which causality is mixed with openness enables the universe to be full of surprises, some of which also function as launching pads for new emergent levels of organization. The role of information constitutes a special case. “Information is information, not matter or energy,” as Norbert Wiener argued already in 1948 in the context of cybernetics, and similar view-
Varieties of Naturalism and Religious Reflection

points are now expressed by standard evolutionary biologists such as John Maynard Smith and George C. Williams. What is the relation between the cybernetic concept of information, philosophical arguments about *telos*, and theological concepts of a pervasive divine *logos*? Rolston asks this question with reference to the incalculable “hyperimmensity” of mental complexity in human thinking, whose combinatorial possibilities dwarf the number of quantum events in the universe considerably. He also points to the emergence of morality and caring for others as ingredients in any philosophy of nature. Our universe is creative – leading from the universality of physics to the rarity of life and further on to the singularity of human awareness. While some prefer to stay wondering at the surprises of nature, others would think that meaning and caring is somehow front-loaded into natural systems.

Also Wesley J. Wildman seeks a broader understanding of naturalism, able to host a religious appreciation of nature. Based on four ontological tenets of naturalism, religious naturalists argue that nature itself is sacred. There is no deity to be conceived of as self-aware, agential or caring, but it is legitimate to ask about the Whence of nature that is transcending itself into embodied creatures with sentience and mind. While a personal theism is ruled out, there is space for celebrating “the ultimate existential value of unlimited self-transcendence for emergent beings.” According to Wildman, this view finds resonance in ancient Advaita Vedanta in India, in Daoism in China, and even in Thomas Aquinas’ concept of God as Actus Purus. From this perspective, religious naturalism has long roots back in history, is workable as a spiritual and moral pathway for today, and is open towards the future. While a personal theism in the axis between Athens and Jerusalem tends to be overly flexible when fending off counter-indicating data, Wildman argues that a religious naturalism may be better equipped for taking advantage of corrective resources for its own improvement.

JeeLoo Liu brings Chinese conceptions of *Qi* into discussion with contemporary Western naturalism. She argues that Chinese Qi-naturalism can be interpreted as a liberal naturalism though it is also more liberal than most Western forms of liberal naturalism, since there is no clear line of demarcation between the material and immaterial. In the classic works of Daoism, following Laozi and Zhuangzi, there is either a primordial *Qi* preceding the differentiation between heavens and earth, *yin* and *yang*, or a primordial void, or chaos. Neo-Confucians such as Zhang Zai, however, argued that hereby the emergence and division of *yin* and *yang* can’t be explained. Rather, from the beginning *Qi* is something in movement and transformation, inherently linked to a cosmic principle of order (*li*), according to which *yin* and *yang* are constantly exchanged. This development of a Qi-naturalism
from about 1000 CE was then brought into contact with Einstein’s worldview by Xiong Shili in the 20th century. Qi is here identified as an “adjective of mass and energy,” depicting the ongoing fluid transitions between mass and energy, and eventually leading to the organic holism of biological creatures. This view asserts a mental realism in contrast to epiphenomenal interpretations in Western naturalism. The very fact that ordinary baryonic matter comprises less than 5% of the universe indicates that standard materialistic conceptions cannot fully capture the nature of the universe. According to JeeLoo, an irreducible conceptual pluralism reigns, and there might be a place for aspects of a Qi-naturalism in future science.

In his philosophical audit of the gains and shortcomings of naturalism, Charles Taliaferro points to the fact that naturalism – like the bank sector – may seem “too big to fail.” Following Thomas Kuhn’s conditions for paradigm changes, naturalism will prevail in the absence of alternatives. In the present context, however, Taliaferro focuses on one problem in naturalism: its denial of a first philosophy. The practice of philosophy, according to Taliaferro, is certainly too big to fail. For, as a matter of fact, also strict naturalists such as David Armstrong, Jaegwon Kim, or Daniel Dennett exercise a primacy of philosophy in their ways of portraying the basic assumptions of naturalism. Leading naturalists thus presuppose the reliability of philosophical concepts, while their own elaborations seem in need for further philosophical clarification. Moreover, while naturalist philosophy may, or may not, be too important to fail, Taliaferro argues that the goals of this new journal, as expressed in its editorial manifesto, certainly does suggest a primacy of philosophy as well as the irreplaceability of the pursuit of theology when explicating the relevance of science for religious self-reflection.

Finally, I myself criticize the naturalist assumption of a principal divide between nature and God, the natural and the supernatural. In classic forms of religion, there is no such divide, and the idea of God as “supernatural” is a relatively late invention in the history of ideas. Much of contemporary theology and philosophy of religion is engaged in articulating non-supernaturalist views of God. Three candidates are compared and evaluated: Owen Flanagan’s so-called “expressivist theism,” in which the divine is a predicate of nature, Mark Johnston’s ground-of-being theism, according to which God is the self-donatory Presence in all that exists, and the author’s infinity-based view of God as expressing a distinct nature of love in and through cosmic and biological evolution. While the two first options situate concepts of the divine firmly within standard naturalist assumptions of the Causal Closure of Nature, the latter model presupposes the primacy of the divine while following a naturalist principle of continuity between God and world, even to
the point of an identity of divine activity and natural events. This view, it is argued, is fully compatible with empiricist versions of naturalism, while critical of inflationary forms of metaphysical naturalism.

With this inaugural issue of PTSc, the editors wish to welcome all new readers as well as new prospective authors. Only in your company, and in your accompaniment, can the goals of this journal be fulfilled.

Niels Henrik Gregersen, Copenhagen
Does a plausible worldview need some explanations that exceed the natural? Hard naturalisms insist not, but softer, or more open naturalisms find that natural processes can produce ever more complex results – moving from matter to life to mind – in a superb natural history. This invites a religious naturalism, and challenges it. Repeatedly the critical junctures require analysis pressing beyond merely scientific explanations: whether such narrative history is self-explanatory, whether each stage is sufficient for the next when more emerges out of less, what account to give of the creative genesis found in cybernetic genetics, the rise of caring, surprising serendipity, the opening up of new possibility space. Even scientific rationality depends on non-empirical logic, particularly in mathematics. Thoughtful persons are the most remarkable result arising out of natural history. If there is no supernature, at least nature is super. Further still, the intensity of personal experience suggests the Presence of transcending divine Logos, in, with, and under nature.

1. Nothing but Nature?

When something has been explained as being “natural,” are explanations over? Local scientific explanations (how it rains) leave room for more inclusive explanations. Why is there the phenomenon of water with its unique properties, making life possible? One may get a further explanation how water came to be formed or placed on Earth, the polar nature of the water molecule, its liquidity, and so on. But there will linger the still further question: whether the presence of water signals any propensity of nature to support life. That will move from physics toward metaphysics, and if one claims that these metaphysical explanations too are more natural activity, we start to become concerned that the explainer has become so resolutely naturalistic that nothing is ever likely to count as a trans-naturalistic form of explanation. True, comes the naturalist’s reply, there is nothing but nature, but nature can be quite surprising.

A frequent conviction is that science demands a naturalistic metaphysics. Science shuts out any transcending (= supernatural?) monotheism. Or if it
does not demand it, it makes a naturalistic metaphysics the most plausible hypothesis. That is the sort of explanation that has worked so impressively for four hundred years in science, and so: Keep all explanations natural. Celebrate a nature that can evolve into spirit, perhaps uniquely so in humans. Distinguish culture from nature if you like, but no dualism is allowed: metaphysically, culture too is natural, not supernatural. Keep it all in a naturalistic explanatory box – though you may have steadily to enlarge the box.

Naturalists will concede that many fundamental issues about the universe are unsettled. What came before the Big Bang? Is there life only on Earth? Some will be settled in the future, some may never be settled. But what we do know (or what is at least the most plausible expectation) is that if any answers ever come they will be of the naturalistic kind, and not of any supernaturalistic kind. There will be limit questions. Why is the world mathematical? Rational? Why are the contingencies what they are? These are philosophical questions, but any answers will come by putting some spin on what the natural sciences find, and not by finding any divine behavior shaping the nature of nature.

This is often coupled with the view that the Biblical accounts of divine activity are couched in a pre-scientific mythology, an outdated box. Any truth there must be de-mythologized, which means to recast it into something congenial to science. One retains the kernel of truth removed from an outdated husk. This kernel can be expressed existentially, and non-mythologically (as in Rudolf Bultmann). But is this kernel scientific, or naturalistic?

One problem with holding that all explanations must be naturalistic is that it is hard to know when explanations might be over. This is true whether science seems to be going further and further up, out, back, or down. The universe – this universe at least – is some 13.7 billion years old. If one goes back to the start up Big Bang, what then? What before? Why the sort of universe we happen to have? If, or when, further explanations are forthcoming, will their character be scientific, or metaphysical, or religious? Or will this depend on distinctions we will have to formulate when we have such explanations in hand? Scientists are not likely to say that we have gone all the way down with the discovery of the Higgs boson. They may not think that we will ever go all the way down – partly because there is no all the way down, partly because doing such science becomes progressively more theoretically and empirically complicated, counter-intuitive, and expensive.

Naturalism, like theology, comes in versions. In what we might think of as a baseline hard naturalism, nature is all there is; nothing supernatural exists. Nature is its own eternal necessary and sufficient cause. Determinism
is true, at least statisitico-determinism (washing out microscopic indeterminacies). Nature is fundamentally nonpersonal; humans are epiphenomenal. Mind has evolved from matter but is nevertheless eccentric to it. Nature is essentially value-neutral. Human values are real yet nothing more than human values, our own creations. They neither have nor need any explanation outside themselves by grounding in natural or sacred values. The scientific method is the only route to truth; every other supposed method is myth and emotion.

More recently naturalism is often of a “softer” kind, a liberal naturalism\(^1\). Nature contains within itself a creative, transformative principle, producing emergent novelty. This results in freedom and directedness increasingly in the higher evolutionary forms. Nature is simple and non-personal across great ranges, but locally and at complex levels becomes personalized. Persons in their cultures stand in essential continuity with nature. Both the physical and the psychical dimensions of nature are keys to its understanding. Values are not all human values; there is intrinsic value in natural things. The scientific method can teach us much but not all about nature. Philosophical and religious judgments are required positively to evaluate its meanings.

We next move through some half dozen shifts in perspective arising within the natural sciences opening up the possibilities of a deeper naturalism, a nature about which one can be religious. But these same shifts equally keep open the more ultimate question whether nature is all that there is, the question of transcendence.

2. Intervention, Causes, Gaps, Chaos, Openness

Across the last century, beginning with the (once) “new physics,” and increasingly in recent decades in the biosciences, nature has an openness mixed in with its causality. Classical naturalists insisted, against the theologians, that the natural world doesn’t need any interfering with. Nature has no gaps, needs no additives. It is a seamless whole. But naturalists do not and cannot trace their causal chains in detail back through all the complexities and contingencies to the Big Bang. They find them in some places, and project them for the whole. Both in the nitty-gritty of astronomical history (why is there our solar system with its nine planets) even more in our

\(^1\) See De Caro and Macarthur 2004, 2010; Hogue, 2010; Crosby 2002; Stone 2008; Drees 1996.
Earthen planetary history (trilobites becoming elephants), they find causal networks with chaotic bubble holes. Still, it will be claimed that no further explanations are needed, or in order. Law and chaos is all the explanation there is, they mix creatively, but no more needs to be said.

But perhaps something more does need to be considered. The matter-energy networks have some remarkable properties. Consider the phenomena commonly gathered under the term “anthropic principle,” a term originated by cosmologists. In the last half century scientists have found dramatic interrelationships between astronomical and atomic scales that connect to make the universe “user-friendly” and “fine-tuned.” Astrophysical phenomena such as the formation of galaxies, stars, and planets depend critically on the microphysical phenomena. In turn, those midrange scales where the known complexity mostly lies, depend on the interacting microscopic and astronomical ranges2.

From one perspective, in the Big Bang everything is flying apart in a universe continually expanding and generally uniform (isomorphic); but from another perspective, there are local departures from the overall smoothness. In these non-isomorphic regions, under the influence of gravity, matter clumps up into stars, into galaxies, the loci of ongoing creativity. The particulars of such stars and galaxies may depend on earlier random fluctuations, perhaps even quantum indeterminacies. Or they may depend on the intersections of previously unrelated causal lines (stars crashing into each other), or involve chaotic features. At the same time, the overall processes are lawlike (making celestial mechanics possible, or explaining stellar evolution).

The universe so huge that we can see only the parts of it in our light cone, in which the light has had time to get to us. The Hubble Space Telescope has imaged galaxies over ten billion light years distant. But if the scale of the universe were much reduced (to galaxy size for instance, 100,000 light years across), there would not have been enough time for stars to form and generate the elements beyond hydrogen and helium, elements which later make life possible. If the expansion rate of the universe had been a little faster or slower, then the universe would already have recollapsed or the galaxies and stars would not have formed. Change slightly the strengths of any of those four forces that hold the world together, change critical particle masses and charges, and the stars would burn too quickly or too slowly, or atoms and molecules (including water, carbon, and oxygen) or amino acids (building blocks of life) would not form or remain stable.

2 For summaries of a large literature, see Barr 2001; Leslie 1989.
Nature aggregates and builds. Across this long timespan in the rapidly expanding universe, the stars are the furnaces in which all but the very lightest elements are forged, a process called nucleosynthesis (Clayton 1983). The stars run their courses and some explode as supernovae to disperse the heavier elements from their production sites throughout space. Such matter is condensed as planets, and life evolves out of such elements. Further, the various heavier elements (carbon, oxygen, sulphur, nitrogen, silicon - all of the elements heavier than hydrogen and helium) are synthesized in proportions that make later planets and life possible.

This energetic matter not only clumps, it complexifies. These elements, made of protons, neutrons, electrons, inner positive nuclei and outer negative shells, are forged with bonding capacities, almost like grappling hooks, making possible endless recombinations.

Do we really need a universe with a hundred billion galaxies, each with a hundred billion stars? Maybe we are lost out there in the stars? Do we need all those galaxies, stars, asteroids, cosmic dust, dark matter, dark energy? The scattering of galaxies, stars, asteroids, black holes, and so on, is what it is, and explanations are over. Still, we stand on an Earth, the dirt under our feet, incarnate in the flesh and blood of our bodies and brains, and think about cosmology. The creative universe did produce us. The human person is composed of stardust, fossil stardust! And we have no scientific theory as to how we might have obtained such bodies and brains without some remarkable elemental source, such as this singular Big Bang provides.

John Barrow surveys the universe: “Many of its most striking features – its vast size and huge age, the loneliness and darkness of space – are all necessary conditions for there to be intelligent observers like ourselves” (Barrow 2002, 113). Stephen M. Barr puts the point this way, with emphasis:

Even if all the physical relationships needed for life to evolve were explained as arising from some fundamental physical theory, there would still be a coincidence. There would be the coincidence between what that physical theory required and what the evolution of life required. If life requires dozens of delicate relationships to be satisfied, and a certain physical theory also requires dozens of delicate relationships to be satisfied, and they turn out to be the very same relationships, that would be a fantastic coincidence. Or, rather, a series of fantastic coincidences (Barr 2003, 145).

Paul Davies says, we hit the “cosmic jackpot” (Davies 2007).

What should we make of this? Sometimes we dismiss the puzzle, noticing that in no other kind of universe could humans have evolved to worry about these things. We are here and it really isn’t surprising that the universe is of such kind as has produced us. We knew before we started our search that the universe has all the prerequisites for our being here. But those who
want a fuller explanation will find it quite impressive to discover that what
seem to be widely varied facts really cannot vary widely, indeed, that many
of them can hardly vary at all, and have the universe develop the matter, life,
and mind it has generated.

Naturalists may reply: this is just the luck of the draw for this universe –
perhaps one among multiple universes, most of them unlucky. But that is
a rather speculative explanation – to invent myriads of other worlds existing
sequentially or simultaneously with ours, in order to explain how this one
can be a random one from an ensemble of universes – and so a little
less surprising in its anthropic features. Meanwhile, what has increasingly
been enforced is the singularity of this one. Roger Penrose is impressed by
“the extraordinary degree of precision or ‘fine-tuning’ for a Big Bang of the
nature that we appear to observe.” He concludes that ours is “an extraordi-
narily special Big Bang” (Penrose 2005, 762, 726). Martin Rees concludes:
“We should surely probe deeper, and ask why a unique recipe for the physi-
cal world should permit consequences as interesting as those we see around
us” (Rees 2001, 163). Maybe this natural history is just lucky. But nothing
in contemporary cosmology prevents theologians and philosophers from
wondering whether the start up looks like a set up.

Those interesting consequences that we see around us are most notably
life and mind on Earth. That mixture of creative order and openness contin-
ues, indeed escalates, in the adventures of our planetary natural and cultural
history, to which will increasingly return in the argument to follow.

3. Necessary and/or/not Sufficient – Self-explanatory Nature

The deeper explanation, naturalists may reply, is that nature is a self-generat-
ing system. The end of the story may not be already there in the beginning,
but the setup is the startup of a self-organizing system. Just watch what it
does, more or less automatically. Generating these heavy elements, which
on Earth become the seeds of life, does seem deterministic in origin. In
that sense the periodic table of chemical elements is latent in the Big Bang –
including those remarkable biogenic elements. So are the thirty-two crys-
tal classes. Molecular structures, molecules and lattices, as found in water,
pyrite, salt, silica, inevitably develop somewhere.

The system is prone to modular constructions, which may get intertwined
or compounded (hypercycles); and the stable and metastable ones survive.
Random elements combine with overall order (as with fractals). Beyond
aggregation, matter is regularly spontaneously organizing, as when mol-
ecules and crystals form. In some situations, especially with a high flow of energy over matter, patterns may be produced at larger scales (Prigogine and Stengers 1984). These patterns may further involve critical thresholds, often called self-organized criticality (Bak 1997). Such processes are “automatic,” sometimes called “self-organizing,” although initially the “auto” should not be taken to posit a “self,” but rather an innate principle of the spontaneous origination of order.

Given some start up Big Bang, contingent or inevitable, there might also be contingency en-route in the automatically unfolding natural history. The basic laws and constants might (after the start up) be determinate, but there might be contingency nevertheless within the framework of such basic laws and constants. The laws include quantum physics, for example, which has indeterminacy within it, by most accounts an ontological indeterminacy. If quantum events can ever be amplified to larger scales, those results would be to some degree contingent.

In fact, we have not far to seek for evidence that molecular and even atomic phenomena are often amplified. In biochemistry and genetics, events at the phenotypic level are profoundly affected by events launched at the genotypic level. Such events may sometimes be affected by quantum events, as when random radiation affects point mutations or genetic crossing over. If radioactive decay caused a mutation that altered efficiency in photosynthesis and conveyed survival advantage, that would affect events at ecosystem scales. Indeed, by the usual evolutionary account, the entire biological tale is an amplification of increments, where microscopic mutations are edited over by macroscopic selective processes. These increments are most finely resolved into molecular evolutions.

Mostly, quantum indeterminacies wash out at our native range levels. That is required for the order of natural law. A macro-determinism remains, despite a micro-indeterminism. The physical world is in fact routinely described in statistical terms. This is often because of our epistemological uncertainty, incomplete information. But objectively random processes at one level can yield reliable results at other levels; the random distribution of grains of clay in a brick nevertheless permits a stable and ordered wall in a building. But in statistical systems with chaotic elements, some of them genuinely indeterminate, random differences at a threshold during initiation can lead to widely different outcomes. Even on global scales, climatologists now allow that weather systems, even climate systems, have indeterminate dimensions, at the same time that they are statistically causal (Lorenz 1968). Given billions of years of natural history, it seems likely that at times and places, mutations bubbling up from atomic indeterminacies have resulted in
important shifts in genetic codings, which have resulted in important novelties in natural history.

Well, naturalists will reply, that's just what we were claiming: that the system is self-organizing – and that involves both law and novelty. But then the results of this innate self-organizing tendency are as open as they are inevitable. Nature is full of surprises – and some sort of surprises are guaranteed, but what they exactly are, no one can say in advance. There is always and only self-sufficing nature pouring forth, but the specifics of the surprises are not front-loaded into the system.

Indeed, it is impossible to say that the three major levels (matter-energy, life, mind) are built into this self-organizing. Each level is necessary for the next, but no stage seems sufficient for the next. Each stage allows the next, but no stage logically implies the next. No scientific law, plus initial conditions, predicts the surprisingly emergent steps of life and mind. In some moods, the vast distances between the originating Big Bang, the origin of life on Earth, and the origin of human mind, billions of years apart, suggests minimal connections. Even more provocatively, each stage launches escalating creativity. Outrageous luck? Or are there “attractors”? Is there a subtending field, a deeper source?

There is certainly no ultimacy in the ultrastructures as now known. We have hit no “rock bottom” in physics, and have few signs that we ever will or can, or would know when we had. We are nowhere close to an account of nature that makes all the events in natural history self-explanatory, not at the Big Bang, not at the origin of Earth, not at the origin of life, not at the origin of human life, not at the origin of culture, not at the origin of science, ethics, and religion, not with nature evolving into spirit. There is nothing self-explanatory about dark energy. Figuring out what it is, if it actually exists, is so complex, and may involve chasing an unending crescendo of unknowns, that one recent commentator remarks, “Dark energy might never reveal its nature” (Cho 2012, 1091). Meanwhile it is not just what we don’t know, but what we do know that is startling: a nature that starts with matter-energy and produces life and mind.

What these claims about self-organizing amount to is not a nature with built in explanations. Rather, the natural sciences keep opening up the possibilities of a deeper naturalism, a nature about which one can be religious. And, again, these same shifts equally keep open the more ultimate question whether nature is all that there is, leaving open the question of transcendence.
4. More out of Less: Emergence, Cybernetics, Serendipity, Caring

The discovery that information is a critical determinant of organic-evolutionary history has thrown the creativity/causal/contingency debate into a new light. Various concepts of “emergence” have been around for centuries. “More is different” (Anderson 1972). Cybernetic emergence has become the most recent focus. In classical physics, there were two metaphysical fundamentals: matter and energy. Einstein reduced these two to one: matter-energy. In the rapidly expanding universe, there is conservation of matter, also of energy; neither can be created or destroyed, although each can take diverse forms, and one can be transformed into the other. With genes on Earth, the novelty is that matter-energy enters into information states. The biologists also claim two metaphysical fundamentals: matter-energy and information. The latter is radically novel. There appears proactive information about how to compose, maintain, communicate, and elaborate vital structures and processes. This is information about directed use, which is not present in the previous physico-chemical world.

Now there appears a new type of order. A crystal is ordered (formed) spontaneously. There is repeated spontaneous structure formation. A protein molecule is ordered because it is “ordered” to form under the “informed” direction of a DNA molecule, that molecule switched on by the organism with its needs. The various spontaneously assembled phenomena in physics and chemistry, for example those called dissipative structures (such as Bénard cells that form in liquids with high temperature gradients) have a physical order but nowhere approach this biological sense of order. Nothing is transmitted from one generation of Bénard cells to the next. In similar circumstances such cells generate again, but they do not regenerate. There is no increasing complexity in the course of reproduction.

Two decades ago what needed to be explained was the generation of complexity. In recent decades scientists have come more to focus on the information required for specifying and generating such complexity. Norbert Wiener, a founder of cybernetics, insisted: “Information is information, not matter or energy” (Wiener 1948, 155). That differentiates physics from biology; and, biologists argue, biologists need to be alert to this. George C. Williams is explicit: “Evolutionary biologists have failed to realize that they work with two more or less incommensurable domains: that of information and that of matter. … The gene is a package of information” (quoted in Brockman 1995, 43). The earthen world, biologists now insist, is composed by information that superintends the uses of matter and energy. James A. Shapiro concludes: “Thus, just as the genome has come to be seen as a highly
sophisticated information storage system, its evolution has become a matter of highly sophisticated information processing” (Shapiro 1998, 10; 2005).

What makes the critical difference is not the matter, not the energy, necessary though these are; what makes the critical difference is the information breakthrough with resulting capacity for agency, for doing something. Afterward, as before, there are no causal gaps from the viewpoint of physicist or chemist, but there is something more: novel information that makes possible the achievement of increasing order, maintained out of the disorder. The same energy budget can be put to very different historical uses, depending on the information in the system. Chemical reagents become biological agents. For scientists what emerges is “cybernetics.” For philosophers, what is appears is “telos.” Theologians will wonder whether what is added is headed toward “logos.”

This cybernetic searching and improvising at times gets really lucky. Novel possibilities open up whole new regions of search space; old molecules recombine to learn new tricks in unprecedented circumstances. In such cases of co-opted emergence, repeatedly compounding, something that is genuinely new pops out, pops up. The novelty is, of course, based on the precedents, but there is genuine novelty not present in any of the precedents. What emerged required the precedents, but the presence of the prior organisms did not determine or make inevitable these results. Evolutionary genesis can luck into exciting serendipity.

Biologists, a century back, used to call such events “saltations.” Physicists, pressed for words from their discipline, might call it a “quantum leap.” Maybe we need a new term: “cybernetic leap.” Biologists inclined toward chance may call this “tinkering” (Jacob 1977). Biologists impressed with the novel results will call it evolutionary “exploring.” Historians will remark that such events are narrative adventures; they do not follow any Aristotelian logic, nor any hypothetico-deductive science. One needs a metaphysics for such co-option because there appear new ontological levels, both actual and possible. Sight appears where before were only heat stress proteins (that they happened to be clear was co-opted to make eyes), language where before was only skin pressure sensibility (co-opting such cells to make ears). Sight and language open up the possibility of writing/reading. Co-option is a vital key to historical creativity.

Retrospectively, of course, after these novelties happen, the historian can trace the steps by which events happened. The paleontologist and paleomolecular biologists can give scientific explanations, a posteriori. But at each developmental juncture, were (per impossible) a biologist standing there watching, nothing is a priori. Prospectively, if one could stand at each pre-
sent moment, at each “now” over the course of evolution, there is always the
great unknown. The pivotal element in a metaphysics of such evolutionary
biology is the future, not the past, not even the present. Past and present are
necessary but never sufficient for the future. In that sense our accounts will
always be insufficient, incomplete, before this capacity for future innovation.

Sometimes the explanatory account is by laws applied to initial condi-
tions, and the same laws again reapplied to the resulting outcomes, now
treated as further initial conditions. But sometimes, with co-options, endo-
symbioses, lateral genetic transfers, mutations, the outcomes are not just
further sets of initial conditions. The novel outcomes revise the previous
laws; the rules of the game change, as well as the initial conditions, and the
future is like no previous past. One can say that all this surprising serendip-
ity is somehow “inherent” from the start; but the explanatory power of such
a claim is rather vague. Predictably, there will be unpredictable co-options!

Critical turning points in the history of life hinge on events more idi-
ographic (unique, one-off events) than nomothetic (law-like, inevitable,
repeatable trends). The main idea in co-option is the unpredictable and
unexpected; co-option is as revolutionary as it is evolutionary. Genes in
living systems explore a combinatorially immense space of possibilities
through the evolutionary process; They do so with longstanding creative
genesis, punctuated by serendipity.

Such creative serendipity resulted in the human emergence, with dra-
matic and unique cognitive powers. How has the universe, starting with the
Big Bang, and proceeding through rocks and dinosaurs, generated beings,
Homo sapiens, capable of discovering mathematical truths (such as pi, or
the Pythagorean theorem, or proofs in prime number theory) that are not
natural, not true on the strength of anything that has happened in natural
history? Similarly with their capacity to discover moral truths (such as the
Golden Rule or the value of justice and compassionate selfless love ). Nature
is a system capable of generating the human mind – nature per se, even if
culture is also required, such culture being natural too. Surprisingly our
highest achievements do not get their authority from our biological or geo-
logical or physical origins. This requires that we go over and above, or bot-
tom out, in more comprehensive, forms of explanation. We have cognitive
powers that transcend the natural order.

Terrence Deacon catches this uniqueness: “Hundreds of millions of years
of evolution have produced hundreds of thousands of species with brains,
and tens of thousands with complex behavioral, perceptual, and learning
abilities. Only one of these has ever wondered about its place in the world,
because only one evolved the ability to do so” (Deacon 1997, 21). Jerome
Kagan puts it this way: “What is biologically special about our species is a constant attention to what is good and beautiful and a dislike of all that is bad and ugly. These biologically prepared biases rend the human experience incommensurable with that of any other species” (Kagan 1998, 91). When Thomas Nagel attempts to connect “mind and cosmos,” he concludes that “the materialist neo-Darwinian conception of nature is almost certainly false” because nothing in the history of humans evolving in African jungles adequately explains the extraordinary powers of the human mind. He does not favor a monotheistic account either, and he is stumped for any plausible account of how such mindful humans arrived on Earth” (Nagel 2012).

Humans are remarkable not only for their cognitive abilities but in humans also there is a remarkable evolution of the capacity for caring. We live at the range of the most caring; we ourselves may embody the most capacity for caring. All living things have “needs.” There is proactive caring wherever there is “agency,” wherever there is “motivation,” where there is “locomotion.” Irritability is universally present in life, but sentience, co-present with neural structures, brings the capacity to move about deliberately in the world, and also to get hurt by it. A neural animal can and must love something in its world and is free to seek this, a capacity greatly advanced over anything known in immobile, insentient plants. The animal has the power to move through and experientially to evaluate the environment.

In humans, there arise more inclusive forms of caring. Such wider vision requires increasing cybernetic complexity, a brain that can evaluate others not only in terms of helps and hurts, but also with concern for their health and integrity. This radically elaborates new levels of cultural information, and caring. Humans care about family, tribe, nation, careers, ideational causes, such as biological science, French literature, or the Christian faith. Ethics shapes caring. In due course, humans alone on the planet can take a transcending overview of the whole – and care for life on Earth.

Biologists several decades back would have replied, yes, there is caring but it is selfish. Such selfishness was soon stretched to cover benefits gained by “caring about” father, mother, niece, nephew, cousin, children, aunts, uncles, and so on, and further along the indefinitely extended lines of relationship, lines that fan out eventually to all conspecifics (half of which are also potential mates, which sometimes also need to be cared about). More recently, something of a new picture has been painted over the old, although much of the old picture still shows through.

In the last couple decades, biologists have found as many ways in which natural selection favors co-operation as it does competition. In fact, Martin Nowak, who calls himself a mathematical biologist and models various
kinds of natural selection on computers, claims: “Competition does not tell the whole story of biology. Something profound is missing. Creatures of every persuasion and level of complexity cooperate to live. … This is the bright side of biology” (Nowak 2011, xii–xiv). “Cooperation is the master architect of evolution” (xviii).

Humans can come to care about what is not locally present. There can be, so to speak, concern at a distance, caring not only interestedly but disinterestedly about others. When knowledge becomes “ideational,” these “ideas” make it possible to conceptualize and care about what is not present to immediate experience. Chimpanzees cannot care about the Ugandans in poverty, even if they encounter the poor at the edge of their forest, but Christians elsewhere in the world may, although they have never been to Uganda.

Human rationality enables humans to anticipate quite novel futures, to choose potential options, to plan for decades according to chosen simulations, or policies, and to rebuild their environments accordingly. The result is the capacity to care for idealized futures, and to work for such futures. “Global capitalism is working now to make the rich richer and the poor poorer, but what if …” The result of these ideational powers – though persons continue to act in their generic self-interest – is to pull the focus of concern off self-center and bring into focus others in the community of persons. Caring can sometimes become more “inclusive,” recognizing that one’s own self-values are widely paralleled, a kind of value that is distributed in myriads of other selves, in my tribe and in others. One comes to participate or share in this larger community of valued and valuing agents.

What the self values can only be sustained if people act in concert. Cultural reproduction, conserving what one values in one’s heritage, is as much required as is conserving one’s genes. But much of one’s cultural heritage is trans-tribal; one is drawn to the church catholic, to democracy, to a sense of fairness in international business, to conserving tropical forests. Just this reflective element rationalizes (makes reasonable) and universalizes the recommended behavior. One expects to be helped out in a society of reciprocating helpers.

The caring-complexity in which we find ourselves must be understood comprehensively – in terms of conclusions, not just origins. That ending lies ahead, but en route, we humans are at the forefront of the story. Increased caring, like the increased complexity that supports it, is an ever open niche. Now, returning to those impressed with these escalating possibilities in natural history, cumulating in cultural history, is all this still natural? The naturalists will still say: Keep it natural. Elevate the natural, Enjoy the surprises! Others will worry that in such a nature, there is too much “bootstrapping,”
nature lifting itself up and up and up by its own bootstraps. Rocks eroding and the dirt organizing itself into the diversity of life on Earth, with one exceptional species capable of sacrificial love! Quite a surprise! Those who wish to look deeper, further, wonder whether such serendipitous emergence of caring invites us to see such a world, and our task in it, as signals of a transcendent, beyond a natural sacred.

Christians may even find increasingly plausible the account that in the evolution of such caring, there is logos becoming incarnate in the world. One result in the cultural history, emerging from the natural history, is the nation of Israel, and the historical presence in that history of the person of Jesus Christ, who becomes an icon of the power of suffering love, remembered across two millennia with his memory spread around the world. Perhaps this develops in culmination of this evolution of caring which begins in biological natural history. But it is difficult to imagine that this Logos coming into the world is all somehow naturally self-explanatory.

5. Predictable, Probable, Random, Possible, Possibility Space

Contemporary biologists are divided across a spectrum whether this creative cybernetic evolutionary history is entirely contingent or quite probable, even inevitable. At one end, famously, Jacques Monod, Nobel prize-winner, insists: “Chance alone is at the source of every innovation, of all creation in the biosphere.” Evolutionary history is “the product of an enormous lottery presided over by natural selection, blindly picking the rare winners from among numbers drawn at utter random” (Monod 1972, 112, 138). But Christian de Duve, another Nobel prize-winner, replies: “To Monod’s famous sentence: ‘The universe was not pregnant with life, nor the biosphere with man,’ I reply: ‘You are wrong. They were’” (de Duve 1995, 300).

“Life was bound to arise under the prevailing conditions, and it will arise similarly wherever and whenever the same conditions obtain. There is hardly any room for ‘lucky accidents’ in the gradual, multistep process whereby life originated. … I view this universe [as] … made in such a way as to generate life and mind, bound to give birth to thinking beings” (de Duve 1995, xv, xviii).

Such clashes are one of the more philosophically remarkable happenings in contemporary paleontology. We almost get slapped in the face with what radically different metaphysical frameworks eminent biologists can read into, or out of, the same evolutionary facts. Let’s set Cambridge against Harvard. Simon Conway Morris, Cambridge paleontologist who did the detailed work on the fossil animals in the Burgess Shale, draws conclusions that
are the “exact reverse” (Conway Morris 2003, 283) of those of Stephen Jay Gould, who wrote the best-selling Wonderful Life based on Conway Morris’s paleontological data. Gould concludes, famously, “Almost every interesting event of life’s history falls into the realm of contingency” (Gould 1989, 290).

“We are the accidental result of an unplanned process ... the fragile result of an enormous concatenation of improbabilities, not the predictable product of any definite process” (Gould 1983, 101 f). Conway Morris “aims ... to refute the notion of the ‘dominance of contingency’” (297). “The science of evolution does not belittle us. ... Something like ourselves is an evolutionary inevitability, and our existence also reaffirms our one-ness with the rest of Creation.” “Perhaps we can discern inherent within this framework the inevitable and pre-ordained trajectories of evolution?” (Conway Morris 2003, 297, xv–xvi, 24; Conway Morris and Gould 1998). On these trajectories at least, nature has a nonintentional tendency to produce intentions. This demands more explanation than random chance.

Inevitable or lucky, a surprising universe of the kind we have will also need a deeper account. We reach the same puzzle here on Earth below that we found in the heavens above. If life is inevitable, it is remarkable. If life is contingent, it is equally remarkable. Either way, there is radical creativity demanding a deeper account.

If we turn to mind, scientists range across a spectrum finding as much novelty as they do kinship with the other species. Despite finding other kinds of progress undeniable in the evolutionary record, Ernst Mayr reflects on the evolution of intelligence: “An evolutionist is impressed by the incredible improbability of intelligent life ever to have evolved” (Mayr 1988, 69). Mind of the human kind is singular on Earth, found only in Homo sapiens. Although consciousness long preceded humans, there is an explosive state change when humans cross a divide gaining their self-reflexive, ideational, linguistic, symbolic capacities.

The launching of life may have been random chance, but, once launched, biodiversity was highly probable, biocomplexity less probable but likely. The formation of human mind may have been serendipitous, and after that cultural diversity may have been highly probable. Cultural diversity may be peculiar and local, or local on isolated islands but cumulative on continents and accelerated at crossroads between continents. The causal connections are likely themselves to be complex.

William Day concludes that “as we arrange the sequences of evolution’s advance, we discover an unsettling implication:”

Each step is an evolutionary curve; all steps together outline an accelerating advance for all biological evolution. ... Each major step in evolution appears to take less time to
occur. And each development begins slowly but, fed by its own momentum, begins to accelerate until it races to its developed state. When it reaches a final level – a higher stage in evolution – the offspring of the new life form begin to repeat the cycle, evolving some feature that ultimately leads to another succeeding step, … it continues to accelerate stage after stage. … We are in the middle of something momentous taking place (Day 1984, 257f).

Although he is staggered in attempting to locate mind in the cosmos, Thomas Nagel does affirm: “My guiding conviction is that mind is not just an afterthought or an add-on, but a basic aspect of nature” (Nagel 2012, 16).

One way to think of this accelerating momentum toward the momentous is to think of the opening up of new possibility space. One can claim that the possibilities were always there, front-loaded into the Big Bang. One can with equal plausibility claim that new possibility space has opened up en route in the course of natural history. There is the generation of new possibility space in which information breakthroughs become possible. New information, as in DNA, opens up new opportunities, previously impossible to hydrogen, carbon, oxygen, iron, so long as they are devoid of it. New possibility space appeared with the co-option of certain predecessor free-living organisms to become the mitochondria and chloroplasts now pervasive in animals and plants that power life with solar energy. Some achievements that are genuinely new pop up. These are based on the precedents, but there is novelty not present in either of the precedents. What emerged required the precedents, but the presence of the prior organisms did not require or determine these results. The precedents in both their actuality and possibilities are necessary but not sufficient for the consequents. There is break-through discovery, innovative creativity.

Thomas Berry claims that the parts must be understood in the light of later-coming wholes:

The simpler elements are not fully known until their integration into more comprehensive modes of being is recognized. Later complex entities are not fully intelligible until their component parts are understood. We would not know the real capacities of hydrogen, carbon, oxygen, and nitrogen were it not for their later expression in cellular life and indeed in the entire world of living beings, including the remarkable world of human consciousness. So with consciousness: the thoughts and emotions, the social forms and rituals of the human community are as much “earth” as the soil and rocks and the trees and the flowers. We can reduce the flowers to the atoms or the atoms to the flowers. There are no atoms that are just atoms, no flowers that are just flowers. There is no earth without the human; no human without the earth (Berry 1988, 91f).

Berry seems insightfully inclusive – at first, but maybe, on further thought, overly inclusive. The hydrogen in outer space is not flowers, or mind; the iron, carbon, oxygen on the moon is not alive. Nor is life, mind secretly
somewhere tucked into them. Moon atoms with their protons, electrons, atoms are not waiting around to string themselves together into DNA molecules, waiting for a context of sufficient entanglement to form vital nodes in networks, waiting around to form the metabolisms of life, much less waiting around to think about such metabolism. Atoms, bare, are just atoms. What they lack is vast amounts of information, of which they do not have any at all.

Suppose that a meteorite lands on Earth, releasing some iron atoms as the incandescent meteor crashes into the ground. Suppose some of those iron atoms make their way into my diet, and into my blood. Would not such meteoric iron, from outer space, work just as well as any terrestrial iron atom in the hemoglobin carrying oxygen to my brain. Does that not mean that such iron atoms have had from time immemorial the capacity for entering into cognitive processes? Passively perhaps, if overtaken by mind, but actively there is no such self-contained potential. A single atom of iron has no such possibilities within itself at all. To claim that it does is like saying that ink and paper has the Library of Congress latent within the bottle and secretly coded in the paper pulp fibers. Entering into thinking processes becomes a possibility for such an extraterrestrial iron atom only with its encounter with (only relative to) the systemic company of enormous amounts of information.

One can insist that it must always have been possible to put carbon atoms into organic cells and silicon atoms into computers, since we humans do that now somatically and technologically – and the atoms are no different from what they have been for billions of years. But it may have always been possible to do this with these atoms, providing that one had the know-how to do such things, but not possible lacking such information. Such information has to become possible. That is different from the claim that it has always been possible for carbon and silicon to self-organize into organism and computers. An iron atom is not an incipient hemoglobin molecule.

Karl Popper concludes that science discovers “a world of propensities,” open to historical innovation, the possibility space ever enlarging.

In our real changing world, the situation and, with it, the possibilities, and thus the propensities, change all the time. … This view of propensities allows us to see in a new light the processes that constitute our world: the world process. The world is no longer a causal machine – it can now be seen as a world of propensities, as an unfolding process of realizing possibilities and of unfolding new possibilities. … New possibilities are created, possibilities that previously simply did not exist. … Especially in the evolution of biochemistry, it is widely appreciated that every new compound creates new possibilities for further new compounds to synthesize: possibilities which previously did not exist. The possibility space … is growing. … Our world of propensities is inherently creative (Popper 1990, 17–20).
The result is the evolutionary drama. “The variety of those [organisms] that have realized themselves is staggering.” “In the end, we ourselves become possible” (Popper 1990, 26, 19).


What are we to make of this escalating naturalism? A naturalist may continue to insist that there is, as before, nothing but nature; there is no ontologically distinct transcendent God – or heaven, or afterlife, or angels. But nature is super. Spell nature in the upper case, capitalize even the “super.” Nature, Super. Add an exclamation mark: Super! But do not suppose Supernature. There is nothing “over and above;” but there is “ultimate ground.” Each of the emergent steps is “super” to the precedents, that is, supervenes on and surpasses the principles and processes earlier evident. Each transcends previous ontological levels. The category of the natural is elevated as it enlarges. Nature proves richer, more fertile, brooding, mysterious, than was recognized before. Natura naturans is as revealing as natura naturata. A spirited history, a history of spirit, supervenes on matter-energy. The generative power is lured toward spirit, evident in human spirits. And such nature is a supercharged nature, but still nature.

Believing in emerging spirit is plausible; we are such spirits. But believing in any Spirit (upper case) in, with, and under the process is incredible. These escalating naturalists seem quite allergic to any transcendence, but quite attracted to immanence. “Up” is not a direction in which they wish to travel, but “down” is in vogue. Nature has its “sacred depths” (Goodenough 1998). We stand on holy ground. Earth is the ground of our being. Even Stephen Jay Gould, after a career advocating contingency in natural history, closed his massive paleontology text, among the last words he wrote, calling call the Earthen drama “almost unspeakably holy” (Gould 2002, 1342). Watching Earthrise from the moon astronaut Edgar Mitchell was deeply moved by the “sparkling blue and white jewel … rising gradually like a small pearl in a thick sea of black mystery” and continued that his view was “a glimpse of divinity.”

There is creative transformation; but not creative transcendence. Or even allow that nature is self-transcending. Only keep that a lowercase t: transcendence, not Transcendence. If the “over” direction seems uncomfortable, then try “behind” or “beyond.” Those who hope to be scientific about answers will say that even if science does not give all the answers we might like about escalating, serendipitous nature, we should still be naturalistic.
With the evolution of each later stage, the tectonic potential of nature actualizes into something higher. Posit lots of emergence, opening up of new possibility spaces; make Earth, with Popper, a world of propensities. But keep it immanent.

Recall here that metaphysicians have long argued that if you go deep enough, immanence is transcendence. To go down to an energy pit beneath the Higgs bosons and the quarks, out of which all bubbles up, radically transcends any form of reality that we know at our native ranges. A quantum fluctuation in a vacuum that explodes and suddenly inflates into a universe—this quite transcends common experience. You can get beyond by going beneath as readily as by going up and out.

Nature warrants the kind of respect, awe, reverence, love, devotion formerly reserved for God. Some naturalists may complain that to add a transcending God diminishes the natural creativity. In a kind of metaphysical zero-sum game, any points we give to God have to be subtracted from small pearl Earth. If you praise God, by just that much you celebrate nature the less. Vice-versa, when nature scores many points, God loses points. Give nature all the points and God isn’t in the game any more.

Or, you can, if you like, let Nature, Super be God. Gordon Kaufman, Harvard Divinity School, reached the conclusion that God is a human symbol which can now best be understood as referring to the “serendipitous creativity” appearing in the natural world (Kaufman 2001). This does not mean that a transcendent God is in, with, and under the remarkable creativity in nature. “God” just is that serendipitous nature, nothing more, but that much is quite exciting. This is a more appropriate description of what we have classically referred to as “God” than such traditional concepts as creator, lord, and father. Today these latter metaphors can only be seen as heirlooms, treasured perhaps, but no longer seriously functional in the light of modern science.

Stuart Kauffman advocates Reinventing Religion in this naturalistic form. The trajectory of the “nonergodic” (non-repeating) universe is continually taking it into the “adjacent possible,” a configuration space whose possibilities cannot be foreseen in advance. Again, in serendipity, new things emerge that cannot be adequately described by existing categories. No algorithm or logical deduction can completely explain the present, much less the future, and we have to learn to live with mystery creatively. At the current apex of such creativity, we humans ourselves are co-creators of the biosphere and global community, escalating this mystery. The creativity of nature “is stunning, awesome, and worthy of reverence. … God is our chosen name for the ceaseless creativity in the natural universe, biosphere, and human cultures.”
Kauffman hopes to recast religion with the “view of God as the natural creativity in the universe” (Kauffman 2008, xi, xiii).

But monotheists continue to worry: The cash value that venerating serendipitous creativity leaves for believers to take home is: “God is gone! May the Force be with you!” Is there anything that lies behind, beyond such ceaselessly creative phenomenal nature that provides a more ultimate explanation and meaning? When nature evolves spirit, one might need some form of spiritual explanation. Well, say the naturalists, what you find is a spirited nature. So let’s recall the story: With humans, nature gets more into spirit, and do we have adequate “naturalistic” explanation for that? Certainly not if “naturalistic” means “scientific” because there is no set of sciences that predicts or retrodicts the natural history from Big Bang to Einstein, from quarks to Jesus.

Elliott Sober, well known philosopher of science, puts the point provocatively, claiming that sciences cannot avoid some belief in the supernatural. This is because they must use numbers and number theory, evidently in physics but also in evolutionary theory (as in statistics and probability). But numbers and numerical truths (such as the Pythagorean theorem, or those proofs in prime number theory), according to most mathematicians, are not natural entities, not empirically discovered, but trans-scientifically true, rather like Platonic entities. He then asks, “If numbers, why not God?” (Sober 2011, 121–52).

An escalating experience encountering nature is that the story is already incredible, progressively more so at every emergent level. The story is quite fantastic, except that it is true. To take most recent evidence, Lawrence M. Krauss, Director of the Origins Project at Arizona State University, concludes that the discovery of the Higgs particle (requiring vast genius in mathematics) “makes even more remarkable the precarious accident that allowed our existence to form from nothing – further proof that the universe of our senses is just the tip of a vast, largely hidden cosmic iceberg.” “Most significantly perhaps, cathedrals and colliders are both works of incomparable grandeur that celebrate the beauty of being alive” (Krauss 2012, D2). At this turn of thought, monotheists may want still deeper explanations: a Transcendence in which this self-transcending nature is embedded, a Ground of all Being.

Supercharged nature signals Transcendent Presence. The upper-level accounts cast their light back across what might in short-scope perspective have seemed complete naturalistic accounts. They cast shadows over them. The earlier events begin to figure as subplots within a larger story. Afterward, the naturalistic explanations do not look so compelling, as they earlier did. To believe in the supernatural is to believe that there are forces at work that transcend the physical, the biological, the cultural. These spiritual forces
sway the future because they have for millennia been breaking through and infusing what is going on. This detects from our present vantage point intimations of a fourth dimension (Spirit) when three dimensions (matter, life, mind) are already incontestably evident and the fourth is secretly and impressively also at work.

7. Presence: Persons and Beyond

Presence is the miracle – rare but undeniably here – and revealing of the whole. Science tends to feature the primacy of matter-energy, but theologians reply that the primacy is in experiential presence – that is what is primarily to be explained. The one indisputable fact is that “I am.” How can it come to be that matter-energy results in persons with such presence? The deepest and most plausible answer is Presence, subtending Presence, at the start up and en route. (Recall the Hebrew: YHWH, “I am.” “I am present.” Numinous Presence.)

When seeking explanations, especially historical explanations, to work backward is often as plausible an approach as it is to work forward. In the sequence A → B → C, perhaps A causes (and explains) B, but C explains (the heading of) B as well. The Pilgrims landing at Plymouth Rock were driven from Europe; they were drawn by a vision of a New World, America. Matter causes life causes mind. But perhaps mind illuminates the potential of matter, perhaps in the outcome we detect subtending Mind (as Thomas Berry was suggesting).

We cannot doubt that in ourselves there is “somebody there,” spirited presence. That there is a trans-cosmic personal God is, so it seems at the start, almost utterly irreconcilable with anything known in cosmology – the bare matter-energy that stares astronomers in the face. But when astronomers stare in the mirror (their shaving mirrors, not their mirror telescopes), seeing their faces, they may pause to think that this matter-energy creatively produced persons – and wonder if that result is not as revealing as dark energy or Higgs bosons.

Yes, at such levels of complexity, we will often be in “over our heads”; but one conclusion is inescapable: what is “in our heads” is as startling as anything else yet known in the universe. We will be left wondering how far what is going on “in our heads” is a key, at cosmological and metaphysical levels, to what is going on “over our heads.” Is mind a key to the whole? Are we detecting Mind in with and under it all? Are we an icon of deeper Presence, Spirit suffusing the universe story?
Our own inwardness is not easily subject to scientific study, many think not at all subject to objective science. So perhaps the place to begin is with the revelations in contemporary neuroscience, which, though facts of the matter, do a lot of pointing beyond. J. Craig Venter and over 200 co-authors call the human brain “a massive singularity” (Venter et al. 2001, 1347 f). A team of neurogeneticists conclude: “Human evolution is characterized by a dramatic increase in brain size and complexity” (Dorus et al. 2004, 1027). Bruce Lahn, the lead researcher in the study, was interviewed:

We’ve proven that there is a big distinction. Human evolution is, in fact, a privileged process because it involves a large number of mutations in a large number of genes. … To accomplish so much in so little evolutionary time – a few million years – requires a selection process that is perhaps categorically different from the typical processes of acquiring new biological traits. … It required a level of selection that is unprecedented. Our study offers the first genetic evidence that humans occupy a unique position in the tree of life. (Lahn, interviewed in Gianaro 2005)

Michael Gazzaniga, a neuroscientist, speaks of “the explosion in human brain size”: “We are hugely different. While most of our genes and brain architecture are held in common with animals, there are always differences to be found … the differences are light years apart. … We humans are special” (Gazzaniga 2008, 13, 1–3).

The human brain is of such complexity that descriptive numbers are astronomical and difficult to fathom. A typical estimate is $10^{12}$ neurons, each with several thousand synapses (possibly tens of thousands). Each neuron can “talk” to many others. The postsynaptic membrane contains over a thousand different proteins in the signal receiving surface. “The most molecularly complex structure known [in the human body] is the postsynaptic side of the synapse,” according to Seth Grant, a neuroscientist (quoted in Pennisi 2006). The human brain is capable of forming thoughts numbering something in the range of $10^{70,000,000,000}$ thoughts – a number that dwarfs the number of atoms in the visible universe ($10^{80}$) (Flannagan 1992, 37; Holderness 2001). On a cosmic scale, humans are minuscule atoms, but on a complexity scale, humans have “hyperimmense” possibilities in mental complexity (Scott 1995, 81). In our hundred and fifty pounds of protoplasm, in our three-pound brain is more operational organization than in the whole of the Andromeda galaxy.

The human brain is not just a scaled up version of chimpanzee brain. Humans are remarkable in their capacities to process thoughts, ideas, symbolic abstractions figured into interpretive gestalts with which the world is understood and life is oriented. The key threshold is the capacity to pass ideas from mind to mind. “Humans have a whole system that we call theory
of mind that chimps don’t have” (Daniel Povinelli, quoted in Pennisi 1999, 2076). Carl Zimmer concludes:

“Of all the species on Earth, only humans possess what researchers call a ‘theory of mind’ – the ability to infer what others are thinking. … After decades of studies, no one has found indisputable signs that chimps or other nonhuman primates have a theory of mind.” “Understanding that others think is a human exclusive” (Zimmer 2003).

Humans can enjoy an epistemic genius, transcending their own sector and take an overview (Earth seen from space, the planet’s hydrologic cycles, genes which they share with, or that distinguish them from animals), or take in particulars outside their embodiment (sonar in bats, low-frequency elephant communication), or consider transcendence (in mathematics and theology). We can, as we are doing here, consider whether the origin of the universe, the origins of life, and the origin of mind, billions of years apart and spanning immense levels of complexity, are inevitable or surprising. This genius is fact of the matter. If science could find that this result is latent in the system, that would be a great marvel. If, rather, science can only find that this outcome a serendipitous surprise in the system, that makes it no less a marvel. Either because of or despite their evolutionary origins, humans are a radically new kind of species on Earth.

Life starts up, and, on some of its trajectories, it smarts up. That is as startling in the super-smart human-head-start as anywhere else in the universe. Again, one can say that the primates just got lucky. But one can also wonder if this creative genesis in natural history requires deeper explanations. Chemical reagents remain effective in human biochemistry, but spiritual agency, superimposed on this, is a radically new level of being. We find in persons an agent who must be oriented by a belief system, as, in the biological world, animals are not.

That leaves us with the question of how to authorize such a belief system. In nature scientists find facts of the matter; in culture one needs guidance that is not fact of the matter either in nature or culture. We humans must make religious choices confronting all of occurrent reality: culture as well as nature. The grand narrative, the storied history, produces persons, not just Stegosaurus but Mother Teresa. Acting as spirit, I need an account of evolutionary history, I also need to know whether to be just, charitable, whether and when to forgive sins. Now the is/ought problem emerges urgently, and, impressive though it is, escalating nature offers little help.

In persons, the self-actualizing and self-organizing doubles back on itself with the qualitative emergence of what the Germans call “Geist,” what existentialists call “Existenz.” Matter can, the physicists say, be “excited” under radiation. The neural animal can, the biologists say, become “excited,” emo-
tional. Here, what is really “exciting” is that human intelligence is now “spirited,” an ego with felt, psychological inwardness that cares about itself and its role in the world.

Persons have egos. They feel ashamed or proud; they have angst, self-respect, fear, and hope. They may get excited about a job well done, pass the buck for failures, have identity crises, or deceive themselves to avoid self-censure. Humans are capable of pride, avarice, flattery, adulation, courage, charity, forgiveness, prayer. They may resolve to dissent before an immoral social practice and pay the price of civil disobedience in the hope of reforming their society. They weep and say grace at meals. They may be overcome with anomic, or make a confession of faith. They may insult or praise each other. They tell jokes. Persons act in love, faith, or freedom, driven by guilt or seeking forgiveness – to use categories that theologians have thought fundamental.

Persons have unique careers that interweave to form storied narratives in cultural heritages. They have heroes or saviors, who may die for the sins of the world, launch the Kingdom of God, or launch other passionate ideologies about the meanings of life and history. Persons may become disciples of these sages and saviors, and when they do they realize that to be a person includes a dimension of “spirit.” Where there is reflective, sacrificial suffering love, there is spirit. There is spirit where there is sensing of the numinous, the sacred, the holy. There is spirit where there is awe, a sense of the sublime. There is spirit where, along with an explosion of knowledge, nature escalates as a wonderland. There is spirit when persons confront the limit questions, when persons get goose pimples looking into the night sky or at the Vishnu schist at the bottom of the Grand Canyon.

The singularities, if we may use a theological word, might also be “revealing” not simply about human spirit but about divine spirit, about “Presence.” Science gives us three principal data points: matter-energy, life, and mind. The first is universal; the second is rare; the third is single and we are it. Surveying this trajectory from nature to spirit, we will wonder whether these three phenomena, radically emergent, are all somehow front-loaded into the system, or whether each is a one off surprise. Surprises too can be revealing about what is going on, beneath the surface.

Einstein concluded, famously, that “the eternal mystery of the world is its comprehensibility” (Einstein 1970, 61). Going beyond Einstein, I incline to add that “the eternal mystery of the universe is its generating of comprehending mind.” In this sense, the astronomical, the mathematical, the evolutionary, the genetic, the neurological, and the psychological events all suggest that rational minds may well believe that we inhabit a “spiritual” uni-
verse. We can wonder if there is a “Logos” in, with, and under the logic of
such nature. Maybe we are not so lonely after all; our presence is embraced
by another Presence.

Almost anything can happen in a world in which what we see around us
has actually managed to happen. The story is already incredible, progres-
sively more so at every emergent level. Both good induction and good his-
torical explanation lead us to believe in surprises still to come and powers
already at work greater than we know. For all the unifying theories of sci-
ence, nature as a historical system has never yet proved simpler or less mys-
terious than we thought; the universe has always had more storied achieve-
ments taking place in it than we knew. To detect the work of spiritual forces,
Presence beyond Force, is not, in this view, to be naive but rather to be real-
istic. Anything less is myopic.

References
Oxford University Press.
Press.
Brockman, John. 1995. The Third Culture: Beyond the Scientific Revolution. New York: 
Simon and Schuster.
Clayton, Donald D. 1983. Principles of Stellar Evolution and Nucleosynthesis. Chicago: 
University of Chicago Press.
Cambridge: Cambridge University Press.
Press.
Davies, Paul. 2007. Cosmic Jackpot: Why Our Universe is Just Right for Life. Boston: 
Houghton Mifflin.
Deacon, Terrence W. 1997. The Symbolic Species: The Co-evolution of Language and the 
Brain. New York: W. W. Norton.
De Caro, Mario, and David Macarthur. 2004. Naturalism in Question. Cambridge: Har-
vard University Press.
York: Basic Books.


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For some people, religion concerns actualities and possibilities beyond or in addition to the world of natural processes, while naturalism confines possibilities and actualities in such a way as to rule out supernatural events and realms and beings. Thus, for such people, the phrase “religious naturalism” sounds oxymoronic. Construed in this way, religious naturalism is indeed an incoherent concept. But religious naturalism need not be thought of in this way, and it can be thought of in alternative ways that are deeply compelling, at least to some. The purpose of this essay is to explain one such understanding of religious naturalism, exhibiting the promise of the idea while distinguishing it from inadequate alternatives.

1. Introduction

The phrase “religious naturalism” sounds oxymoronic to many people. For such people, typically, religion concerns actualities and possibilities beyond or in addition to the world of natural processes, while naturalism confines possibilities and actualities in such a way as to rule out supernatural events and realms and beings. Construed in this way, religious naturalism is indeed an incoherent concept. But religious naturalism need not be thought of in this way, and it can be thought of in alternative ways that are deeply compelling, at least to some. The purpose of this essay is to explain one such understanding of religious naturalism, exhibiting the promise of the idea while distinguishing it from inadequate alternatives.

The implication of the argument put forward here is that experts are obligated to consider religious naturalism in its most robust forms, and not merely with the straw-dog dismissals that are still common in philosophical and theological writing. To use the nomenclature of Griffin (2004), these dismissals typically assume that naturalism, including religious naturalism,
must be some or all of sensationist, atheistic, and materialistic, any of which makes the target much easier to hit. But naturalism need not affirm all or any of these doctrines, and religious naturalism likewise. Indeed, Griffin rejects all three of them in articulating his process naturalism. A wide variety of (sometimes mutually inconsistent) extant articulations of religious naturalism also reject these problematic doctrines, even if they do not follow Griffin’s recommendation of a process cosmology. It follows that misunderstandings persist about what religious naturalism can be, and what it need not be, so it is “once more unto the breach, dear friends, once more.”

2. Can Naturalism be Religiously Relevant?

There is a well-known problem with defining naturalism, and it is directly relevant to assessing its religious relevance. It appears that naturalism and supernaturalism take their meanings from one another in the kind of fundamental semantic circle familiar to the crafters of dictionaries. That is, supernaturalism seems to mean something like beyond or above the natural, while naturalism seems inevitably to repudiate anything beyond itself, making it merely “not supernaturalism” or, equivalently, “anti-anti-naturalism.”

Circular systems of meanings might be necessary for capturing the fluid, foundation-free world of language but they are rarely welcome in philosophy. The problem with circular definitions is that they isolate one region within the web of meanings that is needed to evaluate the coherence of concepts, effectively blocking philosophic inquiry. This is vicious circularity, in a playful philosophic sense of an otherwise brutal word. Defenders of incomensurability sometimes invoke a kind of semantic circularity as a virtuous sign of the irreducible and incomparable qualities of life worlds and language games. In the mutual definition of naturalism and supernaturalism, by contrast, the semantic circularity does not appear to have any redeeming virtues. How, then, should we define naturalism so that we can evaluate its religious meaning and relevance?

Two relatively clear definitions of naturalism are present in the works that dismiss its religious value. On the one hand, as suggested above, naturalism

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is sometimes defined as materialism, with no possibility of the transcendence necessary for meaningful religion. This version of the “naturalism is inherently anti-religious” argument correctly locates the problem in the definition of naturalism and I agree that naturalism in this sense is religiously inert. Fortunately for religious naturalists, there are other ways of defining naturalism.

On the other hand, naturalism is quite often defined as ruling out supernatural beings that are necessary for meaningful religion. This version of the “naturalism is inherently anti-religious” argument obviously risks falling prey to the semantic circularity problem but, as we shall see, there is a way to avoid that by steering around the concept of supernaturalism to make the same point. The larger problem is that this argument mistakenly locates anti-religious import wholly in the definition of naturalism whereas we should locate it at least partly in a sorely limited understanding of the conditions necessary for religious meaning. After all, any understanding of religious meaning that rules out as religiously impossible quite a few uncontroversial instances of religious belief and practice (as identifying religion with supernaturalism does) must be operating on too narrow a definition of religion. In other words, naturalism may well imply the rejection of supernatural agents but eliminating supernatural agency is not sufficient to show that naturalism is inherently anti-religious. Thus, we should expect the rejection of supernatural agents, framed so as to avoid the circularity problem, to appear on a list of features commonly found in religious naturalism doctrines.

Neither of these two “naturalism is inherently anti-religious” arguments need detain us any further. Moreover, neither of the associated definitions of naturalism is satisfactory. Thus, we must turn elsewhere for a way into the challenge of evaluating the religious promise of naturalism.

There is an important epistemological understanding of naturalism, which is common among philosophers having no particular religious agenda. According to this view, naturalism asserts that reality consists of whatever can be handled using the methods of the natural sciences, and nothing else (see the discussion in Nielsen 2001). This view of naturalism commendably stays well clear of the vicious semantic circle that attempts to define naturalism as the rejection of the supernatural. It has the great virtue of predicting that the methods and results of the natural sciences will continue to widen their reach, explaining everything that matters to human beings about life and reality (see Wilson 1998) – even infinite-long-run pre-
dictions enhance concrete intelligibility. But this definition really takes no stand on the ontological questions that matter most to religious naturalists and their opponents, and thus remains indeterminate with regard to the question of naturalism’s religious significance.

Certain types of humanism espouse a more intuitive understanding of naturalism. The definition presented by Tom Clark of the Center for Naturalism is typical:

Naturalism is the understanding that there is a single, natural world as shown by science, and that we are completely included in it. Naturalism holds that everything we are and do is connected to the rest of the world and derived from conditions that precede us and surround us. Each of us is an unfolding natural process, and every aspect of that process is caused, and is a cause itself. So we are fully caused creatures, and seeing just how we are caused gives us power and control, while encouraging compassion and humility. By understanding consciousness, choice, and even our highest capacities as materially based, naturalism re-enchants the physical world, allowing us to be at home in the universe. Naturalism shows our full connection to the world and others, it leads to an ethics of compassion, and it gives us far greater control over our circumstances. (Clark 2013)

This definition certainly seems promising for grounding a humanist moral outlook and thus a life way for certain people. But this view is philosophically unsatisfactory regarding the semantic circularity problem and is underdetermined regarding its religious value. The interests of religious naturalism require that it, too, be set aside, or at least significantly elaborated, and perhaps consulted later as one understanding of the practical consequences flowing from a more rigorous definition of naturalism.

Perhaps theologians can help us define naturalism in a way that assists us in assessing its religious value. Two of the most famous Christian theologians of the twentieth century moved in circles close to naturalism: German-American Protestant theologian Paul Tillich (1886–1965) and Catholic theologian Karl Rahner (1904–1984), a German Jesuit influential in Vatican II and subsequent Catholic theology. It is instructive to consider their approaches.

Tillich explicitly rejects supernaturalism (Tillich 1951–1963). More specifically, on the one hand, Tillich rejects supra-naturalism, by which he means the idea that there is a highest being corresponding to the word “God’. He considers supranaturalism idolatrous because it attaches ultimate significance to something that is itself necessarily subject to the categories and dynamic structures of Being. On the other hand, he rejects super-naturalism, by which he means suspensions or violations of the categories or dynamic structures of Being, as specified in his carefully conceived ontology. He considers supernaturalism philosophically incoherent. These twin rejections are helpfully specific and seem to launch us on a promising trajec-
tory toward something like religious naturalism. But Tillich also explicitly addresses the philosophical and theological feasibility of naturalism. While he appreciates naturalism in most respects, he refuses to use the word “naturalism” to describe his outlook because of its alleged failure to register the infinite qualitative difference between nature and its ontological ground (i.e. God). In other words, naturalism fails the transcendence test required for a convincing religious worldview – a criterion of exactly the sort we are seeking. The obvious questions here are how much transcendence is really enough for religion? And can naturalism be rendered open to infinite transcendence of Tillich’s sort? Along either path lies a promising religious future for naturalism – the first by rejecting Tillich’s assertion that infinite transcendence is religiously necessary (the path of a variety of humanist forms of naturalism) and the second by showing that nature can include infinite transcendence and thus that Tillich is, after all, a religious naturalist, properly understood (the path of Corrington 1994).

Evaluating the religious relevance of naturalism is further complicated by usages of supernaturalism that do not contrast so much as merge with naturalism. This is where Rahner enters the interpretative picture. Rahner uses the phrase “supernatural existential” to describe human nature, though in a different way than does Martin Heidegger, from whom the term is adopted. For Rahner, the self-communication of God, which is the fundamental meaning of grace, is a permanent feature of the human condition. Human existence cannot be grasped without this supernatural component, which brings spiritual meaning to every choice and makes possible the self-transcending potentials of the natural world. Yet in other respects, from his embrace of evolutionary biology to his realism about the everydayness of human life, Rahner appears to adopt something not far from a kind of naturalism. This makes it impossible to tease naturalism and supernaturalism apart in his thought: the ontological depths of the natural world just are its graced character as the self-communication of God. Supernaturalism is the natural in its self-transcending, graced aspect (Rahner 1987). In this case, the relevant puzzle is how to define supernaturalism, and whether defining it in Rahner’s way opens up a way for naturalism to be superrailly religious, despite the confusion with other common usages that such usage causes.

When we finally turn to works explicitly articulating religious forms of naturalism (such as those listed in the Introduction), we see an emerging consensus around a family-resemblance collection of features that religiously useful forms of naturalism tend to display. The point of speaking of family resemblance here is that this emerging consensus is not on a single
coherent doctrine, but rather on a list of propositions, most of which occur in a variety of combinations in each version of naturalism asserted to be religiously relevant. This assessment of an emerging family-resemblance consensus derives from my regular teaching of a course called “Varieties of Religious Naturalism.” I will not be able to support this claim in the space available here as it is a high-level judgment about a large amount of literature. It may be best, therefore, to regard the statement of this emerging family-resemblance consensus as an hypothesis that others are invited to test. As an interpretative judgment, it can be evaluated one work at a time by asking of each book in the long list above whether it affirms most of the propositions below.

With these caveats in mind, I assert that religiously useful naturalism affirms most of the following:

1. Nature is sacred in its beauty, terror, scale, stochasticity, emergent complexity, and evolutionary development.

2. The sacredness of nature expresses the self-transcendent potential of nature, and especially of natural creatures with self-awareness and moral imagination such as human beings.

3. The sacredness of nature imposes moral obligations upon us to understand, appreciate, and preserve the parts of nature under our influence, taking full responsibility for our creative strategies through increasing compassion and control.

4. There is no supernature: no supernatural agents, no supernatural means of knowledge, no supernatural authorizations, and no supernatural deity.

5. Religions encode much wisdom about sacred nature but this religious wisdom is distorted in myths and legends that harden into literal descriptions of reality. Thus, religious naturalism can affirm traditional religions in some respects and must criticize them in other respects.

6. Human beings are vulnerable to cognitive error, which keeps religious distortions and superstitions alive. Careful education can confer on individuals the ability to recognize and contest these cognitive biases.

7. Religious naturalism will become increasingly attractive and socially viable as plausibility structures are changed by education that corrects cognitive biases and by centralizing humanist and ecological values in our species’ quest for survival.

The cumulative affirmation here is that naturalism, understood in a particular way – namely, as affirming most of the propositions in the list above – can be religiously relevant and can define a life world for people drawn to it. It is
arguably this religious understanding of naturalism, so richly represented in
the literature, that should be the target of analysis and critique, rather than
the simplistic, misleading, or religiously underdetermined alternatives. It is
also this religiously potent version of naturalism that needs to be formalized,
if only to catalyze understanding and to focus relevant critique.

3. Formalizing a Concept of Religious Naturalism

It is possible, I contend, to formalize this emerging family-resemblance con-
sensus in such a way as to overcome the vicious semantic circularity prob-
lem, articulate the probably infinite self-transcendence of nature, centralize
humanistic and ecological values, connect with profound religious concepts
such as grace and God and suffering and emptiness, resolve the problem of
religious diversity, and create the conceptual basis for a spiritual movement
that in all likelihood will increase in social viability. At this point we move
from interpreting and summarizing extant literature to my own constructive
formalization of religious naturalism. If my high-level interpretative hypoth-
esis about an emerging family-resemblance consensus among religiously rel-
evant naturalisms is correct, it will be possible to trace my formalized state-
ment of religious naturalism back into the richly diverse literature. Either
way, though, the formalization that follows stands as a complex hypothesis,
subject to evaluation and correction on its own terms.

a) Four Ontological Hypotheses

In the final analysis, setting limits on ontological inventories (as any form
of naturalism does) is an exercise in hypothesis formation and justification.
Like any hypothesis, naturalistic ontological hypotheses might need to be
refined and perhaps even rejected in the long run. For now, the ontological
hypotheses associated with naturalism can be expressed, without falling prey
to vicious circularity or spiritual inertness, as follows.

Naturalism’s Ontological Inventory Hypothesis: Awareness, intentionality,
and agency are exclusively properties of emergent systems that we call bod-
ies with central nervous systems. Consequently, there is no disembodied
awareness, no disembodied agency, and no disembodied intentionality. The
contention that there is disembodied awareness, agency, or intentionality is
called supernaturalism, and grounds the possibility of beings such as angels,
demons, jinns, bodhisattvas, ancestors, spirits, ghosts, and gods. The rejec-
tion of supernaturalism in this specific sense is called *naturalism*, and rules out of reality all such beings, including any deity conceived as an aware, intentional, or agential being.

**Naturalism's Ontological Transcendence Hypothesis:** The natural world understood in terms of the Ontological Inventory Hypothesis is self-transcending, both reflexively – self-transcending emergence is a side effect of cosmic development and biological evolution – and purposively – self-transcendence permits emergent creatures to set and achieve goals, thereby establishing new forms of life that can become the basis for further novel goal-setting and goal attaining. The combination of reflexive and purposive self-transcendence makes possible a process of complexification and intensification that is in principle perpetual and unlimited, though in practice this process may be hedged about by limitations and may even significantly collapse in certain circumstances.

**Naturalism's Ontological Sacredness Hypothesis:** The self-transcending quality of natural reality is the fundamental sign of its religious sacredness and the source of its spiritual relevance. The condition for the possibility (or the Whence) of the in-principle-unlimited self-transcendence of nature is the actual ontological referent of ultimacy language in all religious and philosophical traditions, and its status as the condition for the possibility of anything actual implies that it infinitely transcends the determinate objects and processes of nature. This Whence is named and thus partially cognitively grasped and imperfectly existentially engaged in a host of ways, which collectively amount to complementary perspectives on something that necessarily surpasses the complete cognitive grasp of any determinate being. Symbolic expressions of ultimate realities are frequently and mistakenly taken to refer to supernatural entities; these mistaken identifications are facilitated by inbuilt cognitive biases within the human mind. These facts concerning the reference and symbolism of ultimate realities resolve the conceptual aspects of the problem of religious diversity, though taken alone they have little impact on the practical aspects of that problem.

**Naturalism's Ontological Components Hypothesis:** Naturalism may rule out disembodied awareness, intentionality, and agency, but it does not rule out values, potentials, regularities, and other non-material aspects of nature, which are necessary for articulating anything of importance, including science, spirituality, morality, and aesthetics. In fact, ontological monism of the materialist and idealist kinds can account neither for the Ontological
Transcendence Hypothesis’s unlimited self-transcendence of nature nor for the ultimate existential value of unlimited self-transcendence for emergent beings. Ontological dualism presupposes disembodied awareness, intentionality, or agency, and thus is ruled out by the Ontological Inventory Hypothesis. Consequently, the ontological components of nature must be simultaneously material and valuational, yielding a dual-aspect or di-polar monism. Such di-polar monism can be conceived in a variety of ways, from primal substances to moments of process, and from elements of semiotic flux to venues of natural potentialities.

In my preferred version of religious naturalism, I would add further details to these four ontological hypotheses. These include (1) emphasizing the final apophatic inexpressibility of the Whence, understood as the ultimate condition for the possibility of every determinate natural being and process, including nature’s unlimited-in-principle self-transcendence; (2) introducing a “disintegrating metric” that allows for the evaluation of better and worse in conceptual models of this ultimate Whence even while itself ultimately failing in the conceptual journey toward ultimacy; (3) specifying a particular di-polar ontology; (4) defending an essentially Nietzschean or Schopenhauerian constructivist conception of moral responsibility; (5) articulating principles for connecting with and drawing from wisdom encoded in living religious traditions; (6) defining principles for harmonizing with all of the natural and human sciences; and (7) presenting an argument that religious naturalism of this specific type is substantially identical with three other conceptual models of ultimacy: a particular type of ground-of-being theism (familiar within western philosophical theology), a particular version of śūnyatā or ultimate emptiness (familiar within south Asian philosophical theology), and a particular version of axiological depth structures and flows (familiar within east Asian philosophical theology).

Thus, religious naturalism in my preferred formulation is far from being a new movement, as contemporary advocates of religious naturalism sometimes assert of their preferred views. Rather, it has persisted on the underside of most religious and theological traditions for millennia, particularly in their more mystical and conceptual sub-traditions. Those more specific considerations can be set aside for the purposes of this essay because the focus of my attention here is on what can be said about the formalization of what I take to be an emerging family-resemblance consensus among recent advocates of religious naturalism, and the religious and spiritual significance of that consensus viewpoint.

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b) Comparing Religious Naturalism with Personal Theism

The question of evaluating these four hypotheses is extremely challenging. In comparative forms of philosophic inquiry – what I elsewhere call comparative natural theology⁵ – it is possible to draw tentative conclusions about the relative conceptual adequacy of worldviews such as this one – and this even in a post-foundationalist, fallibilist framework for inquiry where there are no knockdown proofs⁶. Pursuing this lies far beyond the scope of this essay, obviously⁷. A simplified example illustrates something of what is involved.

Among all of the religious worldviews that exist, consider just the formalization I have just presented of the emerging family-resemblance consensus view of religious naturalism in comparison with a contrary view that regards awareness, intentionality, and agency as ontologically primal, and attributes these characteristics to a creator deity⁸. The comparative contest between religious naturalism and personal theism occurs on many fronts simultaneously, so let us just consider one front, namely, the relative plausibility of these views in light of the apparent fine-tuning of cosmic conditions for life. Cosmological fine tuning refers to the fact that it is difficult to imagine chemistry, let alone life and self-awareness, if key physical constants are varied very much at all from what they are.

Personal theism rightly takes cosmological fine tuning as evidence supportive of the ontological primacy of intentionality and agency because fine tuning suggests that deliberate design is the only sufficient explanation. Religious naturalism, by contrast, would predict a multiverse scenario in which many different combinations of physical constants are realized in virtually infinitely many universes, thereby eliminating the need to invoke intentionality and agency to explain apparent cosmological fine tuning of this one universe. Alternatively, religious naturalism would predict that what currently seem to be independent and freely varying constants would eventually turn out to be necessary and interlocked constants; this would also vitiate the evidential support of apparent fine tuning for personal theism. Personal theism does not require apparent fine tuning to be upheld; that worldview survives either way, albeit with significantly more energy in the case that apparent fine tuning survives scientific scrutiny. Meanwhile, religious natu-
eralism is far less plausible if cosmological fine tuning occurs within a single universe having multiple, independent, freely varying physical variables.

Interestingly, and in passing, I note that this relationship repeats over many respects of comparison and resolves into a pattern: personal theism tends to be indefinitely flexible and better able to fend off contra-indicating data, while religious naturalism tends to be more concretely intelligible (that is, we know better what we would have to do to render it implausible) and better able to take advantage of corrective resources for its own improvement. Perspectives on inquiry exist that appreciate either (but not usually both) of these features as virtuous elements of a worldview. It follows that preferred moralities of inquiry can be influential factors in determining preferences between personal theism and religious naturalism.

As we work through the various relevant respects of comparison – and there are many dozens to consider, from the scientific to the philosophical, and from the psychological to the moral – we gradually built up plausibility profiles for religious naturalism and personal theism. With a sufficiently rich appreciation for these intricate plausibility profiles, we put ourselves in a position to make informed judgments of relative adequacy. There would be no knockdown proofs, and the two (classes of) views would simultaneously exhibit superiority and inferiority to one another in different respects, so the overall judgment is not clear-cut; indeed, an overall judgment could be more or less indefinitely resisted by those committed more to one particular worldview than to the impartial assessment of relevant evidence. Nevertheless, for those interested in the arduous task, a relevant evaluative process does exist. Obviously, further worldviews can be drawn into the same comparative competition, at the price of increasing the complexity of the comparison.

c) Comparing Religious Naturalism with Non-Religious Naturalism

The comparison on the other side of religious naturalism – not with personal theism but with non-religious naturalism – is challenging in a different way. But the formalization proposed above of what I take to be the emerging family-resemblance consensus within religious naturalism offers relevant resources. Especially important here is the Ontological Transcendence Hypothesis.

Naturalists of almost all kinds affirm the Ontological Inventory Hypothesis, so there is no support from that quarter for a distinction between religious naturalism and non-religious naturalism. Likewise, the Ontological Components Hypothesis posits the rejection of simple forms of monism
(including materialism) in the course of a debate over what naturalism needs to explain – a debate in which all naturalists, both religious and non-religious, have a stake. This yields a necessary-but-not-sufficient condition for naturalism to be religiously relevant – there must be a realistic account of non-material aspects of nature such as value – but this might well be affirmed by a non-religious naturalist as well, so the Ontological Components Hypothesis does not yield a clear criterion for a distinction between religious naturalism and non-religious naturalism any more than the Ontological Inventory Hypothesis does.

The other two hypotheses – the Ontological Transcendence Hypothesis and the Ontological Sacredness Hypothesis – jointly define the heart of religious naturalism in my formalization of it and they yield a criterion for distinguishing religious from non-religious forms of naturalism. Religious naturalists both affirm the unlimited self-transcending quality of natural reality and regard this quality as the fundamental sign of nature’s religious sacredness and the source of its spiritual relevance, while non-religious naturalists typically reject one or both of these hypotheses. The contrast is different depending on which hypothesis is rejected.

One the one hand, when a version of naturalism rejects the in-principle-unlimited self-transcendence of natural reality, it removes the impetus for an account of ultimacy, understood as the condition for the ontological possibility and existential meaning of unlimited self-transcendence. Most of what religious naturalism tries to describe and explain is thereby sidelined as needlessly elaborate over-belief, an only-partially-demythologized vestige of religious superstitions of the past. From the religious naturalist’s point of view, the non-religious naturalism that results from rejecting the in-principle-unlimited self-transcendence of nature is spiritually hobbled: it stubbornly refuses to speak of the profoundest parts of natural reality – realities that have been subject to systematic misinterpretation in the world’s myths and religions yet still give themselves over to be recognized, explained, and engaged.

Often at stake in this fundamental difference in ways of seeing the world is the type or degree of self-transcendence that supposedly manifests in nature. There is common territory: all naturalists can accept an account of emergence in which nature under certain circumstances yields creatures capable of forming and attaining goals, and of stabilizing complex forms of sociality that permit even more adventurous goal-oriented behavior. But this purposive self-transcendence is a mere fact of life for the non-religious naturalist, whereas the religious naturalist discerns great significance in its in-principle unlimited character.
Furthermore, the non-religious naturalist may not even notice reflexive self-transcendence in cosmic development and biological evolution, or may regard putative reflexive transcendence as a vestigial proxy for teleologies, entelechies, and life forces for which science has found no explanatory role. In fact, some forms of religious naturalism are vulnerable to precisely this critique: postulating proxies for imaginary forces that do no causal or explanatory work\textsuperscript{9}. While asserting the existence of causally efficacious reflexive self-transcendence in cosmic development and biological evolution would decisively distinguish religious naturalism from non-religious naturalism, in my view it would do so at the price of indulging teleologically wistful ontological fantasies. This is why I defined reflexive self-transcendence within the Ontological Transcendence Hypothesis in the specific way I did: “self-transcending emergence is a side effect of cosmic development and biological evolution.” This wording is intended to block florid hypotheses about life forces and telic cosmic urges in favor of recognizing the profound value of an emergent pattern, even when it is wholly explicable as a side effect of cosmic development and biological evolution. The analogy with fine cuisine fits: there was no entelechy driving nature to produce beautiful food but it is nonetheless valuable as a side effect of cosmic, biological, and cultural evolution.

Why speak of reflexive self-transcendence in nature when it does no causal work? Why stress the in-principle-unlimited character of purposive self-transcendence when infinite transcendence (infinite anything) can never be confirmed? With these questions we arrive at the heart and soul of the difference between religious naturalists and non-religious naturalists. The religious naturalist speaks of these things to make symbolic resources available for guiding spiritual quests, understood as one of the highest emergent values of life. This is a kind of testimony without which human existence is impoverished: it is true that the Dao cannot be daoed, and that the Dao does nothing, but it is equally true that to cease speaking of the Dao altogether for fear of inevitable distortions is to promote a very great distortion, flattening out nature’s depths. So speak we must, according to the religious naturalist, even though great risks attend such speech. One of the most prominent risks of speaking is that symbols for inspiring and guiding spiritual quests are fodder for the array of cognitive errors to which human beings are subject, and can thereby reinforce mistaken metaphysics

\textsuperscript{9} For example, see Corrington 2013, who formulates Schopenhauer’s Will to Life as a “force” while attempting to remain fully consistent with evolutionary biology.
and ontologies that pine for the very forms of discarnate intentionality and teleology that naturalism opposes by definition.

On the other hand, if naturalists accept the unlimited self-transcendence of nature in its purposive and reflexive aspects but refuse to regard this as expressive of the sacred, or as spiritually or religiously relevant – that is, if the Ontological Transcendence Hypothesis is accepted but the Ontological Sacredness Hypothesis is rejected – then we arrive at another difference in ways of seeing between non-religious and religious naturalists. This is a less tractable difference of perspective than the one just discussed. In this case, the non-religious naturalist is refusing spiritual quests even while accepting every aspect of ontology that the religious naturalist minimally requires to articulate the meaning of spiritual engagement with ultimacy (understood as the condition for the possibility, the ontological Whence, of in-principle-unlimited self-transcendence). This difference in ways of seeing may be irreducibly a matter of temperament or aesthetic preference. If so, it cannot be made the subject of useful philosophical debate. Rather, the conflicting perspectives can only be mediated through engaging one another’s worlds of experience, and even that may not result in resolution, though it should yield mutual appreciation.

4. Resonances of Religious Naturalism

These four ontological hypotheses formalize what I see as the emerging family-resemblance consensus within literature explicitly articulating religious naturalism during the last century (again, see the list of exemplary works in the Introduction). The resulting worldview richly resonates in multiple directions: backwards through the complex history of human reflection on reality and ultimacy, inwards to the endlessly fascinating world of human spiritual longings, outwards to the perpetual challenges of moral and political life, and forwards into an ecologically and socially uncertain future. Spelling out some of these resonances will help to make clear the philosophical-theological pedigree, socio-religious power, moral relevance, and spiritual allure of religious naturalism – again, at least for some people, and at least under certain civilizational conditions.

a) Backwards through the history of theology

When Śaṅkara (788–820) conceived God as Nirguna Brahman, God without attributes, he was articulating a position closely compatible with the consen-
sus formalization of religious naturalism presented above. When Augustine described God as *Esse Ipsum*, Being Itself, and Thomas Aquinas as *Actus Purus*, Pure Act, they were breathing life into the longer tradition of religious naturalism, though under a very different description. Similarly, the “God Beyond God” of theistic mystical traditions, having so much in common with Śaṅkara, as well as the Daodejing’s conception of a cognitively elusive deeply patterned dynamical structure in reality, can all be rendered consistently with the Whence of religious naturalism.

In all these cases, though, religious naturalism also pushes back against supernatural elaborations that have been common. For example, the west’s God Beyond God has often enough been conceived as the all-surpassing highest-reality-beyond-being in a “great chain of being” that also includes disembodied beings with awareness, intentionality, and agency – gods, angels, demons, ghosts, and other discarnate entities (see Smith 1976). Religious naturalism relates to this so-called perennial philosophy by affirming the highest level (the God beyond God) and the lowest level (natural reality where awareness, intentionality, and agency is embodied) and regarding everything else – from human souls through discarnate subordinate beings to God as the highest being – as symbolic expressions of the meaning of life in the ambit of the Whence, the abysmal and creative depths of nature.

Religious naturalism expresses a critique of the so-called the Jerusalem-Athens synthesis wherein the personal God of the Bible and the transpersonal God of the Philosophers are held to be compatible. In the religious naturalist framework, this longstanding view within the Abrahamic religions is a result of multiple symbol schemas active within the religious communities on behalf of which theologians have often labored. The juxtaposition of symbols is unproblematic but the literal metaphysical reading of that juxtaposition produces an incoherent model of ultimacy. Metaphysically speaking, either God is focally aware and intentionally agential, or not. The decision about this single proposition cleanly divides personal theism from everything else, including religious naturalism, impersonal theism, and anti-religious atheism. Augustine and Thomas famously try to keep these opposed alternatives together, leading to complex debates of interpretation, especially in Thomas’s case. What might be called their *dominant* philosophical models of God, however, do resonate with religious naturalism.

In the Chinese context, the ultimacy model supplied by certain philosophical Daoist interpretations of the *Daodejing* is sometimes expanded into an intricately elaborated worldview of ancestors and other discarnate entities. Ideally, every part of reality is harmonized within the fluxing rhythms of nature, which defines the norms of wellbeing to be employed in rectifying
discord when it arises. This worldview also resonates strongly with religious naturalism, though religious naturalism pushes back against the ancestors, souls, and other discarnate entities, and also possibly holds out for a more complex understanding of wellbeing and harmony in nature, demythologizing the Dao. Much the same is true for the original nature religion, shamanism, in its host of forms.

All of these illustrations make the same point: religious naturalism is a profoundly meaningful strand of wisdom widely woven into the tapestry that is religion on planet Earth. It persists mostly on the underside of the major religious traditions, the less popular shady haven to which people can turn for relief from the garish brightness of belief in supernatural agents, perpetually in thrall to uncorrected cognitive biases. Thus, religious naturalism quietly nurtures the religious traditions whose juggernaut social power also carries religious naturalist ideas along for the ride. The quieter, shady regions within these traditions are usually found near the mystical thinkers and scattered within the intellectual sub-traditions. Not everyone knows about them but they are there, waiting to enfold the desperate seekers of relief and to stimulate the curious souls eager to venture beyond the well-marked safety zones of the large wisdom traditions. This is how religious naturalism arrives in our present: with a powerful philosophical pedigree and with clear spiritual and pastoral applicability to a certain type of person.

b) Inwards to spiritual longings

How should we describe the kind of person for whom religious naturalism is food for the soul? Given the dominance of supernatural-agent beliefs within religion, from ancient shamanic and tribal contexts to multicultural global religious traditions, it is obvious that naturalist soul food will be minority fare, satisfying to a distinctive clientele and bizarre or even disgusting to the majority. Yet anything capable of captivating the attention of a sometimes misunderstood minority must possess a certain type of spiritual potency, a peculiar applicability to the trials and travails of human life.

To begin with, approximate measures of the size of this minority, at least in the United States, have become available through two types of demographic studies. On the one hand, when the Pew organization began asking people not only whether they believe in God (92% do, according to Pew 2008) but also what kind of God they believe in, about 27% of God-believers reported finding a non-personal understanding of God at least as attractive as a personal one. On the other hand, Pew’s analysis of the so-called “nones” (people who do not identify with any religion) reveals both
rapid growth, especially in the younger age groups, and robust spiritual interests of the spiritual-but-not-religious sort (see Pew 2012). The second fact shows that something is culturally afoot that is probably enhancing the attractiveness of religious naturalism, while the first fact shows that this is happening inside as well as outside religion and suggests that this interest may have been present within religion for a very long time. After all, Plato and Aristotle, Augustine and Thomas, Maimonides and Ibn Rushd (Averroës), Śaṅkara and Nāgārjuna, Confucius and Laozi all explored models of nature and ultimate reality significantly resonant with religious naturalism, and the non-personalist elements of their ultimacy models found a receptive home in some human hearts.

What is gained spiritually when the minimally personal characteristics of ultimate reality (again: awareness, intentionality, agency) are surrendered in favor of the conceptually far less determinate Whence of nature? For some – the clear majority, at least 60% of Americans according to Pew (2008) – nothing is gained and everything that most matters is lost. Yet even this majority – for whom reality becomes lifeless, life purposeless, and purposes pointless, without a personal agent at the center of everything – can empathically stretch to grasp an alternative spiritual worldview, held with passion comparable to their own. After all, this empathic exercise is little different than stretching to understand non-theistic, religiously potent worldviews such as those of Buddhism, Confucianism, and Daoism, and personal theists do have a record of being willing to undertake such dialogues with the Other. The way to pursue such a dialogue with religious naturalists most responsibly is to read some of the key works that depict the spirituality involved. But shortcuts are possible, with forgiveness for inevitable oversimplifications.

The religious naturalist feels at home within sacred nature. Nature’s beautiful wildness punctuates its inhospitable expanses, graciously enables life, and perpetually threatens the natural miracle of stable bodily function. While it exists, life presses into possibility everywhere it can, exploring with wonder and fear, dancing with the sacred, whooping up a joyful hullabaloo under the stars. At the same time, rightly or wrongly, the religious naturalist is weary of what feels like the fantasy of supernatural agents, wary of the deflections of responsibility that supernatural agents so often sponsor, and wounded by the ferocity of supernaturally authorized coalitions in which fantasy accumulates and hardens into social control. In retreat from this

10 Especially useful in this regard are Berry 1999; Crosby 2008; Goodenough 1998; Hogue 2010; Peters 2002; Raymo 2008; Rue 2004; Shook and Kurts 2009.
harsh world of forceful delusions, the religious naturalist self-consciously embraces realism and the grittiness of moral appraisal that comes with it. For example, just as a human life is gratefully enjoyed and creatively exercised, that life is nobly or tragically returned to the soil when the body disintegrates, or is taken by microorganisms, murderers, or meat-eating predators. This is not a longing for the continuation of consciousness after death but rather the dew drop slipping silently into the shining sea. And the point of it all? As the Hindus would say, it is \textit{līla}, or divine play; Calvin called it divine glory; and both Śaṅkara and Nāgārjuna thought it was the weaving of \textit{saṃsāric} illusions around an inexpressibly plenitudinous emptiness. For the religious naturalist, the whole of reality does not need to cohere in the manner of a divine personality, and it is a relief not to have to pretend that it does.

c) Outwards to moral and political life

Typically the religious naturalist is openly humanistic in moral outlook, radically inclusive of others, ecologically aware, and deeply invested in challenging cognitive-emotional defaults that tend to interfere with the attainment of an optimally peaceful human world that permits everyone to realize such potential as they possess. But the religious naturalist does not merely receive moral bearings from an authoritative wisdom tradition or from a morally coded cultural heritage; rather, morality is a matter of choice, with eyes wide open to the exercise of will that is involved. At least, choosing one’s moral framework is the ideal towards which the religious naturalist strives. This is an ideal that is difficult to realize, requiring enormous effort of self-awareness and cultural criticism to gain the requisite distance on the socially constructed world into which we arrive as impressionable babies.

It follows that the typical religious naturalist prizes education that leads to wisdom, individualism that leads to responsibility, corporate life that leads to cultural adventurousness, and freedom that leads to the defining and maintaining of wisdom traditions, perpetually prophetically purified as necessary. These values flow from the core commitment to realism and self-awareness but there is no natural moral order that determines these vague prescriptions in any detail. There is certainly room for every mainline variety of political perspective in the religious naturalist world. What the religious naturalist would utterly cast out of social and political discourse is the manipulative or unreflective supernatural authorization of moral claims and of the individuals and groups that make them.
At this point the religious naturalist becomes the resistor of bullying behavior and the raiser of consciousness for the sake of corporate resistance to fantastical rationalizations of what amounts to little more than coercion. Despite this libertarian focus on the right not to be bullied, the greatest adventures for the religious naturalist are not assertions of individual freedom but willing and aware participation in majestic forms of human sociality. These include movements of scientific inquiry, movements of cultural expression, movements for global distributive justice, movements to eliminate needless suffering, and movements to preserve the ecology of our home planet. The religious naturalist, therefore, does not blindly resist political organization but rather deliberately refines it and employs it to realize corporate goals so lofty that an individual can only ever dream them.

d) Forwards into an uncertain future

So long as perpetually spontaneously arising supernatural beliefs are not systematically challenged through education and other means of consciousness raising, religious naturalism will remain a minority view. It will ride on the coattails of the social power of established religious juggernauts while offering spiritual solace and refuge to those within such traditions in need of a different type of spirituality than the main tradition offers. But it will never lead the way and it cannot survive on its own. This is the way it has been for the rich strands of religious naturalism throughout the multi-millennia tapestry of religious history. But need this always be so? Might civilizational commitments change to the point that the majority loses interest in the questionable delights of illusory supernatural worlds, and supernatural believers become the benighted minority, stepping carefully, praying for the collapse of this new naturalist civilization so as to return to a simpler, less enlightened time where people’s reflexive beliefs in supernatural agents and their ready acceptance of supernaturally authorized coalitions was not systematically challenged?

If anti-supernaturalist beliefs were to become dominant, religious naturalism would become the centrist movement that it never can be otherwise. As a centrist movement, it would have to handle two perpetual challenges. On one side, religious naturalism would hold off anti-religious sentiments by urging the exploration of noble spiritual quests as a vital part of human life and highlighting resources from longstanding wisdom traditions as effective and tested guides to such spiritual quests. On the other side, religious naturalism would offer spiritual motivation to maintain the educational and other consciousness-raising movements that deliver human beings from
becoming the unthinking victims of their default cognitive-emotional tendencies, and thereby conferring upon them freedom to choose their spiritual worldview.

Is such a civilization possible? In some respects, we seem to be headed in that direction, but only in certain places and only when economic conditions remove the deprivation that robs people of the chance to realize such socially demanding civilizational possibilities. Secularizing trends and ecological crises contribute to this transformation, as do economic prosperity and the multiculturalism that interferes with supernatural authority of every kind. But lines of resistance have so far been plentiful, strong, and largely successful, especially in the United States. Religious naturalism is typically not an evangelical outlook and religious naturalists rarely feel any need to rush people where they are not ready to go11. Practically, religious naturalism can forge cooperative agreements across worldview boundaries on urgent issues such as war and environmental disaster, while remaining a latent possibility within every wisdom tradition, ready when supernaturalism fails our species and a different type of conceptually robust spirituality is needed.

References


11 Though atheistic naturalism does have an evangelical edge; see Dawkins 2006; Dennett 2006; Harris 2006; Hitchens 2007; Stenger 2007, among others.


Religious Naturalism


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The notion of qi (commonly translated as cosmic energy or material force) plays a central role in Chinese philosophy. Both Confucianism and Daoism build their philosophical systems on this notion. Qi is the primary constituent of all concrete things and it contains two forms: yin and yang, which can be interpreted as negative and positive energy in today's terminology. The cosmology championed by Chinese philosophers and astronomers takes the original state of the Universe to be a vacuous, formless state of qi, seething with energy. This cosmology has a naturalistic spirit in that it does not posit any supernatural, transcendent realm prior to the original cosmic state, and yet it has not been accepted into the naturalist camp for the lack of any working reduction between qi-terminology and contemporary physical terms. This paper argues that the currently dominant scientific naturalism is too narrow to be an apt theory of nature, and a more appropriate conception of naturalism is liberal naturalism. Liberal naturalism acknowledges other forms of explanation of the world as naturalistic, even if those explanations are not reducible to physicalistic terms. Under this more liberal conception of naturalism, this paper further presents a legitimate qi-naturalism by explicating the development of qi-cosmology in Chinese intellectual history.

1. Introduction

This paper offers a systematic analysis of the development of Chinese cosmology based on the notion of qi. Chinese qi-cosmology is not a unified view even though all philosophers share the key concept of qi. The controversial issues discussed in this paper include:

1. Was there something or nothing at the beginning of the Universe?
2. Were there one or two modes of qi in the original state of qi?
3. Was qi regulated from the start or was it initially in a state of chaos?

What the paper identifies as the penetrating theme of these selected philosophical texts is a naturalistic conception of qi. By analyzing the above issues in naturalistic terms, the paper aims to demystify the notion of qi so as to render Chinese cosmology a respectable metaphysical position.
However, what counts as “naturalistic” is a contentious issue. This paper will begin with an introduction of the various conceptions of naturalism in contemporary Western philosophy. It will show that naturalism should not be restricted to the narrowest conception of scientific naturalism, according to which only what can be ultimately explained by natural sciences is part of reality. Chinese notion of qi is presently excluded from the scientific discourse, and whether it will ultimately become compatible with the scientific image of the world remains to be investigated. Therefore, under scientific naturalism, it is highly arguable whether Chinese qi-cosmology can be considered “naturalistic.” However, what scientific naturalism excludes from its ontology include a host of events, properties and phenomena, such as value, normativity and subjectivity, that are of great humanistic interest. This paper appeals to Liberal Naturalism, championed either in name or in spirit by Hilary Putnam, John McDowell, Thomas Nagel, Tim S. Scanlon, Mario De Caro, David Macarthur and the like, as the right form of naturalism. It will argue that under Liberal Naturalism, Chinese qi-cosmology is a naturalistic philosophy.

2. Naturalism and Its Multiple Faces

“Naturalism” in today’s usage is an umbrella term that covers a variety of views. Some views pertain to the nature and the scope of existence, and such views can be called “ontological naturalism.” Some other views do not make any direct ontological claim as to what kinds of things exist, but relate existence to methodological constraints modeled after natural sciences. These views are grouped under “methodological naturalism.” Ernan McMullin presents the difference between “ontological naturalism” and “methodological naturalism” as such:

[Ontological Naturalism]  Nature (capital “N”) is the sum total of existence. There is nothing beyond the physical universe, beyond the vast complex of beings linked together causally in space and time.

[Methodological Naturalism]  All that exists is accessible to the set of scientific methods including observation, experiment, idealization, hypothesis testing, and much else (McMullin 2011, 82).

The above distinction reveals a close connection between naturalism and natural sciences. One could easily go from endorsing methodological naturalism to embracing a version of ontological naturalism: since the scope of existence is no more and no less the physical universe and since the proper
methods of investigation of the physical universe are those found in natural sciences, a natural conclusion one should draw would be: *Whatever that cannot become the subject matter of natural sciences does not exist.* This view offers exclusive epistemic privilege to natural sciences. The marriage between ontological naturalism and methodological naturalism constitutes *Scientific Naturalism*, a popular, or even dominant, worldview in current naturalistic discourse. This view is defined as follows.

[Scientific Naturalism]¹ The world consists of nothing but the entities to which successful scientific explanations commit us. (De Caro and Macarthur 2010, 4)

However, one serious drawback of Scientific Naturalism is that it precludes other facts that are incompatible with scientific methodologies, and yet are of great humanistic interest. De Caro and Macarthur, for example, argue that under Scientific Naturalism, “there seems to be no room for the existence of normative facts – or at least this will be so insofar as they cannot be reduced to the kinds of objective, causal facts with which natural science deals” (De Caro and Macarthur 2010, 1). Tim S. Scanlon points out that under the scientific view of the world, moral judgments do not state truths because they are seen not to describe the world. However, Scanlon argues that even if we accept the claim that science gives “a complete account of the occurrence of events in the spatio-temporal world and of the causal relations between them,” we do not need to accept the claim that “there are no true statements about anything other than what science deals with” (Scanlon 2003, 174 f). Barry Stroud argues that the restricted form of naturalism, one that incorporates reductionism, would have to “eliminate the evaluative vocabulary altogether,” since nature is said to be “value-free” (Stroud 2004, 31). John McDowell points out that the scientific conception of nature as a realm of law renders the spontaneity of our understanding (Kant’s term) impossible. He further speculates that perhaps “the relations that constitute the structure of the space of reason … are not visible there, as such, in nature as the paradigmatic natural sciences depict it” (McDowell 1994, 73). Thomas Nagel (1974) questions how consciousness or the subjective character of experience could ever be captured by any reductive analysis of the mind. These notoriously irreducible first-person experiential facts, commonly called

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¹ According to David Macarthur, Scientific Naturalism can be further divided into three forms: Extreme Scientific Naturalism identifies science with physics alone; Narrow Scientific Naturalism includes only natural sciences; and finally, Broad Scientific Naturalism identifies science with both the natural sciences and the social and human sciences (Macarthur 2010). At its broadest form, Broad Scientific Naturalism [BSN] might be very close to Liberal Naturalism. However, it is still an issue of contention among Liberal Naturalists whether BSN is liberal enough (De Caro and Macarthur 2010, 8).
phenomenal qualities or qualia, defy the third-person methodology of natural sciences. In his most recent book *Mind and Cosmos*, Nagel suggests that current sciences lack the dimension of *teleological* explanation. He defends antireductionism, the view that there are some things that the physical sciences cannot fully account for, such as meaning, purpose, thought, value, intentionality, and consciousness. Therefore, “other forms of understanding may be needed, or perhaps there is more to reality than even the most fully developed physics can describe” (Nagel 2012, 14). These philosophers, among others of like mind, call for a more liberal understanding of “nature” and “the natural.” This alternative conception of naturalism has been called “Liberal Naturalism.”

There are various attempts by ontological naturalists to legitimize “Liberal Naturalism,” which is based on a conception of nature that is richer than the one provided by the scientific image. According to De Caro and Macarthur’s explanation, *Liberal Naturalism* “is not a precisely defined credo,” but covers a wide spectrum of attempts to “do justice to the range and diversity of the sciences, including the social and human sciences (freed of positivist misconceptions), and to the plurality of forms of understanding, including the possibility of nonscientific, nonsupernatural forms of understanding” (De Caro and Macarthur 2010, 9). One could be, for example, a liberal naturalist with regard to the existence of moral facts, normative facts, modal facts, phenomenal qualities, or intentionality. Those who adhere to Liberal Naturalism hold that the scientific image of the world cannot dictate our ontology. They reject reductionism, for the reason that the scientific language is inapt to give a complete description of everything in the world. The world we live in and created needs a richer conceptual scheme to capture its multiple hierarchy and dimensions. We can say that Liberal Naturalism is driven by an epistemological as well as a semantic concern: science is not the only legitimate source of true knowledge, and veritable description of the world is not the entitlement of scientific discourse. Liberal Naturalism does not make “extra” ontological commitments in addition to entities in the natural world, but it insists that “some items may exist that science cannot fully explain or explain away, even in principle” (De Caro and Voltolini 2010, 73). Using De Caro and Voltolini’s analysis of the common feature of all forms of liberal naturalism, we can define “Liberal Naturalism” this way:

\[\text{[Liberal Naturalism]} \quad \text{There may be entities that cannot be scientifically explained or explained away and yet are not supernatural, since they cannot contravene the laws of the world investigated by the sciences and are not grasped in an antiscientific way. (De Caro and Voltolini 2010, 79)}\]
Even though Liberal Naturalism undercuts the current orthodoxy of Scientific Naturalism, it is not “anti-science” or “anti-naturalism.” Its defenders argue that it is as much a form of naturalism as the latter is, in that “neither countenances the supernatural, whether in the form of entities (such as God, spirits, entelechies, or Cartesian minds), events (such as miracles or magic), or epistemic faculties (such as mystical insights or spiritual intuition)” (De Caro and Macarthur 2010, 3). From this defense we can see that Liberal Naturalism is not anything goes. There is a certain bottom line that naturalists draw with regard to the scope of nature, and this bottom line constitutes the core thesis of naturalism shared by both Scientific Naturalism and Liberal Naturalism:

[Naturalism] The world consists of nothing but the entities of the natural world. The operations or the presence of these entities cannot violate the underlying laws of nature; furthermore, there can be no supernatural interactions with entities in the natural world.

By this definition, any theory that posits entities that would violate the laws of nature is not naturalism. This paper argues that Chinese qi-cosmology falls into the category of naturalism because the operations of qi do not violate the laws of nature, even though they are not (in practice, though may be in principle as well) explicable in physical terms.

In Chinese qi-cosmology, the universe is seen as self-existent and self-sufficient. There is no supernatural entity that operates in any way on things in the natural world. It is a naturalistic worldview, but its methodology falls outside of the current scope of natural sciences. The prevailing assumption in this worldview is that the basic element of the universe is qi, which is a continuous form of energy that can be manifested in both material forms and spiritual forms. There is no mind-body duality to begin with, and hence there is no mind-body problem. Chinese qi-cosmology interprets the origin of the Universe as the various transformations of qi’s operation. Qi can be seen as continuous gapless matter, which has a distinct mode of operation from that of particles. Furthermore, there are two interacting forms of qi: yin and yang, but the measurement of which has not been scientifically established. Chinese qi-naturalism explicated the way the world functions with a conceptual scheme different from the scientific explanation offered by natural sciences. The apparent incompatibility, however, should not preclude Chinese worldview on any a priori ground. In what follows, I shall develop Chinese qi-naturalism as a form of Liberal Naturalism.
3. The Notion of Qi in Chinese Qi-Naturalism

In Chinese philosophical conception, \textit{qi} is the basic element of all material things, and even though \textit{qi} in its primary form has no mass or solidity, it has a material existence nonetheless. An esteemed intellectual historian Zhang Dainian offers a contemporary understanding of \textit{qi} as such: “The so-called \textit{qi} in Chinese philosophy is the \textit{being} before form and matter and what constitutes form and matter. It can be seen as the ‘primary stuff’ (\textit{Benshi Caipu}) for form and matter. In today’s terminology, \textit{qi} is the original material for all things” (Zhang [1958] 2005, 66).

The importance of the notion of \textit{qi} in Chinese philosophy is tantamount to that of \textit{atom} in Western tradition. However, \textit{qi} is a different kind of matter from atoms. According to the analysis of a contemporary scholar Yi Desheng, as constituent of things, \textit{qi} is different from atoms in that it has a “continuous, fluid and diffuse material existence,” in which there is no empty space or vacuum (Yi 2003, 59). This is indeed the view presented by \textit{qi}-philosophers. For example, Wang Fuzhi (1619–1692) says: “\textit{Yin} and \textit{yang} fill up the \textit{supreme vacuity}. Other than \textit{yin} and \textit{yang} there is nothing and there is no gap” (Wang 1967, 10). Wang Fuzhi’s contemporary and close friend Fang Yizhi (1621–1671) also says, “There is no gap in \textit{qi}; everything is transferrable and corresponding” (\textit{Notes on the Principles of Things} [\textit{Wuli Xiaozhi}], in Cheng 1986, 22). This shows that \textit{qi}-philosophers conceive of \textit{qi} as having material existence and as having a continuous nature. Another contemporary scholar Cheng Yishan explicates Chinese theory of primordial \textit{qi} (Yuanqi) as a form of \textit{naturalized materialism}, and he summarizes the main difference between Western naïve materialism and Chinese naturalized materialism as such:

Western naïve materialism begins with matter of fixed shapes to look for the \textit{One} in multifarious natural phenomena. It concludes that all things are made of indivisible particle-like units of matter. The theory of primordial \textit{qi} (Yuanqi), on the other hand, begins with the matter that is before forms and shapes, and defines the \textit{One} in \textit{Many} as the formless matter. Its conclusion is that material things result from transformations of some \textit{continuous matter}. (Cheng 1986, 1)

Since atoms are discontinuous, there is space within and without concrete things. On the other hand, there is no separation between space and matter in \textit{qi}-philosophy. \textit{Qi} is continuous and gapless and it fills up the whole space – the extent of space itself is exactly the extent of the propagation of \textit{qi}. Furthermore, since external \textit{qi} freely penetrates concrete things whereas internal \textit{qi} is continuously released from concrete things, particular things are interconnected and inter-dependent. A scientific image based on the
notion of qi would thus have a very different *individuation* and *taxonomy* from those built on the conception of atoms or particles.

Daoist cosmology is fundamentally built on the notion of qi. Both Laozi and Zhuangzi appeal to the transformation of qi in their speculation of the origin of the world. Later Daoists used the term “primordial qi (yuanqi)” to designate the state before the Universe is formed. The term “primordial qi” (yuanqi) was first seen in a pre-Qin Daoist text the Heguanzi: “Heaven and earth are composed of primordial qi, while the myriad things rely on heaven and earth [for their existence]” (The Heguanzi, chapter 11, 255). The word ‘yuán’ has many connotations, but in conjunction with qi as in yuanqi, it means primordial, elemental, originating, and *single*. In Yijing, yuan is included in the four cardinal virtues of the optimal states of yin and yang: Origination (yuán), Fecundity (heng), Succor (lì) and Perseverance (zhēn). Han dynasty philosopher Dong Zhongshu defines ‘yuán’ as the foundation of everything. In ancient texts, “primordial qi” typically designates the state of qi before the formation of heaven and earth. This state is often referred to as “chaos (hundun),” a nebulous state of infinite space and formless qi that preceded the existence of the ordered cosmos. This state is referred to as the One (Yì) or the Supreme One (Taiyì). The initial state of the Universe before the formation of heavenly bodies is a massive, homogenous qi. Since it is without the separation of heaven and earth, without any distinction of objects and things, it is a unified, singular One.

The theory of primordial qi provides a cosmogonic depiction of the initial state of the Universe; on the other hand, the theory of qi also serves as the foundation of Chinese ontology. Qi is taken to be the constituent of all natural phenomena and every concrete thing; qi is also associated with life’s conditions and the world’s states of affairs. Chinese herbology has an elaborate classification of the constitution of yin and yang in various foods; Chinese medicine is the study of the distribution of yin and yang in human body. The systematic characterization of qi and its many attributes in Chinese folk sciences remains to be verified by contemporary sciences; nevertheless, qi-philosophers had what we now call the naturalistic spirit in that their whole endeavor reflected an earnest attempt to make sense of natural phenomena in a systematic way.

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2 See Yi 2003, 58 and Cheng 1986, 6. The authorship of Heguanzi is unknown, and the dating (the Warring States period) is not without controversy.

3 In Xu Shen’s authoritative encyclopedia of Chinese vocabulary (Shuowen Jiezi), “yuán” is simply given as “the beginning (shì).”

Wang Chong (27–97), a philosopher in the late Han dynasty, was committed to providing a rational, naturalistic explanation to how events in the human world relate to natural phenomena. Wang Chong developed the theory of primordial qi into a naturalized worldview, according to which primordial qi is the constituent of all material things. He further argued against the common folk’s superstitious beliefs in the existence of ghosts and gods. In his famous treatise “Rectifying Thoughts of Ghosts (Dinggui),” he argues that the existence of a person is constituted by yin qi and yang qi, the former is responsible for one’s spirit while the latter is in charge of one’s body. When one is alive, both yin and yang work vigorously to sustain one’s life as well as one’s mental developments. However, once one passes away, both yang qi and yin qi disperse along with the disintegration of one’s body. Hence, without the body, no soul could linger on to maintain a form of immaterial existence (Wang Chong 1990, 1399). Wang Chong’s Disquisitions (Lunheng) set out to dispute the correlation theories held by Han dynasty philosophers such as Dong Zongshu as well as popular folk superstitions about supernatural phenomena. He argues that heaven and earth are part of nature, and they do not have any will to punish or reward human deeds. He further advocates that primordial qi is the state of qi before qi was divided into yin and yang. Since heaven and earth are developed out of yang and yin, primordial qi existed before the formation of heaven and earth (Wang Chong 1990, 661–62). Among qi-naturalists, Wang Chong provided the most manifest form of naturalism.

We can characterize Chinese qi-naturalism in the following ways:

1. It does not posit anything over and above the realm of nature. The formation of the Universe is simply the transformations of qi in different stages, and the Universe is nothing but the totality of qi in its various forms.

2. Under this view, qi is causally efficacious and the realm of qi is causally closed. All existent things are produced by the integration of qi; the end of existence is explicated in terms of the disintegration of qi. There is no causal influence from any entity outside the realm of qi.

3. Theoretically, everything can be reduced to qi and all events can be explicated in terms of qi’s operation.

As opposed to any form of Supernaturalism, Chinese qi-naturalism does not countenance any transcendent realm such as the Platonic Form, any supernatural entity overseeing the world such as God, any supreme universal spirit underlying the material world such as Brahman, or any immate-

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5 This translation comes from Encyclopedia Britannica.
rial substance such as the Cartesian Mind. However, it should be noted that Chinese qi-naturalism is perhaps more liberal than most versions of Liberal Naturalism in the West, in that the line between the material and the immaterial or between body and mind is not clearly drawn in qi-ontology. In the Chinese worldview, mind and body are not separated and all dimensions of existence are placed on a continuous spectrum of qi’s operation. Furthermore, the standard view held by qi-philosophers is that there are qualitative differences in qi. The purer forms of qi are directly responsible for mental capacities, and the mind is closely associated with the qi in the body. Since our mental activities are themselves functions of qi, they can influence our bodily conditions, which are also functions of qi. Qi-ontology thus defies the current taxonomy of natural sciences as well as the traditional mind-body dichotomy. We shall call what it establishes a “holistic qi-integration image of the world.”

In what follows, I will list some key developments of Chinese qi-naturalism, both in terms of cosmology and ontology.

4. Daoist Cosmogony: Primordial Qi as the Origin of the Universe

Daoist cosmogony appeals to the transformations of qi as the explanation for the origin of the Universe. According to Laozi, everything is generated by Dao, which is ontologically and temporally prior to the formation of heaven and earth. Since Laozi also says, “The myriad things are generated by Being; Being is generated by Nothing” (chapter 40), his Dao has standardly been identified as Nothing. However, Laozi regards Dao as something: “There is something undifferentiated and yet complete, which existed before heaven and earth” (chapter 25, translated by Wing-tsit Chan, Chan 1973, 152, with modifications). He also says, “The thing that is called Dao is eluding and vague. Vague and eluding, there is in it the form. Eluding and vague, in it are things. Deep and obscure, in it is the essence. The essence is very real; in it are evidences” (chapter 21, Chan 1973, 150). In both passages, Laozi uses the word “thing (wu)” to describe Dao, and in ancient Chinese philosophical works, the word “thing” depicts actually existing things. This shows that Laozi’s Dao should not be interpreted merely as an abstract, purely spiritual, metaphysical posit. Laozi endorses the theory of primordial qi and his Dao

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6 Though sounding the same as the word form for nothing, this word form is 物. There are no connections between the two words.

7 Zhang Dainian, in his preface to Cheng Yishan’s Theories of Primordial Qi in Ancient China, 1986, 1.
should be understood in this framework. Laozi mentions \textit{qi} in several chapters and in chapter 42, he links it to \textit{Dao}'s generation of the myriad things: “Everything carries \textit{yin} and embraces \textit{yang}. \textit{Qi}'s mutual agitation constitutes harmony.” This shows that he endorses the view that \textit{qi} produces all things, which is commonly seen in pre-Qin philosophical works\footnote{In Pre-Qin conception, \textit{qi} is an amorphous substance that constitutes concrete things. When \textit{qi} transforms into concrete things, it is no longer viewed as \textit{qi}. See Cheng Yishan 1986, 19 f. Later Neo-Confucians starting with Zhang Zai would view concrete things as \textit{qi} as well.}. We find that many of his descriptions of \textit{Dao} are likely descriptions of \textit{qi}\footnote{For example, Laozi depicts \textit{Dao} as “containing the form and essence of things” (chapter 21), as “soundless and formless” and “circulating incessantly” (chapter 25), as invisible, inaudible and intangible (chapter 14), as agitating and inexhaustible (chapter 4), as continuous and connected (chapter 14), as “overflowing left and right” (chapter 34), and as moving in reversal (chapter 40). If \textit{Dao} is understood as a spiritual metaphysical entity, then these descriptions are difficult to interpret. However, once we understand the initial state as primordial \textit{qi}, these descriptions become intelligible.}. Under this reading, Laozi’s cosmolgonic claim is that in the beginning, there was primordial \textit{qi}, and this formless primordial \textit{qi} is what Laozi refers to as “\textit{nothing (wu)}.”

While Laozi implicitly refers to primordial \textit{qi}, Zhuangzi explicitly embraces the theory of \textit{qi} as his cosmology. In the \textit{Zhuangzi}, the initial, pre-cosmos state of the Universe is depicted as a state of “\textit{chaos (hundun)}.”\footnote{The term “\textit{chaos}” in cosmogony refers to the earliest condition of the universe, before the ordered cosmos was formed.} This primeval state of chaos is the formless indiscernible state of \textit{qi}, which fills up the whole space and can be identified with space itself, as nothing could be external to it. Zhuangzi refers to this initial state as “the supreme One (\textit{taiyi})” or “the grand One (\textit{dayi})” (chapter 30). In Zhuangzi’s depiction, in the primeval state of chaos, there was no separation of heaven and earth and no concrete objects. In this sense, it is a “\textit{void}” – empty of things. In time, however, \textit{qi} congregates to form concrete things. As a result, the Universe is divided into particulars and thereby losing its “oneness.” The whole Universe is simply the result of the transformation of \textit{qi}, which begins with chaos: “the initial state of indiscernible, imperceptible chaos transforms into \textit{qi}, \textit{qi} transforms into shape and form, shape and form transform into life” (Zhuangzi 1961, chapter 18, 612). In Zhuangzi’s cosmogony, there is no need for a transcendent creator, since this process of transformation is the natural flow of \textit{qi} itself.

It was in the \textit{Huainanzi}, a Daoist text with miscellaneous topics written around the second century BCE\footnote{\textit{Huainanzi} is allegedly a joint production of intellectual hangers-on hosted by Liu An}, that the Daoist cosmogony based on the
notion of primordial *qi* received the fullest exposition for the first time. In the *Huainanzi*’s analysis, when *qi* first emerged, it was undifferentiated and homogeneous. It was only later that primordial *qi* split into *yin* and *yang*. This began the formation of heaven and earth. Finally, life began to emerge and things developed into different categories. *The Huainanzi* provides a cosmogonic account by explicating the “seven stages” thesis first introduced in the *Zhuangzi*: “There was a beginning. There was what had been before there was a beginning. There was what had been before what had been before there was a beginning. There was something. There was nothing. There was what had been before there was nothing. There was what had been before what had been before there was nothing” (*Zhuangzi* 1961, chapter 2, 79). According to *the Huainanzi*, these seven cosmogonic stages should be interpreted as follows:

1. There was a beginning: There was simply boundless disorder when buds and sprouts were bursting, but shapes and forms have not yet materialized. Life was about to emerge but things had not developed into different kinds and categories.

2. There was what had been before there was a beginning: Before the beginning, *qi* had already manifested the movements of ascending and descending. *Yin* and *yang* intermingled and interacted spontaneously. *Yin* and *yang* roamed freely to fill up the whole Universe. This was a time of abundant and vibrant potentiality, but no sign of things yet.

3. There was what had been before what had been before there was a beginning: Heaven and earth had not yet been separated; the whole realm was void and desolate. It can be seen as an indistinct state between something and nothingness. Once *qi* is activated, it pervades the whole deep, dark abyss.

4. There was something: The myriad things appeared in great abundance. Plants bourgeoned and flourished luxuriantly; insects swarmed and teemed with vitality. There are now tangible, measurable and enumerable concrete things.

5. There was nothing: When one looks, one cannot see it; when one listens, one cannot hear it. One tries to touch it in vain and one reaches for it

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(179-122 BCE), the prince of Huainan, who supervised and may have contributed to the whole production as well.

12 In *Zhuangzi*’s writing, this passage may have been satirical in nature. However, in *the Huainanzi*, this passage is taken as a serious cosmogonic speculation.

13 The following quote is loosely translated from *the Huainanzi*, chapter 2, in consultation with Wing-tsit Chan’s translation in *A Source Book in Chinese Philosophy* and John S. Major et al. 2010 *The Huainanzi*. 
without success. Immense and expansive, it cannot be measured with any instrument, and its brilliance cannot be grasped or conceived\(^\text{14}\).

6. There was what had been before there was nothing: It encloses heaven and earth and molds the myriad things, and it penetrates the undifferentiated abyss. It is so vast that nothing could be outside of it; at the same time, it is so minute that nothing could be inside it. It is absolutely without bounds or boundaries, and it generates the root of something and nothing.

7. There was what had been before what had been before there was nothing: At this stage heaven and earth have not yet formed, \textit{yin} and \textit{yang} have not yet been differentiated, four seasons have not yet been separated, and the myriad things have not yet been generated. All is tranquil, peaceful, quiet and translucent. It is absolutely formless.

This cosmogonic narrative is of course not a fully developed theory and many questions remain unresolved: how did homogeneous primordial \textit{qi} become divided into \textit{yin} and \textit{yang}? How did the motionless initial state of \textit{qi} develop movement of ascent and descent? How were heaven and earth formed? How were concrete things categorized and how did life emerge?

A noted astronomer in Han Dynasty, Zhang Heng (78–139 CE), incorporated the theory of primordial \textit{qi} into his scientific explanation of the origination of the Universe\(^\text{15}\). His representative work in astronomy, \textit{Spiritual Constitution of the Universe} (\textit{Lingxian}, Needham’s translation), is considered one of the highest achievements in the history of Chinese astronomy. Apparently influenced by the \textit{Huainanzi}, Zhang Heng depicts the emergence of \textit{something} from \textit{nothing} as the development of primordial \textit{qi}. For Zhang Heng, there was only a dark abyss at the beginning. Not only were there no form and no light, there was no primordial \textit{qi} either. He calls this initial state “the Grand Obscurity (\textit{Mingxing}).” The Grand Obscurity may have existed since time immemorial. Inside it there was vacuity (\textit{xu}) and outside of it, there was only nothingness (\textit{wu}). It was a deep, dark formless abyss and a complete lightless \textit{void}. In the second stage, something came out of nothingness and the primordial matter, which he calls “the Great Element (\textit{Taisu}),”

\(^{14}\) The original text uses “guangyao,” which literally means “brilliance.” However, \textit{the Huainanzi} uses \textit{guangyao} in the same paragraph to refer to an imaginary character in \textit{the Zhuangzi}, chapter 22. In that allegory, Guangyao was the interlocutor of another imaginary character “Nonbeing (\textit{wuyou}).” The commentary of \textit{the Zhuangzi} says that this character stands for \textit{intelligence}, as the function of intelligence is to illuminate and inspect; hence the name “Brilliance (\textit{guangyao}).”

\(^{15}\) According to Joseph Needham, Zhang Heng was “the inventor of the seismoscope in any civilization, and the first to apply motive power to the rotation of astronomical instruments” (1994, 22).
began to germinate. This primitive matter is primordial qi, which was initially homogenous and undifferentiated. At this stage, qi is merged into one and there is no differentiation of qi’s quality. Zhang Heng sees this stage as what Laozi meant in this remark: “There was something undifferentiated and yet complete, which existed before heaven and earth” (the Daodejing, chapter 25). This second stage is called “Grand Chaos (Manghong)” and it also lasted an indefinitely long period of time. Finally, the undifferentiated primordial qi was divided and qi developed various qualities such as magnitudes of force and degrees of purity. Heaven and earth are separated, and the myriad things began to take shape and to form different kinds. This stage is called the Great Incipience (Taiyuan).

Under this cosmogonic picture, at the beginning primordial qi was undifferentiated, and it later split into yin and yang with their different attributes. Yin with its heaviness formed earth; yang with its lightness formed heaven. The myriad things are constituted out of yin and yang with different degrees of their varying attributes. The initial cosmic state is a state of homogeneous primordial qi. There is no creation theory, and no Divine Intervention. The Universe naturally evolved out of nothingness, and this evolution results from an initial cosmic state Dao. This account became the core of the Daoist cosmogony.

However, two major problems remain unresolved in this cosmogony:

1. The problem of generation: How could primordial qi emerge out of total abyss, complete void?
2. The problem of division: How could the one undifferentiated primordial qi develop the two modes of yin and yang?

Both of these questions are difficult to answer, and Daoist philosophers did not make any attempt to explain how the generation and division came about when the initial state was simply dark empty abyss. We shall see how Neo-Confucians abandoned the Daoist’s postulations of absolute void and homogeneous primordial qi in their reconstructed qi-cosmology. Among early Neo-Confucians, Zhang Zai (1020–1077) was the first one to develop a systematic reconstruction of qi-naturalism.

5. Zhang Zai’s Interpretation of the Initial Cosmic State:
The Supreme Vacuity (Taixu)

Zhang Zai embraced qi-cosmology, but he did not adopt the term “primordial qi” and did not inherit the theory of primordial qi in the Daoist
tradition. The main difference between Daoist cosmology and Confucian cosmology is exactly on whether the world originated in nothingness or something. Zhang Zai’s *qi*-cosmology traces back to *Yijing*. In the *Yijing*, the origin of the Universe is taken to be the *Supreme Ultimate* (*Taiji*), and the interaction between *yin* and *yang* is used to explain the emergence of the myriad things. According to Cheng Yishan, *Yijing*’s cosmogony and the Daoist cosmogony were competing views since the pre-Qin era, and where the two views shared many common theses, there were also obvious disagreements between the two views. A major difference is that for the *Yijing*, *Dao* is not a pre-cosmos substance, as it is in Laozi’s *Daodejing*, but the order of the constant interchange between *yin* and *yang* (Cheng 1986, 27). In other words, in *Yijing* ‘*Dao*’ depicts the process rather than a cosmic state. Zhang Zai’s reconstruction of *qi*-cosmology apparently takes the *Yijing* tradition rather than the Daoist tradition.

On Zhang Zai’s view, there was never a time or any cosmic state in which there was absolute nothingness or an undifferentiated primordial *qi*. He rejects both the *Huainanzi*’s cosmogonic hypothesis of an initially undifferentiated primordial *qi* and Zhang Heng’s speculation that being initially came from a dark void. His theory of *qi* differs from previous Daoists’ cosmology in three main aspects:

1. *Qi* exists from the beginning of the Universe. Since *qi* is *something*, there was never absolute nothingness or vacuum.
2. *Qi* is in constant movement and transformation from time immemorial; hence, there was never a static state of motionlessness or quietude.
3. *Qi* is inherently orderly and the cosmic principle (*li*) is inherent in *qi*. There was never a state of pre-cosmos *chaos* (*hundun*).

Zhang Zai refers to the initial cosmic state as “the supreme vacuity (*taixu*).” The term “*taixue*” initially came from the *Zhuangzi*, and in that context, it has been taken to mean either the realm of impenetrability or the vast space in the sky. It became a common term in Daoist texts. Daoists commonly embrace the view that the emergence of *qi* was a step away from the initial

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16 This is Wing-tsit Chan’s translation. Even though it is indisputable that Zhang Zai takes the supreme vacuity to coincide with the existence of *qi*, contemporary scholars on Zhang Zai disagree on the whether they are identical states. The relation between the supreme vacuity and *qi* can be said to be the central issue among Zhang Zai scholars. On one view, the supreme vacuity is simply the formless state of *qi* (Zhang 1996; Chen 2005; Yang 2005, 2008; Wang 2009); on the other view, the supreme vacuity is the substance of *qi* and thus is different from *qi* itself (Mou 1999; Ding 2000). Wang Fuzhi also takes Zhang Zai to be advocating the separation of substance and function with the terminology of the supreme vacuity.
vacuity. Zhang Zai, however, takes the supreme vacuity and the presence of qi to be simultaneous from the start.17

In Zhang Zai’s usage, the word “vacuity (xu)” does not mean void or emptiness; rather, it is rendered a different meaning, namely, “not solid” or “unfilled.” Zhang Zai says, “The kind of existence of ultimate vacuity is such that it is replete (shi) but not solid (gu) … Replete but not solid, hence it disperses from the One” (Zhang 2006, 64). Zhang Zai claims that the supreme vacuity contains qi and since qi is real, the supreme vacuity is not an absolute void. In contemporary scholar Chen Lai’s explanation, “the supreme vacuity” originally refers to space itself, but in Zhang Zai’s conception of space, there is no absolute void because space is filled with an imperceptibly thin qi (Chen 2005, 47). With the new interpretation of the word ‘vacuity,’ Zhang Zai uses “the supreme vacuity” to refer to the state of qi before concrete forms arise. He claims that the supreme vacuity is the original state of qi: “The supreme vacuity has no form. It is the original state (benti) of qi. Its condensation and dispersion are simply external forms of change” (Zhang 2006, 7). The supreme vacuity is also the ultimate state of qi, to which all temporarily solidified concrete things would eventually disintegrate and return. Qi permeates the whole Universe; space is simply the expansion of qi. Before concrete things are formed, the Universe is called the supreme vacuity. With qi’s movement, qi condenses into concrete things and in time, it will again disperse back into vacuity. In other words, concrete things are located in vacuity. The state of vacuity becomes supreme (as in the Supreme Vacuity) when there exist no concrete things.

Earlier we have seen that in Daoist cosmogony, there is an unsolved problem of how primordial qi could have emerged out of total void. Zhang Zai rejects the hypothesis that absolute void or nothingness could have been the initial state. He says: “When one knows that the supreme vacuity is simply qi itself, one sees that there cannot be nothingness” (8). Zhang Zai made explicit refutation of the nothingness thesis in Daoist cosmology and the emptiness thesis in Buddhist worldview:

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17 Zhang Zai’s view may have been inspired by another source. According to Cheng Yi-shan (1986), in the second half of the Han dynasty, there were two competing views: one is the standard Daoist view that “vacuity generates qi”; the other is the view that qi is inherent in the vacuity. The ancient encyclopedia of Chinese medicine, Huangdi Nei-jing Suwen, for example, gives the description that qi is widely spread throughout the supreme vacuity. A lost but newly excavated Daoist text, the Origin of Dao (Daoyuan) also expresses the view that as a primordial state, the supreme vacuity contained some subtle, refined vital qi (jingqi). See Cheng 1986, 30-33.

18 The term is often translated as “substance.”
If one argues that vacuity can generate $qi$, then since vacuity is infinite while $qi$ is finite, one is committed to the division and segregation between substance and function. Such a view falls into the camp of Laozi's doctrine on nature that "being emerges out of nothingness (wu-zhong-sheng-you)." One thus fails to recognize that being intermingled with non-being is the [Universe's] constant state. If one argues that myriad phenomena are merely concrete things perceived in the supreme vacuity, then one is committed to the disconnect between concrete things and vacuity … and falls into the Buddhist view that the phenomenal world is simply the result of our visual impairment” (8).

According to Zhang Zai, what the Yijing teaches is different from the above two views because there is no dichotomy between being and nothingness in this worldview. He argues that being is always mixed with non-being, and the difference between the two is simply the congregation or dispersion of $qi$:

“When it gathers, how can we not call it existing (being)? However, when it disperses, how could we jump to the conclusion that there is nothing” (182)? In this quote, he rejects applying the distinction between “being” and “nothingness” to the presence and absence of concrete things in $qi$. In other words, $qi$ is something even when it does not constitute things. In contemporary jargon, Zhang Zai would claim that there was never a pure vacuum, because he thinks that in the initial state, “the supreme vacuity was already seething with $qi$, which incessantly moves upward and downward” (8). It is obvious from the depiction here that he takes $qi$ to have real physical existence (since it has movements). $Qi$ is something and has always been in existence since time immemorial; hence, there was never a state of nothing. This initial state was vacuous simply because there were no concrete forms. In Zhang Zai's conception, vacuity is no more than formlessness. $Qi$ carries energy with it; hence, even before concrete things are amalgamated, the state of $qi$ (the supreme vacuity) is still seething with energy and not a complete vacuum.

The Daoists take the initial formless state to be a vacuum, and they regard this vacuum to be the same as nothingness. Zhang Zai, in the Confucian tradition, takes the initial formless state to be the expansive and mobile $qi$, with two opposing forces constituting its movement. Since $qi$ is a physical entity, the supreme vacuity is not a vacuum. It is formless simply in the sense that there is no concrete matter with any definite shape and form. The Daoists cannot explain how primordial $qi$ emerged out of a desolate void, while Zhang Zai's theory does not have that problem. He could explain the emergence of something out of nothing (no-thing; i.e. no concrete things) as the natural development of $qi$. $Qi$ changes from a thin, vacuous state into a state filled with concrete things; concrete things will all eventually dissolve into nothingness and $qi$ is then back to the state of the supreme vacuity. In other words, Zhang Zai's cosmogony can be seen as a cyclical development of $qi$. Under this view, the world has always existed – be it empty of or filled
with concrete things. There was never, and never will there be, absolute nothingness.

Zhang Zai’s second contribution to the development of qi-naturalism is his attempt to explain the generation of myriad things in terms of movements of yin and yang. The crux of his explanation is the notion of polarity. We have seen that Daoist philosophers take the original state of qi to be a homogeneous, undifferentiated primordial qi. Furthermore, the notion One takes a preeminent place in their philosophy. One problem for the Daoists is the problem of division: how did the one qi split into two modes of yin and yang; how did the One multiply into the many? Zhang Zai views the nature of qi differently: “Qi always has yin and yang” (219). He rejects the view that qi was initially undifferentiated, and then split into two forces. In Zhang Zai’s understanding, yin and yang are “one thing but two aspects (yiwu liangti)”; in other words, qi is the unification of two opposites. This unification is ultimately in a harmonious state, which Zhang Zai calls “the supreme harmony (taihe).” Harmony is compatible with the polarity of two opposites, since harmony consists in the mutual collaboration of yin and yang.

The notion of the supreme harmony, along with the supreme vacuity, is one of Zhang Zai’s highest designations of the ultimate cosmic state. While “the supreme vacuity” depicts the stuff of the Universe – formless qi, “the supreme harmony” depicts the constant state of the Universe – harmonious interaction between yin and yang. Under this view, the Universe is imbued with a “pre-established harmony” (not in Leibniz’s sense), which governs the continuing development of the Universe. Zhang Zai says that the supreme harmony is also the so-called ‘Dao’ (7), and Dao, according to the Yijing, is simply “once yin and once yang” (187). Hence, “the supreme vacuity,” “the supreme harmony,” and “Dao” are three designations of the existence of qi: the initial qi exists in a formless, harmonious state, which contains the interaction and interchange between two opposite forces yin and yang. All production and change are the result of yin and yang’s colliding against each other. Because such collision is constantly in harmony, neither yin nor yang will ever be depleted, and consequently, the world will never go extinct.

Zhang Zai further defines “the supreme ultimate (Taiji)” as the one thing with polarity (235); in other words, the supreme ultimate is the totality of qi and the unification of yin and yang. He claims that the supreme ultimate is both One and Two – this understanding is different from Laozi’s claim: “Dao generates the One; the One generates two, two generates three and three generates the myriad things” (chapter 42). In Laozi’s assessment, opposites

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19 Whether yin and yang are two separate qi or two modes of one qi is not a settled issue.
Zhang Zai defines the distinction between *yin* and *yang* in terms of two movements: advancement (*jian*) and yielding (*shun*). “*Yang* is that which advances and *yin* is that which constantly yields” (231). Because of their different movements, *yin* and *yang* must continually interact and interchange. Zhang Zai further explains the generation of natural phenomena and myriad things by appeal to the movements of *yin* and *yang*:

Qi permeates the extensive supreme vacuity, it moves upward and downward incessantly…. *Yang*’s clarity makes it rise up; *yin*’s turbidity brings it earthward…. Their interaction and their aggregation produced wind and rain, frost and snow. Whether it is the fluid configurations of myriad things or the solid mass of mountains and valleys, everything down to the dregs of wine or the ashes of fire is all governed by the movement of qi. (224)

Opposition produces change. Change generates diversity. So here we have a crude picture of qi’s being the constitutive cause of the myriad things.

A third contribution Zhang Zai made to *qi*-naturalism is his introduction of the idea of cosmic necessity or cosmic principle. He conceives of *qi* as an orderly *qi* with an inherent cosmic principle (*li*): “With the *qi* between heaven and earth, there may be hundreds and thousands of various developments, and yet there is a principle that it follows and there is never any aberration” (7). To him, the emergence of the Universe and myriad phenomena is necessitated by a cosmic principle (*li*): “The supreme vacuity cannot be without *qi*; *qi* cannot but coalesce to form myriad things; myriad things cannot but disintegrate back to the supreme vacuity. All these developments follow the order of necessity and it is simply what could not have been otherwise” (7, my emphasis). In this statement, we see that Zhang Zai is committed to some

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20 Laozi says, “Of old those that obtained the One: Heaven obtained the One and became clear. Earth obtained the One and became tranquil. The spiritual beings obtained the One and became divine. The valley obtained the One and became full. The myriad things obtained the One and lived and grew. Kings and barons obtained the One and became rulers of the empire. What made them so is the One” (chapter 39, Chan’s translation, Chan 1973, 159).
form of cosmogonic determinism. The “cannot be” should be analyzed as a physical necessity: it is the law of qi that it constantly consolidates and then disperses. The physical necessity constitutes the law of nature.

In contemporary philosophical jargon, we can say that Zhang Zai’s view belongs to the camp of the Necessitarian theory of laws of nature\(^\text{21}\). The Necessitarian theory of laws of nature can be further divided into two camps: those who believe that the world of nature necessarily obey some law, and those who believe that the physical necessity “inheres in the very woof and warp (the stuff and structure) of the Universe” (ibid., original parentheses). To better understand the distinction, we shall call the former view “the externalist” view of nomological necessity and the latter “the internalist” view of nomological necessity. This division is well reflected in the debate among Neo-Confucians. Zhang Zai’s principle (li) exemplifies the internalist’s conception of the nomological necessity of the world, while Zhu Xi’s (1130–1200) principle exemplifies the externalist’s conception of laws of nature. For Zhang Zai, the nomological necessity is derived from the stuff of the Universe, i.e. qi, as well as from the structure of the Universe, i.e. Taiji.

We can summarize what Zhang Zai considers to be the nomological necessity inherent in qi as follows:

1. Qi necessarily follows the order of “once yin once yang”; in other words, the rotation and exchange of yin and yang is inevitable. This pattern of the perpetual exchange between yin and yang is what the Yijing defines as “Dao.”
2. Qi necessarily moves unceasingly. The movements of qi include ascending, descending, expanding, condensing. The state of qi is never stagnant; hence, the Universe is forever developing.
3. Qi necessarily coalesces and disperses. When qi coalesces, it forms concrete things. Concrete things do not last forever and eventually they disintegrate into formless qi again. The emergence of particular things is a cosmic necessity, but so is their eventual dissolution.
4. Qi necessarily contains the polarity of yin and yang. Without yin, there could not be yang; without yang, there could not be yin. The co-existence

\(^{21}\) According to Norman Swartz, “within metaphysics, there are two competing theories of Laws of Nature. On one account, the Regularity Theory, Laws of Nature are statements of the uniformities or regularities in the world; they are mere descriptions of the way the world is. On the other account, the Necessitarian Theory, Laws of Nature are the ‘principles’ which govern the natural phenomena of the world. That is, the natural world ‘obeys’ the Laws of Nature” (Swartz 2009, 20). Zhang Zai’s view belongs to the Necessitarian camp since he regards “principle (li)” as that which governs the development of qi as well as regulates qi’s movement, and qi’s movement is responsible for the development of all states of affairs and all particular things.
and compresence of yin and yang in all particular things is a nomological necessity of particular existence.

In Zhang Zai’s view, none of the above formulations of the nature of qi, and consequently the constitution of concrete things, is an accidental truth. The world is governed by a pervasive order; it did not originate in chaos (hundun), nor does it proceed in random. To answer the question: Why is the world orderly rather than chaotic, Zhang Zai can appeal to the physical nature of qi. The order in the Universe is not a “cosmic coincidence,” since everything is regulated by the principle that is inherent in the stuff that makes up the world. Everything is the way it is because there are laws of nature epitomized as the principle (li) of qi. If qi simply is this way, then there is no need to ask why it is so. The “why” question becomes superfluous.

However, Zhang Zai’s qi-naturalism cannot be categorized into the materialist camp, because qi is not purely matter. The tradition of Chinese philosophy does not subscribe to the dichotomy between matter and spirit or the material and the immaterial. Qi is both the constituent of material things and the essence of immaterial things. Under Zhang Zai’s construal, the realm of qi covers the mechanistic, the organic, and the spiritual dimensions of existence. Zhang Zai explains the production of everything in terms of qi: animate things are caused by qi’s congregating and dispersing; plants are caused by qi’s rising and falling (Zhang 2006, 19). Zhang Zai thinks that spirits and ghosts are simply different functions of qi: when qi integrates into concrete things, it is called the heaven’s “magnificent transformation (shenhua)”; when the qi that constitutes a living thing has dispersed and merged with the vacuous qi, it is called the return of the realm of ghosts (you). Life and death of a living thing is not segregated into distinct realms; rather, they only represent different formations of the qi’s constitution. This is why Zhang Zai says, “The words ‘ghost’ and ‘spirit’ only signify the passage of coming and going or the process of expansion and condensation” (Ibid. 16). An individual’s existence may be transient, but the stuff that makes up the individual – qi – is nonetheless indestructible. Therefore, the world can go from exuberance into emptiness, qi itself is ever-present and will never be annihilated.

At the end, we can summarize Zhang Zai’s notion of qi as follows:

1. Qi is continuous and gapless; it fills up the whole space (vacuity).
2. Qi is self-sufficient.
3. Qi is permanent and inexhaustible.

4. *Qi* is self-moving and self-propelling\(^{23}\).
5. *Qi* has an internal order; it is thus self-regulating.

At this stage, the development of Chinese *qi*-naturalism is nearly complete. There were many later Neo-Confucians who further developed *qi*-naturalism in various degrees of complexity, such as Luo Qinshun (1465–1547), Wang Tingxiang (1474–1544) and Wang Fuzhi (1619–1692). Their theories basically followed Zhang Zai’s direction. A revolutionary turn of *qi*-naturalism took place with Xiong Shili (1885–1968), a contemporary New-Confucian philosopher.

### 6. Xiong Shili’s Revolutionary *Qi*-Cosmology

According to Xiong Shili’s self-narrative, he had developed an intense interest in cosmology since youth. Xiong characterizes historical cosmological theories into two camps: *particle collectivism* and *holism*. Particle collectivism analyzes the nature of things as collections of minute units (*xifên*). Indian Vaisesika and contemporary physics (particle theory) are grouped into this camp. Holism, on the other hand, takes cosmic phenomena not as a collection of tiny particles, but as manifestations of a grand force, which is in itself complete and inexhaustive, full of life and energy (Xiong [1958] 1996, 127 f). The *Yijing* and Xiong Shili’s own cosmology fall into this camp. The difference between the two camps is that particle collectivism operates under the principle of constitution: the whole is constituted of its parts, while holism operates under the principle of partition: each thing is only a part of the whole. The former takes the ultimate part (tiny particle) as primary, while the latter takes the ultimate whole (the universe) as primary. Xiong Shili argues that since tiny particles are dynamic and springy, they do not have determinate shapes and forms. Therefore, they cannot be primary but must be derived from the partition of the whole (Xiong [1958] 1996, 129).

Xiong Shili argues that holistic philosophers must be committed to the existence of *substance*. Under holism, myriad cosmic phenomena could not have been without an origin, since it is impossible that “being emerges out of nothingness (*wu-zhong-sheng-you*).” Therefore, there has to be a real substance of myriad cosmic phenomena (Xiong [1958] 1996, 128). However, his notion of *substance* is not a transcendent entity beyond the physical world,

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\(^{23}\) According to a contemporary Zhang Zai scholar, Yang Lihua, *qi* in Zhang Zai’s philosophy cannot be viewed as some passive “material cause” because *qi* itself contains an essential mobility (Yang 2005).
since he advocates the thesis that \textit{substance and function are one}. Xiong’s famous metaphor of ocean and ripple\textsuperscript{24} illustrates the relationship between substance and function: the ocean is like substance while the multifarious ripples are like function. Ripples can vary one from another in size or form; however, they are nothing but the ocean itself. Ocean, on the other hand, is nothing but the collection of manifold ripples, and does not exist separately from the ripples. This metaphor shows that for Xiong, the substance is used in the “collective” sense – it is simply the \textit{totality} or the \textit{whole} of multiple phenomena. From this cosmological conclusion, Xiong Shili extends to the theses of \textit{the unification of heaven and humans} and \textit{the identification of dao and the physical world}\textsuperscript{25}. Xiong says that substance is simply “the whole (\textit{quanti}),” and thus it does not exist independently of its parts. The parts, whether they are mental phenomena or physical phenomena, also cannot exist outside of the \textit{one} whole. This view of substance affirms the reality of the phenomenal world, since there is no separate realm of existence revealing the \textit{ultimate reality} behind appearance, or standing for the \textit{true nature} of myriad things. If we want to understand substance, we start with the phenomenal world. This shows that even though Xiong talks about substance, he does not posit anything over and above the natural world.

Xiong Shili appeals to \textit{qi}’s movements, in particular, \textit{xi} (closing) and \textit{pi} (opening), to explicate the generation of material things:

It is never a single pure thing for substance to transform into grand function – there has to be two aspects: \textit{xi} and \textit{pi}, because it is the opposite that makes up change. \textit{Xi} is movement that coagulates; \textit{pi} is movement that ascends. Coagulation constitute material thing; ascension constitute spiritual things. In other words, when substance transforms into function, there are already two opposing micro-propensities (\textit{ji}) inside the function itself. This is how there emerge an obvious division of \textit{xi}-movement and \textit{pi}-movement.” (Xiong [1958] 1996, 129)

However, Xiong’s notion of \textit{qi} is not the same as that of previous \textit{qi}-philosophers. \textit{Qi}, to him, is an “adjective of mass and energy” (132) – it depicts the fluid transition between mass and energy. Xiong Shili argues that mass and energy must be interchangeable. He gave the example that food, once digested, turns into energy, and energy again renews the body’s composit-

\textsuperscript{24} A “ripple (\textit{ou})” is the Buddhist’s depiction of the fluctuating transient nature of existence. The ocean is originally calm and clear. When wind stirs it up, ripples arise for a short time. They will soon disappear and the ocean will return to its original quietude. Xiong Shili is here using this metaphor for a new insight: that however ephemeral ripples are, they are nonetheless part of the ocean itself and are thus real.

\textsuperscript{25} See Xiong [1958] 1996, 118. Xiong Shili defines “concrete things” (\textit{qi}) simply as the physical world.
tion (132). He thinks *Yijing* has already proclaimed the interchangeability of mass and energy, but philosophers from Han Dynasty on misinterpreted the notion of *qi* and introduced primordial *qi* (*yuanqi*) as the initial foundation of the universe. According to Xiong, primordial *qi* should simply be an alias for mass-energy. In the initial cosmic state, before primordial *qi* has divided and astrological entities formed, it was simply the conglomerate of mass and energy in fluid form, filling up the whole space. Later on, when mass-energy developed into myriad concrete things, the universe is no longer a vast empty brume (132 f). Mass and energy are not two separate things: they simply are two propensities of *qi*. With this association of *qi* with mass-energy, Xiong Shili introduces a contemporary reconstruction of ancient *qi*-naturalism and renders it more compatible with contemporary physics.

Since *qi* (mass-energy) permeates the whole universe and is the constituent of all things, everything is interconnected in this whole universe. As Xiong puts it, “In terms of organic creatures, a tiny animal is really unified as one with Nature itself. It does not exist on its own. A piece of green leaf absorbs sunlight, air, soil, etc. It also does not exist independently of Nature itself” (Xiong [1958] 1996, 130). Xiong’s holism is a form of organic holism. This universe encompasses mind and matter, the spiritual and the material, into one unified whole.

In contrast, contemporary materialists or physicalists recognize only the reality of matter, but not of mind. In the reductionist picture, the mental is either epiphenomenal (epi-phenomenalism) or unreal (mental irrealism). Xiong Shili’s holistic monism asserts mental realism and rejects mental epi-phenomenalism. He argues that mental phenomena are not by-products of physical phenomena and they do not emerge as a result of physical evolution. Xiong claims that mind and matter coexisted from the beginning of the Universe. This was an outrageous view even to his contemporary. An inter-

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26 Xiong Shili says that even before 1911 (during Qing dynasty), he had already read some translations of physics and had heard about mass and energy. Since then he began to puzzle over whether mass and energy were separate things interacting with each other, or simply the same thing with two different propensities. He later studied Chinese philosophy, from classics to Song dynasty Neo-Confucianism, but none of them touched on the issue. He then went into Buddhism, and found it even more irrelevant. Eventually, he quit Buddhist philosophy and went back to the *Yijing*. It was from studying the deep and broad meaning of the *Yijing* that he came to the conclusion that mass and energy are one and not two (Xiong [1958] 1996, 135, his supplementary note). This autobiographic detail shows that Xiong did not simply derive his mass-energy identity view from embracing Einstein’s mass-energy equivalence thesis (first proposed in 1905).
locutor raised the following objection based on Darwin’s theory of evolution: “Mental phenomena only gradually developed long after the evolution of organic creatures, and organic creatures evolved pretty late in the whole process. At the beginning of the universe, there was only inorganic matter. … [If you claim that] spirit and matter co-exist from the beginning of the universe, then it is pure abstract speculation and not based on fact.” To respond to this objection, Xiong presented an interesting hypothesis: there is no cosmic accident, everything that happens is determined to happen in accordance with a cosmic law. Xiong says,

Before the function of mind appeared, it was just in an obscure and undeveloped state. It cannot be said to be nonexistent…. All changes and transformations as well as all objects and events in the universe must take place in line with a determined principle. Being cannot come from nonbeing (Xiong [1958] 1996, 147).

If being cannot come from nonbeing, then the emergence of mind in the history of evolution must be based on some hidden potency of mind. Xiong Shili uses seed as an example: the seed sprouts and grows into branches and flowers because it already contains the potential within. As the universe evolves, organic creatures can emerge out of inorganic entities, mind can emerge out of matter. This is because the universe itself – its totality both in space and in time (past as well as future) – is a complex (fuza) unity. A further problem of both idealism and materialism, according to Xiong, is that both views treat the universe as a simple (dancun) entity and both try to derive either mind or matter from the simple entity they assume to be substance. Substance, according to Xiong, is full of complexity and this is why various phenomena could develop in time (121–28). He argues that the hypothesis of cosmic determinacy is based on an observed cosmic fact: the world came to exist at some point in time and life emerged out of inorganic stuff, mind developed after pure matter. The whole universe is like an organism, which grows and develops according to its own rhythm, following its own principle. This organic universe as a whole is what Xiong Shili posits as the substance. The ultimate reality is simply the totality of the phenomenal world. This is why he claims that substance and function are one and not distinct.

Xiong Shili says, “There is certainly not an accidental event in the universe” (Xiong [1958] 1996, 147). In Xiong [1961] 2008, he also elaborates on this statement and claimed that if we trace everything to its origin, we will see that the substance itself (the totality of the universe) contains complexity, and “there is not a single thing in the world that happens haphazardly” (122).
7. Conclusion: Qi-Naturalism and Beyond

The notion of qi underlies Chinese philosophy and many other aspects of Chinese culture such as Chinese medicine and martial arts. However, it has always been seen as a mysterious, all-encompassing umbrella concept that defies analysis and frustrates understanding. In this paper, I have reconstructed the various naturalistic cosmological theories of qi in the Chinese tradition. By emphasizing its naturalistic dimension, I aim to show that even though this whole tradition of qi-cosmology falls outside the scope of contemporary natural sciences, it is nonetheless a rational, coherent and respectable view of nature.

My approach could be seen to be expressing what McDowell refers to as “a nostalgia for a pre-scientific world-view, a call for a re-enchantment of nature” (McDowell 1994, 74). However, this approach is more than just a reflection of nostalgia, since it is motivated by my belief in ontological pluralism: The world of existents can be depicted by different conceptual schemes, and different ontological commitments can be made within each conceptual scheme. The scientific image of the world established by current natural sciences represents one conceptual scheme, while the holistic qi-integration image represents another conceptual scheme. Although these conceptual schemes have to be ultimately compatible since they depict the same reality, they do not have to be reducible or mutually translatable because some of their basic concepts or first principles carve the world at different joints. The Liberal Naturalism defended here is not a form of Libertine Naturalism, however, since there are going to be conceptual schemes that are in themselves incoherent or that diverge too far from the operations of the world to be permissible in this ontological pluralism.

This treatment of qi-naturalism as a form of Liberal Naturalism does not preclude qi-naturalism to be compatible with future or mature sciences, however. Some contemporary scholars (Yi 2003, He 1997) have compared qi to quantum field, and they suggest that the transformation of qi from the continuous vacuous state to discrete concrete things can be reinterpreted as the transition from quantum field to particles in contemporary physics. To support his view, He Zuoxiu further argues that the theory of primordial qi is the origination of the contemporary quantum field theory. He traces the quantum field theory to Einstein, Einstein to Leibniz, and Leibniz to the theory of primordial qi (He 1997). Leibniz compared qi to ether\(^\text{28}\), which, in

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\(^\text{28}\) Qi is sometimes translated as “ether,” as in, for example, Tang 1956 and Graham [1958] 1992.
Leibniz’s time, was believed to be a continuous substance that fills up space. Leibniz separates matter into two kinds: those that are solid (or impenetrable), rigid and indivisible (such as atoms), and those that are penetrable, fluid and infinitely divisible (such as ether)\textsuperscript{29}. He suggests that fluidity is the more basic condition and it belongs to “prime matter” only\textsuperscript{30}. In Leibniz’s description, primary matter is a “continuous mass filling the world,” “from which all things are produced through motion, and into which they are resolved through rest”. In this primary matter there is no diversity, mere homogeneity” (Leibniz 1896, 637). If there are two kinds of matter, then perhaps \textit{qi} is this other kind of matter characterized by fluidity and continuity.

Another contemporary scholar Wing-cheuk Chan also compares Zhang Zai’s theory of \textit{qi} to Leibniz. He argues that the notion of primordial \textit{qi} \textit{(yuanqi)} should be compared to Leibniz’s notion of \textit{primitive} force; furthermore, \textit{yang} corresponds to Leibniz’s \textit{active primitive force} while \textit{yin} corresponds to his \textit{passive primitive force} (Chan 2011, 96). The primitive force consists of both the active and the passive force, just as \textit{qi} is the unity of both \textit{yang} and \textit{yin}. There cannot be the one without the two, as Zhang Zai indicates in his depiction of the supreme ultimate (\textit{Taiji}) as “one thing with two aspects.” Chan also points out the similarity of Zhang Zai’s notion of \textit{supreme harmony} and Leibniz’s concept of \textit{harmonica universalis} (220). Both concepts depict the Universe as possessing a constant, natural state of \textit{harmony}, which is “nothing but the identity in difference” or the “synthesis without mutual destruction” (Ibid.). However, we should also note the differences between the two philosophies. For Leibniz, the pre-established harmony in the world is guaranteed by God; for Zhang Zai, on the other hand, the pre-established harmony is simply a state of \textit{qi}, a state of nature itself.

Nowadays it is believed that normal matter (concrete things) makes up less than five percent of the Universe. The rest of the Universe is made up of “dark matter” and “dark energy” – and dark energy fills up to seventy percent of the Universe\textsuperscript{31}. Both notions of dark matter and dark energy are as enigmatic as \textit{qi} is. Currently, cosmologists still do not have any confirmed theory about the formation of the Universe or its constitution. The fact that

\textsuperscript{29} Leibniz 1896. Chapter 4 (Of Solidity), Section 3.

\textsuperscript{30} Leibniz says, “I think that perfect fluidity is appropriate only to \textit{prime matter} (i.e. matter in the abstract), considered as an original quality like motionlessness. But it does not fit \textit{secondary matter} – i.e. matter as it actually occurs, invested with its derivative qualities – for I believe that no mass is ultimately rarefied and that there is some degree of bonding everywhere” (Leibniz 1896, 223).

\textsuperscript{31} The information about dark energy comes from NASA’s astrophysics page (\url{http://science.nasa.gov/astrophysics/focus-areas/what-is-dark-energy}, accessed December 14, 2013).
normal matter constitutes only less than five percent of the Universe shows us that materialistic postulates – be it atoms, particles, or strings – cannot fully capture the Universe's existence. Qi may be one of the undefined cosmic elements. Granted, the nature of qi still needs a more systematic investigation and whether we could define quantitative as well as qualitative measurement of qi remains to be seen. With further developments, the theory of qi may eventually find a place in future sciences.

References


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Is Naturalism Too Big to Fail?

An Audit of Strict and Broad Naturalism

The phrase “too big to fail” is used in the USA as a reason to rescue businesses from bankruptcy, because their failure would be catastrophic. This essay begins charting a case that naturalism (in all its forms, broad and strict) is not such that its abandonment would bring about a philosophical disaster. Securing such a conclusion is not possible in a single essay, but what is argued for is that the confident portrayal of naturalism as the presumptive starting place for inquiry needs to be superseded by the primacy of philosophy both in terms of inquiry and the aims of the journal. Because theology includes philosophy, but is not limited to it, the essay argues for the primacy of theology as well, rather than a naturalist worldview. Another essay in the future will fill out a non-naturalist alternative, arguing that if naturalism is abandoned, there is a healthy, vibrant alternative.

1. Introduction

The expression “too big to fail” is a term introduced in the mid-1980s in the United States to refer to banks, car companies, and other institutions that are so large in the domestic, and often global, economies, that their financial collapse would have such disastrous effects, possibly triggering a depression lasting for generations, that they are worthy of government support in order to keep them in business. The question I am introducing in this essay is whether naturalism may be in a philosophical condition analogous to J. P. Morgan and Case’s in the economic system; if naturalism fails in the sense that it is abandoned by philosophers because of deep and irresistible objections, would this be disastrous philosophically? Would we be giving up on our best and only hope of forming a comprehensive philosophy of reality in all its dimensions, including the natural and social sciences, our values, epistemology, and so on?

In a single essay in this first issue of Philosophy, Theology and the Sciences I cannot hope to fully establish what I believe to be the right answer to the title question: No. Part of the problem of successfully establishing a nega-
tive response is that one would need not only to argue for the unaccept-
ability of naturalism, but one would also need to secure the viability of at
least one non-naturalist alternative. There are indeed many non-naturalist
worldviews with impressive defenders today; classical theism is undergo-
ing a philosophical renaissance as is evident in The Routledge Companion to
Theism, there is vibrant work on alternative accounts of God and ‘Ultimate
Reality’ as is evident in Springer’s massive volume Models of God and Alter-
native Ultimate Realities, and there are signs of the emergence of secular
teleological accounts of mind and cosmos, as hinted at in recent work by
Thomas Nagel. The reason why identifying and justifying a non-naturalist
alternative worldview is essential in order to conclude that naturalism is not
too big to fail, is that if the only reasonable account we can offer in metaphys-
ics, epistemology, value theory, and so on, is some form of naturalism, then I
believe that it is best to retain naturalism even if we must remain agnostic as
to how naturalism may be fully defended. For example, if the practice of the
natural sciences can only be warranted on the grounds of naturalism (both
in metaphysics and methodology or, in other words, natural science is war-
ranted if and only if naturalism is true), then jettisoning naturalism would
appear (in my view) to be catastrophic. Retaining naturalism would be dif-
ferent from keeping a bank in business, as there is little in the world of phi-
losophy that would serve as an analogue to a financial ‘bailout.’ But since the
work of Thomas Kuhn has accustomed us to talk of different paradigms, we
can make sense of retaining a worldview (continuing projects that presup-
pose a worldview or paradigm) in the absence of an alternative even when
it meets with serious anomalies. Of course, unlike an economic analogy in
which currency receives its warrant in terms of government and industry
goods, we may conclude that the natural sciences do not require some kind
of additional philosophical warrant (in terms of naturalism or some non-
naturalist philosophy) other than one that may be readily provided in terms
of pragmatics. But rather than pursue such a route which seems, in my
view, to abandon the historically important role of philosophy in providing
an overall framework for metaphysics, epistemology, and value theory, the
project in this essay will pursue a different end.

The goal of this essay is to approach the question of whether naturalism is
too big to fail by arguing that philosophy, as a practice, is too big to fail. Any
confidence in a naturalistic starting point for our reflection on the world,
the limits of knowledge, and our investigation into the nature of religious
beliefs and practices, needs to be subordinate to the confidence we should
have, first and foremost, in the practice of philosophy. So, my hope is to dis-
suade those who would confidently reply that, of course, naturalism is too
big to fail, and to endorse, instead, the idea that, whether or not the defeat of naturalism would be disastrous, the displacement of the primacy of philosophy is unacceptable. There are three sections: in the first, let us consider claims about the primacy of naturalism. There will be significant, but brief cited passages from prominent naturalists as it is important, for present purposes, to take seriously both what they claim and how they make such claims, because in the second section I argue that our confidence in philosophy should supersede any confidence anyone (including the naturalists cited in section one) should have in naturalism. In the third section, I take note of the primacy of philosophy in light of the goals of this journal.

So, in this essay, the response to the question ‘Is naturalism too big to fail?’ will be ‘Maybe yes, maybe no, but philosophy is too big to fail, and in a follow-up essay my goal will be to show how at least one non-naturalist worldview does a better job than naturalism in pursuing the objectives of this journal.’ In sum, this essay is a kind of prolegomena to the overall project of firming up the view that naturalism is not too big to fail.

A few words are in order on the use of three terms: naturalism, philosophy, and theology.

Different forms of naturalism have been called, on one extreme, strict, puritanical, and scientistic and, on the other extreme, broad, latitudinarian, open, and common sense. The more strict a naturalist, the more she seeks to keep her metaphysics, epistemology including the philosophy of science, and value theory as close as possible to that which can be described and explained in the natural sciences. The more broad naturalists are willing to countenance the findings of the social sciences and they may even countenance moral facts, conscious states, and epistemic norms. In between you will find moderate naturalism, and various positions that resist forms of naturalism that are deemed too austere or overly extravagant. In this essay I do, on occasion, distinguish strict and broad forms of naturalism, but I will also refer to naturalism in general as a worldview common to virtually all forms of naturalism, namely a rejections of theism, the soul, miracles, an afterlife, and so on, and an acceptance of the view that our best route to understanding the world is the sciences with the possible addition from common sense and inferences from empirical observations. In general, naturalists tend to be physicalists, with strict naturalists preferring reductive physicalism, and broad naturalists favoring non-reductive accounts of the mental.

In the use of the term ‘philosophy’ I do not mean anything highly technical. By ‘philosophy’ I refer to the practice of conceiving, thinking, and reflecting on the nature of reality, the limits of knowledge, a conception of what is valuable, interesting, valueless, good or bad, and so on. To engage
in philosophy involves critically reflecting on different worldviews, clarifying the relevant concepts, building arguments and objections concerning the justification of one worldview versus another, and so on. The term ‘philosophy’ is not intended to refer principally to academic institutions of philosophy.

I am reluctant to offer a definition of ‘theology,’ because of the breadth of so many schools of theology. But I think that is fair to say that while theology may extend far beyond what counts as ‘philosophy’ (as demarcated above), it certainly includes philosophy and philosophical practices. Theological reflection is unimaginable, in my view, without the kinds of practices that the editors identify as the principle tools or methods identified in the mission statement of this journal. I shall return to this topic later in the essay. While my main focus is providing reasons for why philosophy is too big to fail, I shall propose in the concluding section that theology is too big too fail.

Let us turn, now, to the idea that naturalism (in general) enjoys a primary place in terms of inquiry into reality, values, and so on.

2. Should Naturalism Have the Primary Place in Inquiry?

Many self-described naturalists assume that in philosophy in general, and in metaphysics and epistemology in particular, we possess a problem-free understanding of what it is to be physical and of physical causal interaction. The following description of the state of play in philosophy of mind is not quite as obvious as it was when it was written in 1998, but it still rings true in many departments of philosophy and it is authored by one of the most well known philosophers working today. In Mind and a Physical World, Jaegwon Kim writes:

The shared project of the majority of those who have worked on the mind-body problem over the past few decades has been to find a way of accommodating the mental within a principled physicalist scheme, while at the same time preserving it as something distinctive – that is, without losing what we value, or find special, in our nature as creatures with minds. (Kim 1998, 2)

This position may have to be modified somewhat, given the many arguments that have been deployed against physicalism in works such as After Physicalism, edited by Benedikt Paul Gocke, Contemporary Dualism: A Defence, edited by Andrea Lavazza and Howard Robinson, The Waning of Materialism, edited by Robert Koons and George Bealer, and others. But there have been, and there still are, an impressive number of philosophers
who share, with Kim, a confident picture of the physical world, and a considerably less confident understanding of how to fit in what we think of as mental. If Kim is right, then “a principled physicalist scheme” is not problematic. It may be taken as uncontroversial; the task is to accommodate the mental and our values to such a scheme, and not to accommodate the scheme to the mental.

Consider philosophers David M. Armstrong, Michael Tye, Daniel Dennett, Richard Taylor, Elizabeth Anscombe, and Kevin Corcorain, each of whom give primacy to a naturalist worldview. Each of them work from the idea that what is physical is evident and a good starting place for inquiry.

David M. Armstrong offers this classic, succinct statement of his metaphysical position: “Naturalism [is] the doctrine that reality consists of nothing but a single, all-embracing spatio-temporal system” (Armstrong 1978, 261). In multiple publications, Armstrong has advanced controversial views on the laws of nature, the existence of universals, and so on, but he rarely considers whether the idea of a spatio-temporal system might be problematic. I note that this is rare, because Armstrong was an admirer of the idealist John Foster. But, as far as I know, Armstrong did not seriously consider whether his materialism might be displaced by Foster’s phenomenalistic idealism.

Michael Tye offers the following portrait of naturalism:

On the naturalist view, the world contains nothing supernatural … at the bottom level there are microphysical phenomena governed by the laws of microphysics, and, at higher levels, phenomena that not only participate in causal interactions describable in scientific laws but also bear the general ontic relationship to microphysical items as do the entities quantified over and referred to [in] such higher-level laws as those which obtain in, for example, geology and neurophysiology. (Tye 1994, 129)

Tye’s naturalism is thereby grounded in a confident scientific understanding of the constitution of the physical world and a robust treatment of physical causation. And here is Daniel Dennett’s often-cited claim in Consciousness Explained:

[T]here is only one sort of stuff, namely matter – the physical stuff of physics, chemistry, and physiology – and the mind is somehow nothing but a physical phenomenon. In short, the mind is the brain. … We can (in principle!) account for every mental phenomenon using the same physical principles, laws, and raw materials that suffice to explain radioactivity, continental drift, photosynthesis, reproduction, nutrition, and growth. (Dennett 1992, 33)

In the wake of such positive claims about what is physical, no wonder some philosophers today think that the idea of what may be nonphysical (such as an incorporeal soul or mind) is deeply suspect.
Here are three more philosophers who insist on a naturalistic starting point for our reflection on what it is to be a human person. Richard Taylor offers the following account as a natural place to begin understanding what it is to be a human being. More recent authors (especially the ‘animalists’) may be cited making the same point, but I do not think Taylor’s economic account has been surpassed; Taylor asks us to picture him pointing to a man fixing an engine:

This man, whom we see and point to, and who is one and the same thing as the person we are describing, is a visible, palpable, physical object. What else, indeed, could one see and point to? And from this it surely does follow that the person we are describing, the man who is assembling the engine, is a visible, palpable object, a living human body or, in short, a body. (Taylor 1969, 364)

The last two philosophers, Kevin Corcoran and Elizabeth Anscombe work from an ostensibly common sense picture of persons very much like Taylor’s pointing to an engineer. Corcoran and Anscombe are so persuaded by this starting point that they doubt the coherence of a traditional concept of persons as souls. This may seem hardly surprising in this survey of naturalist positions, but it is somewhat newsworthy as both these philosophers are Christians. Given that they already accept in their metaphysics something incorporeal (God is incorporeal or nonphysical), it is interesting that they find it baffling, if not incoherent, to acknowledge that there is a finite incorporeal, nonphysical reality: the soul. Here is Corcoran’s position:

Try as I might I cannot bring myself to believe what my mother believes, and what many Christians down through the ages have believed, about the metaphysics of human persons. It is not that I do not understand the view. I do. So too with the traditional way of understanding the nature of human persons. I simply cannot believe that I am an immaterial thing. I can believe that some kinds of persons are immaterial – for example, nonhuman divine persons like God and the angels. But human persons like me. That I cannot believe. (Corcoran 2005, 154)

Elizabeth Anscombe seems to be of the same mind as Corcoran. She even suggests that it is possible that “the conception of an immaterial substance … is a delusive one” (Anscombe 2008, 71).

Let us now step back, and consider whether this ostensibly common sense, scientifically formed naturalism deserves a primary place in our philosophy of mind, philosophy of science or, more broadly, our reflection on the nature of the world.
3. The Primacy of Philosophy over Naturalism

How clear or privileged a concept do we have of the physical world, and how does that match the concepts and practices we employ in philosophy: our thinking and reasoning about reality, our development of arguments about what exists or does not, our philosophical ideas about feeling, seeing, hearing, tasting, valuing, observing, and so on?

I propose that none of the above cases of a presumed naturalistic starting point are convincing. I suggest, rather, that the primary starting point should be the practice of philosophy, and it is through the practice of philosophy that we should weigh the merits of naturalism, in its broad or strict or moderate forms. Let us re-visit the claims of the six philosophers cited above.

In response to Kim, I suggest that it is impossible for anyone to have a clearer conception of what Kim identifies as physical than one can have of the concepts of a “scheme,” the “physical,” and “principled.” Grasping these concepts – or ways of conceiving – is philosophical. Kim’s statement as a whole on the state of play in philosophy of mind commits him solidly to the antecedent confidence in the reality of philosophical reflection; his account of how we might be “accommodating,” “valuing,” and grasping principles are all essential elements (in the passage cited) of philosophy, as are the concepts “creatures with minds” and “the mental.” Kim’s statement itself provide reasons to believe that we should have greater confidence in the philosophy of “a principled physicalist scheme” and in the reality of philosophical reflection in which we think about the process of “accommodating,” and our capacity to compare different accounts of the mental and the physical.

David M. Armstrong writes with confidence about “a single, all-embracing spatio-temporal system,” but it is important to appreciate that this is not an unmediated reference; rather, what Armstrong should be understood as doing is advancing a philosophy of space and time, and employing concepts of singularity and an idea of what counts as a “system.” As with Kim, I propose that one cannot have a clearer grasp of “a single, all-embracing spatio-temporal system” than one can have of a philosophy of “a single, all-embracing spatio-temporal system” and all the relevant concepts needed to make sense of such a claim. Moreover, employing such a philosophy is only clear and comprehensive insofar as one has considered the plausibility of there being non-physical, yet spatio-temporal, realities. G. E. Moore and H. H. Price and, going back to the 17th century, Henry More, each recognized immaterial spatial objects (as in after-images, sense-data, the phenomenal body, and so on). Filling out the very idea of the unification of space would also need to consider and explain away thought experiments.
by Anthony Quinton and others who have offered plausible reasons for thinking space is not unified. Shoring up Armstrong’s naturalism requires a great deal of confidence in philosophical reflection antecedent to affirming as a starting point the idea that everything that exists is part of a unified spatio-temporal system.

Michael Tye writes impressively of laws of nature, and yet we can have no conception of a law of nature unless we can trust the reality and reliability of our concepts and the reality and reliability of what may be called the explanatory power of philosophical reasoning. Arguably, there is some truth to thinking that our grasp of causal relations is natural and does not require sophisticated philosophical concepts. (The classical defense of such a position was developed by Thomas Reid in the 18th century.) But once we engage in the sophisticated notion of causation taking place at different levels of phenomena, an antecedent confidence in philosophy and our philosophical inferences trumps giving primacy to our direct grasp of causation. So, in employing some law that accounts for the boiling point of water under different conditions in one’s description and explanation of water boiling on earth at sea level, one needs to infer that if water reaches 100°C at one atmosphere of pressure, then it will boil (other things being equal). Insofar as this inference involves the concepts of water, heat, sea level, boiling, one event causing another, then grasping such laws of nature inevitably requires giving primacy of certainty to our grasping concepts and inferences. Much the same thing should be said of Dennett’s articulation of his form of naturalism.

Dennett’s manifesto seems to belie or disguise the fact that he must presuppose that we have a greater grasp of the philosophy of matter (or “physical stuff” and a “physical phenomenon”) than we do of matter itself, somehow referred to without the use of concepts or ideas of matter. Similarly, Dennett’s credo requires that we have an adequate philosophy of physics, philosophy of chemistry, and philosophy of physiology. Presumably, insofar as physics, chemistry, and physiology involve experience, observing, experimenting, thinking, arguing or reasoning, it seems that none of these practices are possible without trusting the reality and reliability of what may be called the mental or, in the general usage of the term ‘philosophy’ employed here, trust in the reality and reliability of our philosophical concepts and inferences. It is hard to see how one might be able to make any sense of Dennett’s appeal to ‘physical principles, laws,’ ‘raw materials’ and explanations unless one has an antecedent (philosophical) confidence in our concepts and inferences about when certain radioactive material is in such and such condition, then we may expect certain consequences. In all this, it
seems that we should have prior confidence in the adequacy of our ability to philosophically reflect on the world than we should have confidence that there “is only one sort of stuff” no matter what it is. In terms of conceptual priority, we cannot even begin to consider accounting for this or that without presupposing (and certainly without denying) the primary importance of our ideas, concepts, the explanatory role of reasoning or, in short, the primary importance of philosophy. In this sense, the idea that ‘there is only one sort of stuff’ does not seem too big to fail (the claim that ‘there are all sorts of things’ or, more modestly, ‘there may be all sorts of things,’ seems at least equal to Dennett’s claim), but philosophy is too big to fail, for neither Kim’s, Armstrong’s, Tye’s or Dennett’s positions can survive if the very practice of philosophy is deemed unreliable or unreal.

I now turn to Taylor, Corcoran and Anscombe. What would be a better starting point than the one proposed by Taylor?

The first thing to note in reply to the ostensibly common sense, naturalistic starting point for Taylor is that his appeal to what we see and point to is not ordinary, common sense. When would it ever be fitting to point to a car mechanic and informing her or those around you that she is visible or a palpable, physical object or a body? I suggest that most mechanics would conclude you were mad; still, this is not enough to conclude Taylor is starting off on the wrong foot. (A mechanic or anyone might find it odd if you pointed to their bodies and proclaimed ‘look at that body that is made up of carbon and other elements.) Yet what Taylor’s example does is bring to the fore that he is involved in what may be called “philosophical pointing.” That is, he is presupposing a philosophical account of the practice of pointing and our possession of the concepts of visibility, physical, palpable, being human, the practice of assembling, being a living body, and related other concepts. Moreover, unless one assumes a robust form of behaviorism, few persons would assume that everything about the mechanic is visible. It is possible that the mechanic shows no sign of her love or hatred of the job, her desire to become a vegan one day (a day that never happens), and so on. Taylor’s ostensibly innocent, pre-philosophical case of pointing turns out to be philosophical. Rather than take Taylor’s example as a starting point, I propose it is more reasonable to start with the idea that we have ideas and concepts, in short, we have a philosophy, of what it is to point, to be a mechanic, to be either visible or invisible, and so on, and we have confidence in our ability to philosophically reflect on persons and the world, providing reasons for or against certain philosophies.

Returning to Corcoran and Anscombe; what would it be like to think it incoherent or impossible to believe that one is anything other than a mate-
rial / physical living body, and not a soul? To have a concept of being non-physical (incorporeal, immaterial) one needs to have a secure concept or philosophy of what it is to be physical. In light of my observations above, it may come as no surprise that I think we currently do not have a problem-free concept of physicality or the physical. Apart from the still unresolved question of the nature (or ontological status) of color experiences, auditions, tastes, the sense of pain or hotness, smells, remembering, having emotions and desires, reasoning, acting, and so on, contemporary physics seems to have deconstructed our ordinary concept of what is physical. As Bertrand Russell observed: “Matter has become as ghostly as anything in a spiritualist séance” (Russell 1927, 78). More recently, Noam Chomsky has noted that there is currently no fixed, clear understanding of what counts as physical. “The notion of ‘physical word’ is open and evolving” (Chomsky 1980, 5). In reply to Corcoran and Anscombe, I suggest that calling into question the existence or the coherence of the idea of an immaterial soul, is only possible unless one has a clear philosophical account of what it is to be a physical or material thing or event. I have argued for the coherence of theism and dualism elsewhere (Taliaferro 1994), but I do not appeal to such work here and only point out that Corcoran’s and Anscombe’s position(s) rest on a philosophical framework and a network of philosophical concepts. I doubt that the affirmation or denial of the coherence of the soul (understood in incorporeal terms) is too big to fail, but I think it should be clear that philosophy, as a practice, is too big to fail.

To summarize this second section, I suggest that we cannot even begin to try to understand what is physical unless we can trust our philosophical reasoning and conceptual powers, for without these we would be unable to consider whether or not mind-independent objects have mass, volume, size, color, odor, sound, taste, sensory qualities of heat (as opposed to heat as in mean kinetic energy), or whether the physical consists in individual things (particles) or events or fields. I propose that the priority of intelligibility and clarity in our inquiries about ourselves and the world should be acknowledged as the philosophical, and that none of the above conceptions of the physical can be any clearer or more intelligible than the philosophical. Some definitions of the physical are quite overtly contingent upon the philosophical. Consider the case of when the physical is analyzed in terms of that which is inter-subjective or those things which more than one person can (in principle) observe it. Such an analysis must presuppose an antecedent philosophical conception and confidence in our subjectivity and observation (a confidence that we may grasp truths about ourselves and the world by way of our subjectivity and experience).
4. The Primacy of the Philosophical in Philosophy, Theology and the Sciences

A close reading of the excellent editorial “mission statement” for this journal offers handsome support for the primacy of the philosophical. If naturalism, broad or narrow or somewhere between, is to win our allegiance it must do so philosophically and presuppose rather than undermine philosophy, for in this journal philosophy is too big to fail.

Consider the elements that are presupposed in the launch of this journal: the construction of a platform for constructive and critical interaction. There is confidence in the reality and reliability of our being able to reflect on the significance of the findings of the natural sciences, and to form positions in light of physics, biology, psychology, philosophy and theology. The aims of this journal would make no sense unless we presuppose the reliability of our philosophical reflecting on religion and science. Moreover, what the editors refer to as theology is also too big to fail for this journal’s success as well as for the same reasons that philosophy is too big to fail. The editors write:

Theology as a self-reflective form of religious thought must explicate religious notions in a world that is deeply influenced by scientific worldviews. It reflects upon religious convictions against the background of the scientific understanding of truth. Theology acts to its own detriment when it ignores the significance of the empirical sciences. Both science and theology need philosophy to perform the bridging function, lest their “dialogue” deteriorate into mere equivocation, as too frequently happens in practice. In addition, the fields of philosophy of science and philosophy of religion often present new challenges to the self-understanding of science as well as to views taken for granted within theology.

There is, then, a stipulative sense in which theology’s failure would bring about the failure of this journal, but there is also the deeper point that all of the arguments in this essay for the primacy of philosophy can be employed in arguing for the primacy of theology. For example, insofar as Kim’s appeal to ‘a principled physicalist scheme’ involves employing a philosophy of principled physicalist schemes, it may also be described as employing a theology of principled physicality schemes.

If, for reasons of categorization, you prefer a narrower concept of what counts as a theological concept, you may instead grant that the fundamental concepts advanced in the naturalism of Kim et al, is theologically relevant and ripe for theological investigation.

Because this essay is more of a prolegomena to further answering the question in my title, I will not offer a robust conclusion at this point. Suffice
to re-affirm my commitment to continuing this line of inquiry in the future with the focus on one or more areas in which naturalism does not do as well as one or more non-naturalist alternatives.

References


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Naturalism in the Mirror of Religion

Three Theological Options

This essay explores three ways for speaking of God in the context of current discussions of naturalism within philosophy of religion and theology. The first is the expres-sivist theism proposed by the philosopher of mind Owen Flanagan; the second is a ground-of-being theism laid out in detail by the analytical philosopher Mark John-ston. While both these proposals situate concepts of God within the framework of naturalism as usually defined, the third proposal, an infinity-based theism, places naturalism in the context of wider philosophical concerns. Basic to this view is the naturalist principle of continuity (“synechism”). Accordingly, God and the world of creation are not to be treated as two disjunct realities: God is neither an extraneous addendum to the material world, nor can the infinite God be reduced to a predicate of Nature. Thus there exists a wide philosophical space between standard naturalist claims of ultimate explanation on the one hand, and varieties of theism that understand God to be a separate supernatural entity outside of the realm of nature, on the other.

Naturalism is not of to-day or of yesterday, but is very ancient, – as old, indeed, as philosophy, – as old as human thought and doubt. … The favourite method of treating it as though it were the outcome of modern scepticism, malice, or obduracy, is just as absurd as if the “naturalists” were to treat the convictions of their opponents as the result of incredible narrow-mindedness, priestly deception, senility, or calcification of the brain-cells. (Otto 1907, 17 f)

1. Introduction

In the sometimes heated debates between naturalists and theists it is help-ful to note that naturalism is as old as philosophical and religious reflection. Already in antiquity, Epicurus, Democritus and Lucretius presented fully naturalized worldviews (Otto 1907, 17) but naturalism has an even longer history within the context of religion. In his La mentalité primitive from 1922, Lucien Lévy-Bruhl forcefully argued that the distinction of the sacred and the profane is a late invention of religious history, and in his major his-
historical work, *Surnaturel: Études historiques* (1946), the Roman-Catholic Henri de Lubac showed that the term *supernaturalis* did not enter the Latin language until the ninth century Carolingian theology. The term then came into use in late scholasticism with its contrast between a “pure nature” and “supernatural intervention,” a prominent distinction also in the seventeenth century. Up to then, major Christian theologians used to see God as the source of goodness, radically beyond existence but restlessly flowing into the world of creation. On this view, the world of creation constituted a natural order – good in itself, but always imbued with divine grace.

Seen in this longer historical perspective it is a curious fact that contemporary naturalism is most often defined by its denial of supernaturalism. It is indeed possible to be a believer in God without believing in God as a supernatural entity existing alongside the world of creation. If God is to be characterized as infinite, God cannot be a higher existent among other lower existents, but must logically include finite existents. This way of thinking can be traced from Gregory of Nyssa in the fourth century, through Hegel and Post-Kantian philosophy up to Karl Jaspers’ designation of God as the encompassing reality (*das Umgreifende*). Also when conceived as the ground of being, God is logically prior to all existents, but must still be in continuity with all that exists as conditioned by God. This way of thinking can be traced from Friedrich Schleiermacher and up to Paul Tillich. Many contemporary theologians are therefore deeply sceptical about supernaturalist conceptions of God.

Likewise it is possible to be an antisupernaturalist philosopher without being a naturalist in a philosophical sense. One can be a phenomenologist, a hermeneutical philosopher, an analytical philosopher, or a pragmatist, without subscribing to a science-based naturalism. In *Between Naturalism and Religion*, for example, Jürgen Habermas advocates a postmetaphysical philosophy in contrast to both scientism and religious fundamentalism. Pointing to the self-reflexive nature of human reasoning, at once concerned about reality and socially participatory, he warns against the idea of a purely naturalistic worldview: “We can learn something from the confrontation with reality only to the extent that we are at the same time able to learn from the criticism of others. The ontologization of natural scientific knowledge into a naturalistic worldview reduced to ‘hard’ facts is not science but bad metaphysics” (Habermas 2008, 207). Similar criticism is now also increasingly voiced among Anglosaxon thinkers. In *Mind & Cosmos*, Thomas Nagel has recently criticized the idea of an all-inclusive scientific worldview that leaves no room for the special status of first-person and second-person perspectives as part of the way the world operates.
My target is a comprehensive, speculative world picture that is reached by extrapolations from some of the discoveries of biology, chemistry, and physics – a particular naturalistic Weltanschauung that postulates a hierarchical relation among the subjects of those sciences, and the completeness in principle of an explanation of everything in the universe through their unification. Such a world view is not a necessary condition of the practice of any of those sciences, and its acceptance or nonacceptance would have no effect on most scientific research. For all I know, most practicing scientists may have no opinion about the overarching cosmological questions to which this materialist reductionism provides an answer (Nagel 2012, 4).

Nagel labels himself a neutral monist (2012, 5), and is thus committed to an ontological antidualism. However, he thinks it is unwarranted to erect a world picture in which consciousness, cognition, and value are seen as accidental features of reality, either to be eliminated by scientific explanations, or saved as only secondary epiphenomenal features of reality. But the fact that Nagel views materialist naturalism as false in no way turns him into a supernaturalist. The examples show, however, that continental philosophers and theologians are today no longer alone in feeling a certain embarrassment about a too facile natural-supernatural divide.

What was genuinely distinctive about Scientific Naturalism, as it gained ground in American philosophy after the 1950s (Kitcher 1992; Kim 2003), is perhaps not so much its antisupernaturalism as its assumption that modern science, in particular physics, could in principle define ontology in a conclusive manner and set up strict constraints for what can deemed as “real” in all areas of existence and life. As expressed by the American philosopher Wilfrid Sellars, “science is the measure of all things, of what is that it is, and of what is not that it is not” (Sellars 1963, 173). According to Sellars, “scientific images” of reality should always be accorded the primary ontological status vis-à-vis the “manifest images” of phenomenal reality – the world of sensations and qualia, of intentions and goals, of feelings and moods, of language with its meanings and open-ended horizons, not to speak of the personal sense of what is meaningful, and what is not. Characteristic of a Scientific Naturalism is thus not only its antisupernaturalism (which will be shared by many other parties) but also its ambition to do away with the classical idea of a “first philosophy,” based on phenomenology, perception, common sense logic, or language. The ambition of the movement of Scientific Naturalism in Anglo-American philosophy between the 1950s and the 1990s was epitomized in Willard Van Orman Quine’s famous dictum that “philosophy of science is philosophy enough” (Quine 1953, 446). Although this statement could more safely be formulated as the requirement that philosophy should be exercised in continuity with science, Quine could also argue that “[t]he question how we know
what there is is simply part of the question … of the evidence for truth about the world. The last arbiter is so-called scientific method, however amorphous” (Quine 1960, 22f). Quine (1908–2000) and Wilfrid Sellars (1912–1989) made significantly stronger claims on naturalism than did Roy Wood Sellars (1880–1973), one of the early North American promoters of naturalism (Wilfrid’s father, in fact). Roy Wood Sellars introduced his Evolutionary Naturalism as follows: “We are naturalists now. But, even so, this common naturalism is of a very vague and general sort, capable of covering an immense diversity of opinion. It is an admission of a direction more than a clearly formulated belief” (Sellars 1922, vii). Comparing Wilfrid Sellars’ uncompromising claims with his father’s more open-ended ways of pointing to naturalism as a helpful horizon for thought, raises the question: Did the stronger claims of a Scientific Naturalism constitute a substantial progression of naturalism as a philosophical research program (solidly based on the successes of the physical, chemical and biological sciences), or was it based on a philosophical inflation of findings within physics, chemistry, biology, etc., into an all-inclusive Weltanschauung?

In this context it is interesting that the pendulum seems to have swung back again since the 1990’s. Many leading naturalists today seem to be worried about the ontological declamations of the earlier generation of naturalists. No less a figure than Hilary Putnam, a collaborator with Quine and his successor at Harvard, points to the “instability” of contemporary naturalism (2004, 61–66), and asks whether there is perhaps more appeal than content in naturalism. Putnam’s wit even brings him to compare the announcement of being a genuine naturalist with “the placing of the announcement in articles written in Stalin’s Soviet Union that a view is in agreement with Comrade Stalin’s” – everything else is “anathema,” since it could not possibly be true (2004, 59). At least two philosophical points undergird Putnam’s sense of reticence. The first is his view of conceptual pluralism, defined as the denial that any one language is adequate for all purposes of understanding and explanation. The second is the understanding that the world has many levels and facets that do not seem reducible to physics. The question is both one of semantics (conceptual pluralism) and one of ontology (irreducibility):

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1 In his defense of Quine, Geert Keil has argued that “Quine’s naturalistic rhetoric does not show him at his best” (2003, 277), and that Quine, fortunately, does perform persistent philosophical work that goes significantly beyond scientific evidence and description. Naturalism, one might say, is in practice more like a preferential meta-philosophy (“go with science as far as you can get in your philosophizing”) than an eliminative ontology.
“I do indeed deny that the world can be completely described in the language game of theoretical physics, not because there are regions in which physics is *false*, but because, to use Aristotelian language, the world has many levels of form, and there is no realistic possibility of reducing them all to quantum physics.” (Putnam 2012, 65; italics original).

The overall purpose of this essay is to explore ways for speaking of God in the context of current naturalisms. Naturalism, of course, has not been produced as a handmaiden for theologians but is rather profiled in order to exclude God and spiritual forces of any kind from the inventory of reality. In *section 2*, I sort out varieties of naturalism in the contemporary debate. After considering the standard distinctions between Scientific Naturalism and Liberal Naturalism, I point to a third, and mostly neglected, option: Empirical Naturalism, which takes a concise view of the empiricist nature of the natural sciences while acknowledging the need for complementing science-based knowledge with other forms of human knowledge. With *section 3*, I begin discussing ways of understanding religion in a naturalistic context. The first candidate is Owen Flanagan’s “expressivist theism” – a view that takes divinity as a handy predicate for experiences that make particular sense for human beings. In *section 4*, I go into more detail with Mark Johnston’s more elaborate version of a ground-of-being theism. Here God is not placed in the grammatical role of a predicate, but as the ultimate subject of all that is. God is the Highest One whose outpouring of Being is exemplified and disclosed in ordinary presences, regardless of whether we are aware of them, or not. In *section 5*, I point to the third view of an infinity-based theism which combines a ground-of-being theism with a stronger view of a divine self-identity in and through time and space. As infinite God is ubiquitously present in all that exists, but may also be revealed in finite natural events of a certain quality (such as love), without necessarily being disclosed in other types of natural events. This view is naturalistic on some accounts, but not on others. For all, it questions the principle of causal closure by emphasizing experiences of contingent natural events, which can neither be predicted in advance on the basis of existing causal models, nor be controlled by human agency. *Section 6* discusses how such theological thinking goes along with central concerns of naturalism (for all, the notion of continuity between God and world), while neither placing theology within a pre-defined naturalistic framework, nor treating God as an extraneous addendum to the world of nature.
2. Three Varieties of Naturalism: Scientific, Liberal, and Empirical

In contemporary discussion philosophical naturalism comes in several varieties, and it is increasingly difficult to define its scope and contours in clear positive terms. In the literature, it often seems as if the only generic feature of naturalism is its denial of supernaturalism. This is not only the case among contenders of a Scientific Naturalism, but also among empirical naturalists who avoid appealing to a cosmological whole-sale package of naturalism. John Dupré, to mention an example of a scientifically modest empiricist, regards naturalism as equivalent with “anti-supernaturalism” (Dupré 2010, 302). Yet also proponents of a Liberal Naturalism who want to broaden the scope of naturalism so as to include normativity and modal properties as well as intentionality and consciousness continue to define naturalism by its verdict against assuming anything smacking of supernaturalism. As stated by Mario de Caro and David Macarthur:

What makes Scientific Naturalism and Liberal Naturalism both versions of naturalism is that neither countenances the supernatural, whether in the form of entities (such as God, spirits, entelechies, or Cartesian minds), events (such as miracles or magic), or epistemic faculties (such as mystical insight or spiritual intuition) (De Caro and Macarthur 2010, 3).

The positive program of a Scientific Naturalism could perhaps best be seen as a philosophical program of “naturalizing” mathematics and epistemology, morality and normativity, consciousness and intentionality, but also beauty and religion. Such programs, however, take on different shapes according to which the basis of naturalization is found in a scientific theory about a given phenomenon, as in Scientific Naturalism, or in a broader reference to cultural history, as in Liberal Naturalism. In the first case, the natural sciences are seen as capable of giving fully sufficient explanations of important areas of human experience. The study of the inner logic of numbers in pure mathematics, for example, may be naturalized as tools humanly constructed for the purpose of explaining physical realities; qualia and intentionality as properties of brains; aspects of morality as results of an evolutionary pressure for collaboration; religious ideas as a result of hyperactive operations of pre-existing mental modules, etc. Here we find the stronger claims of naturalization.

Liberal naturalists often feel embarrassed by too gross claims of this sort, and rather seek to understand the aforementioned phenomena in a broader

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2 As ironically noted by Barry Stroud (2003, 22), “one thing that seems not to have been ‘naturalized’ is naturalism itself.”
philosophical perspective. The perspective of a Liberal Naturalism, however, is still naturalist in the twofold sense of (1) giving nonsupernaturalized accounts of the candidates for naturalization, and (2) by referring back to a wider panoply of sciences as a sort of discussion stoppers. No philosophical statement is allowed that contravenes the explanations of the respective sciences – from physics to psychology and sociology. In their essay, “Is Liberal Naturalism possible?”, Mario de Caro and Alberto Voltalini point to the “ontological tolerance” of Liberal Naturalism compared with Scientific Naturalism, and to its corresponding acceptance of a “methodological discontinuity” in allowing for conceptual perspectives that cannot be studied by the methods of the natural sciences. At the same time, however, they refer to the natural sciences as explaining the causal order of reality – without any additional input from other explanations of why something is happening, and other things not. Liberal naturalists want to widen the scope of naturalism by including also the cultural realm as part of nature. Accordingly, also modal thoughts and judgements, practical and theoretical reasoning, philosophical thought experiments (and we might add art, music, religious ideas, dreams etc.) are features of worldly reality, and the inquiry into their specific domains of nature may require specific methodologies of their own.

However, despite this ontological generosity, De Caro and Voltalini strictly maintain the presumption of the Principle of Causal Closure as a constitutive claim of naturalism. Entities may exist beyond the perception of the sciences, perhaps, but such features cannot have any real impact on the causal nexus of reality:

From an ontological point of view, the entities that according to many liberal naturalists may exist over and above scientifically explainable entities are precisely the entities that make no difference in the causal order of the world – that is, entities that in principle do not violate any scientific laws. These are entities that cannot induce any downward causation: That is, they cannot produce any break in the causal closure of the world investigated by the sciences (as might well happen, on the contrary, whenever a supernatural property were instantiated) (De Caro and Voltalini 2010, 78).

What I find problematic is not the assumption that our mental operations and other human activities “do not violate any scientific laws.” For without laws of nature we could neither raise an arm nor conduct a philosophical thought experiment. Neither, it could be added, could such actions be performed without the causal capacities residing in material bodies (Cartwright 1989). But do we actually have a sufficient empirical basis for knowing with a reasonable certainty, or even probability, that there exists a Causal Closure (with capital C’s) in the workings of nature? It is hard to see how the widespread philosophical idea of a micro-physical determination of our
medium-size world is substantiated by reference to contemporary quantum physics. Nor is Causal Closure intimated by the plethora of causal stories made available to us from other natural sciences (from biology to neurology). There here appears to be a naturalist leap of faith regarding the scientific basis undergirding De Caro’s and Voltolini’s version of a Liberal Naturalism. Rather abruptly they move from multiple scientific descriptions of causal capacities and regularities as observed by the empirical sciences to the idea of one Causally Closed System of Nature behind the phenomena.

But is it a convincing expectation that the basic laws of physics (such as gravity, electromagnetism, weak and strong nuclear forces) are able to tell us anything significant about the behaviour of biological organisms, including human behaviour? Certainly, the laws of physics support us, but do they predetermine our bodily and mental movements in time and space? More often than not it is the causal capacities residing in particular local organisms and systems that allow us to make predictions. What is sometimes dubbed as “laws” in biology (such as selection) or in neuropsychology (such as Hebb’s Rule) do not seem to predetermine our movements in any detailed manner (Gregersen 2013). The principle of selection only describes the statistical outcome of a vast amount of biological movements in time and space, just as Hebb’s Rule only conceptualizes the habits of neuronal pathways. Laws of nature are very inhomogeneous in kind – a few are global, many are local, a few are deterministic, but most of them are probabilistic (Watts 2006). And as shown by Angela N.H. Creager and colleagues (2007), contemporary science is today more about modelling natural systems for experimental purposes (such as the drosophila), and more about case-based reasoning and exemplary narratives than about finding fundamental and global laws.

Finally, one might ask whether it is reasonable to disregard first-hand experiences of downward causation, a standard feature in both pre-human and human life? The goal to complete this paper, for example, specifies my sitting on this chair in my office even on a beautiful day, which otherwise impels me to take a walk in the woods.

It seems that Scientific Naturalism is still to a wide degree defining the scientific background assumptions of many proponents of a Liberal Naturalism. Let me therefore point to a third variety of naturalism, usually neglected

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3 On downward causation, see Clayton and Davies eds. (2006), in particular the articles on downward causation in physics (Paul Davies, Erich Joos, and George Ellis), in biology (in particular Terrence Deacon and Barbara Smuts), and in theology (Arthur Peacocke, Niels Henrik Gregersen, and Philip Clayton). The philosophers are more divided between the critical sceptic (Jaegwon Kim), the reluctant (David Chalmers) and the proponents of downward causation (Nancey Murphy and Michael Silberstein).
in the literature: *Empirical Naturalism*. While most naturalists raise high claims on physics as ultimate reality, and on science as the final arbiter of truth, we also find a third group of philosophers of science who refrain from overly strong ontological commitments based on science. Empiricist philosophers argue that the pursuit of science is about “saving the phenomena” in a sufficiently tight explanatory pattern without necessarily ascending to a comprehensive metaphysical view of “nature as a whole.” Empirical naturalists are sceptic about the inherited certainties about deep-seated laws of nature. In the philosophy of physics, we find such empiricist program in Nancy Cartwright’s controversial book title, *How the Laws of Physics Lie* from 1983, or in Bas C. van Fraasen, who asked the famous question “What If There Are No Laws: A Manifesto” (van Fraasen 1989, 183–214).

One does not need to share a purely empiricist view of reality in order to see that the idea of a unified scientific worldview is not evidenced by scientific practices. Science mostly proceeds by a scientific modelling of concrete causal mechanisms rather than by intimating general laws of nature. The study of singular causes prevails over ideological constructs. John Dupré, for example, has shown how widespread ideas of micro-physical determination among scientific naturalists, genetic determinism in sociobiology, mental modules in evolutionary psychology, and rational agents in economy fail to explain the particulars, a failure concealed under the reference to hidden laws of nature. According to Dupré, “there is no plausible ground for the belief in causal completeness” (2005, 163), since one is not even able “to explain the behaviour of very small collections of particles” from general laws (2005, 165). Dupré, nonetheless, identifies himself as a naturalist in the antisupernaturalist sense.

What I find interesting about Empirical Naturalism is that its idea of science seems closer to the way science usually works than the corresponding assumptions of scientific naturalists as well as liberal naturalists of the type of De Caro and Voltolini. Moreover, empiricists may well subscribe to the physicalist *credo* that all that exists is the material world and what emerges within it. On this point, empirical naturalists distinguish themselves from ontological quietists like contemporary Wittgensteinians, who tend to see science as just one language game *on par* with others, or from those pragmatists who give up an interest in scientific explanation.

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4 Van Fraasen and Cartwright, like also John Dupré, are deeply indebted to the so-called Stanford School in philosophy of science, building on Patrick Suppes’ and Wesley Salmon’s statistical approach to contemporary science.

5 Also from a theological perspective it is possible to be an empiricist philosopher of science and a theist, as long as God is not conceived as intervening in physical processes.
The distinction between scientific naturalists believing in the Principle of Causal Closure, and empiricist naturalists who don’t believe that science will ever be able to explain reality as a whole, also has ramifications for the ways to understand different ways of being a methodological naturalist. Scientific Naturalism, taken on its own, leads to a strong version of a Methodological Naturalism which takes scientific methods to be the only safe pathway to knowledge, much like scientism. Empirical Naturalism is likewise strongly committed to using scientific methods in the sciences, and may even be tougher in insisting on measuring or modelling empirically what is empirically available. However, empirical naturalists are also aware of the inner limitations of scientific methodologies, which inevitably leave open many lacunas in what can be termed scientific knowledge proper. Empiricists, who shy away from comprehensive metaphysical assumptions about the pursuit of science, tend to subscribe to a limited version of Methodological Naturalism. This form of Methodological Naturalism can then be paired with a very robust anti-supernaturalism, or it can be combined with a sense of aspects of reality that may (or may not) commend a religious interpretation of reality. While Liberal Naturalism itself is defined in rather broad terms, some of its proponents remain committed to central ideas of a Scientific Naturalism such as Causal Closure. Other proponents are certainly antisenaturalists, but without taking interest into any specific methodology or metaphysics of science. This plurality of options within naturalism encourages a discussion of the relation between naturalism and the question of God within broader philosophical frameworks.

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6 Eliott Sober (2011), for example, argues carefully for the possibility of an agential presence of God in evolution, as long as God is not introduced as a contrastive scientific explanation, as in Intelligent Design theory.

7 An example is David Macarthur (2010), who distinguishes between Extreme Scientific Naturalism that only accepts the methods and results of physics, while Narrow Scientific Naturalism accepts a broader range of natural sciences, including biology, though most proponents still believe in the causal closure of physics: “Although many scientific naturalists have given up strict physicalism and scientific reductionism, the doctrine of causal fundamentalism [sic!] is still widely influential” (Macarthur 2010, 133). Broad Scientific Naturalism, finally, sees science as comprising also all the human and social sciences, though this form also, as we saw in the case of De Caro and Voltolini, often remains committed to the principle of Causal Closure.

8 As, for example, Richard Rorty (2010) or Huw Price (2010).
3. God as a Predicate of Nature: Owen Flanagan

The first option is to stay fully within naturalism as commonly defined. A religious naturalist gives up all truth claims associated with religious life, while defending the meaningfulness of religious practices, in so far as they can be seen as useful tools for expressing a human perspective on nature and society. Owen Flanagan is a particularly eloquent proponent of this view, which could be seen as an attempt to naturalize theism in the context of a Liberal Naturalism[^9].

In *The Really Hard Problem. Meaning in Material World* from 2007 Flanagan discusses what he calls The Space of Meaning[^Early 21st century]. He is here willing to extend the epistemic faculties of human beings beyond those of scientific investigation. Humans are creatures that tend to have “transcendent impulses” as part of their evolutionary endowment: “It is part of natural teleology” (2007, 186 f; 201). Human beings are, after all, not just cognitive, but also affective and conative animals. The affective sense brings us in contact with the reality that impinges upon us, but the conative drive transcends even the urge of self-preservation towards a social and cosmic mindset. While distinguishing the twofold meaning of transcendence as a (cognitive) belief that there is meaning and purpose larger than our selves, and as a more vague affection thereof, Flanagan states,

> **[T]ranscendence, it seems to me, is best conceived as a prepotent part of our basic cognitive-affective-conative constitution as human animals that is easily activated across environments. It can then appear as beliefs, as belief-like things, as beliefs or belief-like things with feeling and motivational bearing, and across all these dimensions as weak or powerful ‘I know not what’ thoughts or feelings of connection, merger/merging, awe, and the like. Transcendence so conceived has almost completely to do with such things as the urges to make sense of things and to live meaningfully (Flanagan 2007, 198 f).**

A deep conative urge for transcendent meaning thus involves the aspiration “to locate ourselves in the vicinity of what is true, good, and beautiful.” But it is our natural constitution that drives us (some more than others) to such “platonic orientation” (2007, 189). In this context also the relevance of the-

[^9]: Similarly, Flanagan has later attempted a naturalizing interpretation of Buddhism: “Imagine Buddhism without a karmic system that guarantees justice ultimately will be served, without nirvana, without bodhisattvas flying on lotus leaves, without Buddha worlds, without non-physical states of mind, without deities, without heaven and hell realms, without oracles, without lamas who are reincarnated lamas. What would be left? My answer is that what would remain would be an interesting and defensible philosophical theory with a metaphysics, epistemology, and ethics. This theory is worthy of attention by analytic philosophers and scientific naturalists because it is deep” (Flanagan 2011, 3).
ism comes up. Flanagan is a naturalist aware of the fact that theism is not necessarily tied up with supernaturalism. His own candidate of expressive theism, however, is hard to square with theism as usually understood:

Naturalism, as I conceive it, is plenty broad enough to make room for robust conceptions of the sacred, the spiritual, the sublime, and of moral excellence. But theism of the sort that takes certain texts as authoritative, that asserts that certain facts cannot possibly be known by humans to be true are uncontrovertibly true, is a problem. Assertive theism, but not what I will call expressive theism, is epistemically irresponsible, and dangerous to boot (Flanagan 2007, 189 f).

What Flanagan has in mind is a way of taking, say, creation stories as myths and stories that express the meaningfulness of the universe from the human perspective, without claiming that there is a divine reality who is actually creating the world, and even without assuming that reality in itself has any meaning. There's a difference between saying something as a mode of expression (in speech act theory, in first-person expressives), and of asserting something (in speech act theory, in third-person, first-order assertives), not to speak of explaining something (in third-person, second-order assertions). Only the first sort of religious mode is allowed, which again indicates that for Flanagan it is the affective-conative aspects of human nature that are of avail to 21st century meaning-making minds, but not the cognitive ones. Apparently religions should not include beliefs, but only “belief-like things.” Such as-if-theism may even be useful to the youth, as well as for others who feel a need for stories that show how the universe may seem like, as if it were actually ripe with meaning:

Expressivist theism says what it says in a manner that recognizes itself, and conveys forthrightly that it is simply telling a story where (a) one is ‘wanted’ and can come in handy for certain purposes (giving the youth some understanding of the complex texture of things), and (b) might do some good for those who want a story that makes the universe seem purposeful and not absurd, not an inexplicable given (Flanagan 2007, 197).

Theists are here treated in a friendly but obviously also in a somewhat dismissive manner. Yet also the irrational drive of religiously minded humans is acceptable, as long as religious stories are handy tools for fulfilling the (small-case) platonic urge for feeling at home in the universe. God, on Flanagan’s terms, is not to be believed, or believed in. Yet an “expressivist theism” may still provide a sort of “super-glue” for cultivating moral attitudes of unselfishness. Jesus’ expression of the Golden Rule, or the Buddha’s call to compassion, can work fluently in tandem with a utilitarian secular ethics, the latter doing the same job as the former without any theistic or cosmic backing (2007, 205–208).
Flanagan’s spiritualized kind of naturalism should from the outset be acknowledged as a live religious option today, even though his own – curiously accurate – self-designation as “a Celtic-Catholic-quasi-Buddhist atheist” (2007, 259) will only be shared by very few. The advantage of Flanagan’s kind of religious naturalism is that it immediately removes any theoretical conflicts between religion and naturalism, simply because religion has no cognitive value. What religions actually say about reality is not true, not even as candidates for truth. Hence the tolerant but also quite condescending view of the theistic traditions.\(^\text{10}\)

The cost of Flanagan’s religious naturalism, however, may also be high from a practical point of view. It seems hard to imagine a sense of cosmic resonance without something or somebody to resonate with, be it in the form of an actually benevolent universe or in the form of an all-encompassing and all-compassionate divine mind. One wonders whether the absence of empirical findings and scientific theories in Flanagan’s proposal is due to his disinterest in the cognitive aspects of religious life. The universe of nature and society is encountered on the basis of the human person’s affective moods, conative urges, and attitudinal “takes.” Even where such religious approach is mediated by embodied rituals and cultural stories, the latter are taken as instrumental tools for eudaimonistic self-improvement. Naturalism is tolerant and unopinionated about any “transfinite number of divinities in transfinite universes,” as Flanagan says: “Whatever you wish that feels compelling, satisfying, rich and deep. We are only talking about stories” (2007, 191). Religion seems to be involved in wishful thinking, de-burdened from any cognitive stance towards reality in order to move from what naturalism is opinionated about to what naturalism is unopinionated about (2007, 192 f).

It should be noted that other religious naturalists are more interested than Flanagan in the scientific basis for religious sentiments of celebration and awe, such as Ursula Goodenough in *The Sacred Depths of Nature* (1998) or Stuart Kauffman in *Reinventing the Sacred* (2008). But also here religion is not so much seen as a discovery of objective or trans-subjective aspects of reality, hence as a source of knowledge, but rather as inventions or reinventions of the sacred in nature that promote a more positive attitude towards reality. While an actually absurd universe seems still to form Flanagan’s background assumptions about reality, the science-based spirituality of Goodenough and Kauffman is more keen to pick up the positive aspects of nature – emergence of forms, trends towards complexification etc. How-

\(^{10}\) Flanagan does not discuss the fact that the theistic traditions (in particular Christianity and Islam) continue to be the fastest growing religions in a global perspective.
ever, none of the three thinkers give a prominent place to the darker faces of nature. Critically one might ask whether the removal of religion from the burden of having reality-checks facilitates a scientific cherry-picking as a legitimate part of religious meaning-making. – One wonders how Job would fare in the company with religious naturalists of this order.

4. God as Ultimate Subject: Mark Johnston’s Naturalist Theology

Another option for a religious naturalism is to place God in the grammatical position of being the ultimate subject, that is, the agent or activity rather than the predicate of a nature already predefined by science, or by other forms of human knowledge.

The Princeton philosopher Mark Johnston has recently produced two volumes on religious semantics: *Saving God: Religion after Idolatry* (2009) followed by *Surviving Death* (2010). The latter book deals critically with inherited religious views on afterlife while arguing for the view that “a good person quite literally survives death” (Johnston 2010, 15). What is interesting in the present context is his former book on *Saving God*. Here he develops a concept of God as “the Highest One” while tying God into a naturalistic worldview, including causal closure.

Johnston starts out from the problem of idolatry, so central to Western monotheistic religions, but argues that God also needs to be saved from too parochial definitions of God in the three Abrahamic religions: Judaism, Christianity, and Islam. “Saving God is saving God from us” (Johnston 2009, 1). Johnston’s point is that the monotheistic religions raise the legitimate objection of idolatry, but applies this criticism only to the adherents of other beliefs. However, the ban on idolatry should be followed to its logical end, asking any believer “as to whether your God is really God” (2009, 2).

This question should not be conflated with the psychological issue of the believer’s own sincerity. It is an objective question: Do you really address the real God? Johnston is here raising the stakes for the religious believer, in so far as he also criticizes the relativism of what he terms “a confused syncretism” (2009, 2) in contemporary discussion, meaning the view that different believers make use of different symbols but are addressing the same ultimate reference, whether they use the name of Yahweh, The Father of Jesus Christ, or Allah. (Johnston’s target may be a position such as John Hick’s version of a religious pluralism.) The names of God(s), according to Johnston, are very unforgiving in the sense that only one name could identify the One and Only God. Accordingly, if Christians address Holy Trinity,
and only Allah happened to exist, then Christians would not just have some false beliefs about God: “Christians would not even be addressing God” (2009, 8; italics by author).

It is refreshing to see such argument been set forward against the relativistic mindset of many scholars of religion today. However, I don’t see the cogency of the argument as presented by Johnston. If I call the office of the Department of Philosophy at Princeton University, and ask for Professor Mark Johnston (a proper name used a rigid designator), this would work. But if I call the department and ask the secretary for the one who had recently published something about afterlife (a functional description), the secretary would probably say, “Oh, you probably mean Professor Johnston, the author of *Surviving Death*?” My response would be, “yes, it must be him.” Such functional description would thus do the job as well. I don’t see that “The Highest One” might be any more unforgiving than the secretary of the Princeton University Department, especially if there can be only one referent for the highest One, while there could be several authors writing on afterlife.

This issue taken aside, I interpret Johnston as basically an empirical naturalist, rather than as a scientific naturalist, or a liberal naturalist of the pragmatic type. He thus argues that in order for us to have contact with God, God must reveal himself in space-time-matter. “There is no chance in believing in God, unless God has disclosed himself to us. The achievement of believing in God can come about only in the wake of God’s self-revelation” (2009, 9). This is an empirical requirement but also a logical one, as God is understood as the ultimate reality, who or which makes everything else possible. There is no access to God from speculation or free-floating interpretative manoeuvres, since the logic of “God” requires God to be somehow prior to any human attempt to discern the divine. Johnston here takes side with theologians of the calibre of a Karl Barth, Eberhard Jüngel or Wolfhart Pannenberg who again were taught by Hegel about the inner logical requirements for speaking of God. Thus revelation belongs rightly to the domain of a philosophical theology, a logic not sufficiently acknowledged by philosophers and theologians who have been used to think in contrastive terms about “natural theology” versus “revealed theology.” Yet Johnston’s criticism about self-centred versions of monotheism stands: “the Highest One is more than the monotheisms have allowed” (2009, 82). If there is a common source of grace, then all forms of grace will be manifestations of the Highest One.

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11 See, for example, Wolfhart Pannenberg (2004, 241): “…knowledge of God is possible only if God gives himself to be known.”
This does not mean that there is no pragmatic dimension to Johnston’s understanding of religion. Religion is not only an attempt to understand reality in cognitive terms but is also about learning to live a life in which we can be reconciled with the “large-scale structural defects in human life that no amount of psychological adjustment or practical success can free us from” (2009, 15). Examples are arbitrary suffering, self-concerned life forms, premature aging, and finally death. “The idea of salvation says that even in face of such things there must be a way to go on, keeping faith in the importance of goodness, and an openness to love” (2009, 15 f). On Johnston’s account, therefore, exploring reality and coping with reality without shying away from the structural defects of existence belong together. The cognitive and the pragmatic dimensions of lived religion can’t be taken apart.

Moreover, since one cannot refer to God apart from God’s manifestations, one needs to go deeper into the phenomenology of the existing monotheistic religions without a priori assuming their truths. Here Johnston uses a two-fold procedure: First, the method of a phenomenological bracketing, which is attentive to the self-understanding of already existing forms of religious meanings and practices (without presupposing their truth or falsehood). Second, a method of evaluating the existing monotheisms on their own terms:

The method [is] to take the foundational experiences of the major monotheisms on their own terms, and then look at the implied character of the spiritual beings who ostensibly appear in these experiences. The question was: Does the internal phenomenology of the foundational experiences of this or that version of monotheism display the character of the Highest One? (2009, 53)

The advantage of this procedure is that the point of departure is taken within the empirical world, that is, in the actual world of religious apprehensions of meaning. Contrary to the “me-and-the-world” approach of Owen Flanagan, Johnston is aware of the fact that religious life is always guided by self-reflexive interpretations of reality. Something is always interpreted as something by somebody. Without referring to the work of Charles Sanders Peirce, Johnston presupposes that religions do not only have a dyadic relation to reality (“me here,” “world there”), but is always mediated by a triadic structure of signs, signified, and interpretation: A sign is always something which stands for something to somebody in some particular respect

Or as expressed by Charles Sanders Peirce: “Now a sign has, as such, three references: 1st, it is a sign to some thought which interprets it; 2d, it is a sign for some object to which in that thought it is equivalent, 3d, it is a sign, in some respect or quality, which brings it into connection with its object” (Peirce 1992, 38 = CP 5.283).
If we now use this triadic semiotic model we would see religion as having both a *semantic* dimension (something referring to something else), a *pragmatic* dimension (something of importance to somebody), and a *syntactic* dimension (one sign referring to other signs)\(^\text{13}\). In this model, it is easy to discern some of the differences between Flanagan’s and Johnston’s strategies. In Flanagan’s expressive theism it is the pragmatic dimension that matters. The semantic dimension of beliefs is deemed irrelevant (there is no God behind one’s spiritual wishes; hence Flanagan’s self-designation as “atheist”), just as the syntactic relations between different signs are blurred into indistinctiveness (hence Flanagan’s self-description as a “Celtic-Catholic-quasi-Buddhist”). Johnston’s strategy is here intellectually more ambitious, since he operates within all three semiotic dimensions. Johnston starts out from the interpretation of experiences, or sign-events, within developed forms of religious interpretation (the syntactic dimension). Otherwise religion would be tied up only with curiosity-provoking signs, without any interpretative perspective. Yet any particular interpretations stands in a danger of either occluding the semantic object of the Highest One, or falsely attributing the semantic content to the constructions of subsequent religious interpreters. For as Johnston argues,

A revelation of the Highest One could not just consist in an experience whose whole content was that of an impressive event, such as a loud basso voice booming from the heavens, the sun’s whirling around the sky, or a dry path opening across the Red Sea. There is nothing particularly religious about such strange events; and the experience of them as such does not deserve the name of religious experience, even if a theological construction is *subsequently* placed on the experience. The experience of the strange, the tremendous, or the mysterious, plus a theological construction placed on that experience, still falls short of an experience in which the Highest One seems to be revealed. What more is required? The human being who is the beneficiary of a revelation must see or hear the event *as* the Highest One manifesting himself. That content must be internal to the experience and not just to the subsequent beliefs that it prompts (2009, 68).

Put in other terms: In order for an experience to be seen as revelatory, it must be revelatory of its ultimate referent (the semantic dimension). The semantic content of the event is essential, and this content must be revealed as being internal to the religious experience, when experiences are seen as manifestations of the Highest One being present in revelatory events for somebody in a given context, including the pragmatic need for living with the “large-scale structural defects” of human existence.

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\(^\text{13}\) I’m here using the terminology of the semiotics of Charles William Morris (1938).
Johnston, in other words, is aware that there exists no brute revelation. Moreover, any identification of divine manifestations logically requires some antecedent interpretative horizon, a sort of openness towards what sort of things could be the manifestation of God.

The logic of seeing and hearing as makes some antecedent religious sense of things a precondition of the revelation of the Highest One. Yes, God is transcendent, and so known de re to us only by his revelation; but for that revelation to occur, there must be antecedent de dicto knowledge of something of the nature of the Highest One (2009, 69).

This is an argument for a modest form of a natural theology. The antecedent concepts and expectations to God do neither form a full-blown positive concept of God, nor do they make up an argument for the existence of God (whatever “existence” here might mean). Rather, it is a sort of antecedent negative knowledge about what God could not be:

Our antecedent knowledge of the Highest One may mostly consist of negative propositions concerning the character of the Highest One. This knowledge is “antecedent” knowledge in that it is not derived from specific revelations; it is potentially available independently of those revelations. Any serious engagement with our questions should proceed on minimal assumptions about the deliverances of the antecedent religious sense. It will be too much to assume that we have naturally, and independently of any revelation of the Highest One, any rich positive knowledge of the intrinsic character of the Highest One (2009, 36).

So far Johnston has argued for the view that the religious interpretation of “seeing something as something” requires that God, or the Highest One, is something more than an individual occurrence of experience. But he also adds an important second antecedent expectation of lived religions, namely that “the Highest One could not have evil intent, nor a contempt for the truth” (2009, 36). For if this were the case, we could imagine something still higher, which is not only ubiquitous in its manifestations, but also having something that we may analogically refer to as a love and truthfulness.

This view looks like an ethicized version of Anselm’s ontological argument in *Proslogion* 2, where “God” is defined as that in relation to which nothing higher can be thought (*id quo majus cogitari nequit*). At first sight, this seems to be an ill-founded leap from the cosmic functions of God to God’s ethical nature. But what Johnston has in mind is that religions never consist of belief interpretations only; religions, as a matter of fact, are always related to issues of salvation, or human self-transformation. In other words, in the world of lived religion there exists no purely theoretical concept of divine creativity, since the antecedent concept of God is always related to some sort of practical faith in God’s beneficial nature. In other words, dis-

14 “A ‘god’ is the term for that to which we are to look for all good and in which we are to
interested speakers do not speak about the real God, since God-talk is not only about ultimate reality, but also about humanity’s ultimate concern (Paul Tillich). As put by Johnston, “Belief in God is not a matter of believing in the proposition that he exists; it is an orientation in which the Highest One comes into view, with salvific effects” (2009, 16). Just as religions presuppose antecedent concepts of God, they also presuppose antecedent understandings of the human condition. Not only is God to be saved from our idolatry, but we are also ourselves to be saved from our selfish drives.

Now the two principal concerns of Johnston’s antecedent philosophical theology have been identified: God as the ubiquitous source of being, and God as being devoid of evil intents and cheating. From here we also have at hand an anticipation of his critique of the existing monotheisms. By claiming to be the privileged possessors of divine self-revelation, the Abrahamic religions much too easily succumb to the mental practice of idolatry, which subsequently may slide into violence against all those who putatively stand outside the compass of one’s own allegedly true religion. Second, by claiming to be the privileged recipients of divine grace and salvation, the traditional forms of monotheism inadvertently aggrandize the centripetal forces of a religious egotism.

In order to purify the innermost intention of monotheism it is, according to Johnston, necessary to give up the notion of privileged revelation: “The incarnation of the Divine is ubiquitous” (2009, 121). But more than that: Since God is rational by nature, God acts in accordance with the laws of nature. Here Johnston’s naturalistic worldview comes to the fore. Scientism (or: reductive scientific naturalism) is seen as naïve, but not, according to Johnston, the scientific vision of causal closure. Since God cannot be a deceiver, “even from the side of religion, the scientific vision of causal closure. Since God cannot be a deceiver, “even from the side of religion, the scientific ambitions of modelling reality in a way that is causally complete and self-contained should be respected and encouraged” (2009, 48). Causal completeness is not only a legitimate ambition of science, but also part of the antecedent hope of a religious orientation. While Johnston is right that causal closure and determinism are compatible with divine omnipotence (as exemplified in Calvin, Schleiermacher, and others), he is himself making the naturalistic leap of faith regarding causal closure:

[There is] a clear sense in which our world is closed under purely natural causation; that is, the causal potential of each type of event is always and everywhere a matter of the laws of nature. The distribution of the chances of all future events would be fixed by the
take refuge in all need,” as Martin Luther said about the generally presupposed concept of ‘god’ in his exposition to the First Commandment in his Large Catechism (Kolb and Wengert 2000, 386).
physical past and the laws of nature … The system of natural law, and the nomological character of individual causal transactions, may themselves be a manifestation of the Highest One, the way in which he continually ‘does’ things; it may be that in which his almighty power consists (2009, 49 f).

Central to Johnston’s view is his ability to work out an interesting comparison with traditional Thomism. Johnston is aware that Thomism involves a view of God as Being-Itself (ipsum esse), which is not endemically supernaturalist:

The Highest One = Existence itself

Johnston nonetheless points to several weaknesses of the Thomist solution. The first is that Being-Itself thereby is impassible, as Existence Itself is “inherently unaffected by its exemplifications” (2009, 113). Since Existence Itself is not internally related to natural events, “the analogical basis for describing Existence Itself as Love does not lie in the essential nature of the Highest One”; such divine movement is only possible, if Being-Itself is understood as “Being’s Self-Giving” – Johnston’s own view (2009, 113 f). Moreover, a second flaw of Thomism is that it adds to the aseity of God (as the source of everything) the attribute of divine simplicity, whereby God is taken away from the world of ordinary existents. Rather, the Highest One should be seen as hosting the complexities that God is continuously passing on to nature (2009, 110). We are now ready to see the logic of Johnston’s alternative:

The Highest One = the outpouring of Existence Itself by way of its exemplification in ordinary existents (2009, 113).

God is here basically conceived of as agency, and God’s Self-Giving is “radical” in the sense that the divine outpourings arise out of its root (radix), while always involving a self-disclosure. Here we arrive at the following extended formula of the “nature” of God:

The Highest One = the outpouring of Existence Itself by way of its exemplification in ordinary existents for the sake of the self-disclosure of Being (2009, 116).

Thus all that happens and everything that takes place are exemplifications of Being Itself. The art of religious life is to be attuned to the divine Presence presented to us as presents of a radical divine Self-Giving. There exist no purely “subjective” phenomena, since we are at any moment overflowed by a world of objective existents impinging upon us from all sides. The light does not come from us as constructors of meaning, but the light is already here, in the midst of ordinary life. Seeing reality in this way is a response to what Johnston’s calls the “doubly donatory character of reality”:
Seeing reality in that way, holding that frame in place as the basic frame in which one experiences the world, supports a profound background feeling of gratitude in response to the ‘doubly donatory’ character of reality. First, I am an expression of Being Itself, as are all things present to me, as Dylan Thomas puts it: ‘the force that through the green fuse drives the flower drives my green life’. Second, all of this is made available to me, gratis. Whatever happens then, I have already been endowed with great gifts; I have already won the cosmic lottery. Seeing all this, perhaps I can begin to overcome the centripetal force of the self, the condition of being incurvatus in se, and instead turn toward reality and the real need of others (2009, 156 f).

Humanity is here placed in a radically other position to reality than in Flanagan. In his expressivist theism, the evaluation of the world starts out from the human perspective propelled by the individual’s affective-conative quest for meaning, which then led the searcher to pick and choose in aid of the construction of Meaning Early 21st Century. For Johnston, by contrast, we begin with the world of ordinary existents, which, within the religious framework, are seen as presents of a grace poured out over each and anyone, whether she recognizes it, or not: “We are not Producers of Presence; it is not that our mental acts make things present. We are Samplers of Presence; our mental acts are samplings from a vast realm of objective manners of presentation” (2009, 152).

In my view, Johnston here offers both a clear and beautiful view of what it means to be a creature carried by the continuous creativity of God within the larger world of nature. What is “naturalist” about this view is that there are not two separate realms: “Reality is Being-making-itself present-to-beings, not a sort of conjunction or fusion of two realms, the realm of sense and the realm of nature” (2009, 158). This is not a “me-and-the-world” spirituality, but a “me-as-a-present” in “the-world-as-a-present” piety. This is not a constructive view of religion but a receptive view of religion: To be a religious naturalist is here to be a radical receiver of the gift of life.

This is what the monotheisms were meant to say, according to Johnston. But here we must come back to his charge of idolatry. The structural defect of humanity lies exactly in the continuous drive to put ourselves at the center. This happens as soon as the gratuitous self-disclosure is hijacked by the centripetal force of human existence. We thus believe that God is there for our sake, so that we arrive at the impious conclusion that

The outpouring of Being by way of its exemplification in ordinary existents is for the sake of the self-disclosure of Being to us (2009, 157; italics by author).

According to Johnston, the centripetal fall of positive religions lies in the little amendment, to us. By this move we place ourselves as somebody who can set up demands to the offerings of life. But the point is instead to real-
ize that we are always already standing in the position of being the *receivers* of the outpourings of God. Existence is always and continually expressing itself in ordinary existents, both before and above and below our conscious recognition.

Let us again use Job as a litmus test. To Johnston, Job is the archetype of believers who “keep their faith in life, and in the importance of goodness” (2009, 159). And now comes the point: “The meaning of the book [of Job] is not that we should keep our mouths shut in the face of divine majesty and power; the meaning is the moral and religious irrelevance of Yahweh and all the putative Cosmic Interveners” (2009, 159). For Job is already morally better than his God, and it is him, and his relentless trust directed towards the Higher One that saves him. Unlike Flanagan, Johnston gives a central place to Job. He is his hero because he keeps up his faith towards life’s offerings despite whatever happens. But observe that Johnston’s Job is not allowed to weep, nor to lament and cry up against God. Neither is Johnston’s Job allowed, like Jacob, to struggle with God, or, like Abraham, to hope for anything new to happen. In the end, we are presented with a very severe and calm Job, much more like a pious Stoic exercising *apatheia* in the face of fate, and less like a human being struggling to find the face of God in contexts of pain, suffering, and other “structural defects” of nature and society. Could more be said?

5. God as Ultimate Subject and Embodied Love

We are now coming to the third option for speaking of God in a naturalistic context. The first option, Flanagan’s expressivist theism, placed the divine in the human ascription of meaning to particular experiences. The second option, Johnston’s ground-of-being theism, placed God in the position as the ultimate activity of Existence Itself, placing the human in the role of the receiver, who is to take what might come. The third option to be discussed is an infinity-based view of God. I start out drawing the contours of this concept of God before clarifying, in the concluding section, in what sense

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15 I continue to use the term “theism” in accordance with English-American standard usage, namely as a placeholder concept for a variety of concepts of God as relevant for religious believers, not about a specific notion of God in terms of God being a substance existing alongside the world of creation, as often in German or Nordic understandings of the term Theismus. – I use to say to my students that I’m a theist in the US and Britain, but not on the Continent, and that I’m not inconsistent for that.
this view is in line with naturalistic assumptions, and where it breaks away from naturalist assumptions.

On the infinity-based view, God does not “exist” as a separate entity as in classic forms of “supernatural” theism. However, God – and not Nature as understood by most naturalists – is the ultimate reality, at once the source of all reality and pervasively present throughout time and space. Thus, the idea of divine infinity includes the perspective of a ground-of-being theism, but adds the idea of a self-identical divine “nature” in and through time and flux – a divine “character,” if one so wishes. Accordingly, the identity or character of God is not only based in God’s function as restless productivity, but is also characterized by an enduring quality of awareness and patient love for what is not God, but world.

With these background expectations in mind, believers would expect to see at least some examples of purposefulness in evolutionary development and social experience. But divine infinity neither entails a general idea of pre-stated progress, nor the idea of occasional “non-natural” interventions into the pluriform causal nexuses of nature. The idea is rather that nature is already “gifted” by the presence of God in, with and under each event, and throughout the flow of natural processes. There is no “causal joint” to be looked for between God and world, for the causal joint is everywhere – from quantum events to neural events. As formulated by Arthur Peacocke, “God is the immanent Creator creating in and through the processes of the natural order. The processes are not themselves God but are the action of God-as-Creator” (2007, 19).

Grammatically speaking, God is verbal in nature in the twofold sense of being the ultimate agential subject of all that comes into being, and of surpassing any particular natural process indexed in time and space. The laws of physics can indeed be seen as expressions of divine consistency and integrity, but so can also the interplay between random events and natural regularities which will inevitably, over time, lead to the emergence of new constellations in the realm of the living.

Like in Johnston’s view, every natural event is an exemplification of divine agency, but unlike the view of Johnston’s, the qualities of divine nature are not displayed or revealed in just any ordinary event or process. It is here that the qualitative aspects of divine nature come to the fore. While divine creativity is exemplified everywhere (and creativity is in itself a mode of love insofar as it is self-giving), divine love and care for otherness is not exemplified everywhere in the universe. Hardship and destruction are built into the way in which nature works. The question of the events and places in time and space in which the qualities of the divine is clearly displayed is therefore not
a parochial question, but is a question about the self-identification of God, and hence of the infinite God’s availability to finite human beings.

Transcendence, in this view, would then have three distinct meanings. God is (1) transcendent by being the conditioning source of the material world of creation: the results of divine creativity (as in ground-of-being theism). (2) God is ontologically transcendent in relation to creaturely existence by virtue of the fact that the divine nature or “character” is not fully instantiated in the world of creation. God is not only Prior in terms of conditioning the universe but also Other in relation to the ongoing natural processes and historical events. Since this is so, God is finally (3) epistemologically transcendent, in so far as the divine nature of love is hidden under the guise of many natural processes, and can’t be simply inferred from the ensemble of natural events and ongoing processes in the world of creation.

Observe, however, that in the infinity-based God is not transcendent in the usual sense of being elsewhere. God is radically present in the world as its source, and co-extensive with the material world as God’s own creation. (What may lie beyond this presence cannot be known by human beings.) Thus, the otherness of God is exercised within the realm of nature (comprehensively understood), just as the empathetic aspects of divine love and suffering can only emerge by a radical divine coinherence in the world of creation. God is thus at home in the universe, but since there is no sheer identity between God and nature, there will also be aspects of otherness, and even estrangement, in God’s relations to the world as not divine in itself.

This sense of otherness, and occasional estrangement, is also an aspect of human experience. Like any other organism, human beings also have a proper sense of otherness in relation to the wider system of nature (in terms of needs, drives, and urges, relating to the sense of absence of otherwise available resources). Humans can even occasionally have a sense of a mental estrangement in relation to one’s own body (in situations of pain, handicaps, and aging) and human community. Job was alone among his friends, and so was Jesus in Gethsemane. But usually human beings are at home in the universe as active partakers of the world of nature and society.

The infinity-based view of God is thus able to absorb central concerns of Johnston’s ground-of-being-theism, insofar as human beings are “doubly donated” creatures. But it also absorbs Flanagan’s sense of the human “urges

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16 Hence, a natural theology cannot provide conclusive, but only preliminary concepts of God and the divine.
17 As expressed in the Prologue to the Gospel of John (1:11): “He came to what was his own, but his own people did not accept him.” The verbal character of God allows many adverbs, or modes of being in the world, we might say.
of transcendence.” Eudaimonistic harmony, however, is not always there. In the midst of human existence, a sacred discontent can arise as to the way the world is, expressed, for example, by prophets concerned with social injustice. In this context, it is essential to be able to appeal to the justice, goodness and beauty of God, who embodies a latent power of love in the midst of the world of creation. In the infinity-based view, it is possible to appeal to the persistent power and character of God’s nature as the ground for hope. Transcendence is here about the power of God to instantiate new actions/events in the future.

This character of the divine nature as love cannot subsist in another world, but must be exercised in and for this world. We here come to a place where Johnston may have voiced too general a criticism of the monotheistic religions. Saying that God is the “outpouring of Being by way of its exemplification in ordinary existents for the sake of the self-disclosure of Being to us” (2009, 157) does not mean: “to us, in our group, only.” The idea that God is essentially Love (and not just loving in analogous ways) exactly means that God is always making room for otherness, and is always receptive as well. God is Immanuel (“the God with us”), also outside the Jewish tradition. “God shows no partiality,” as it is echoed in several New Testament traditions. A gift is not a mere objective datum, but is phenomenologically speaking a gift given to somebody, who then has the unspoken role of passing on the gift to others. Also, a gift only seldom comes alone, but is part of social commitments. There is both a radical generosity beyond any bounds in the outpouring of Being, and yet what is initiated is a flow of gifts circulating into the wider community beyond the hands of the initial recipient (Gregersen 2009). The problem of self-preoccupied religiosity only appears if a gift stops with a human receiver, who then makes an idol out of his or her gift. Also gifts have a verbal nature, both transitive and intransitive: Gifts are given, received and passed on, and may return.

Accordingly, the durative persistence of divine Love over time is only possible as a self-communicative Love, in which there is more than one interlocutor. One word is opening up for another word, and so forth. Love and communication belong together. Johnston’s concept of “Presence” may here be a premature discussion stopper. Presences have to be sampled and received, but they should also be passed on to others, and circulated into the social realm. Also, Johnston’s central concept of Presences as gifts flowing into the ordinary existence seems overly abstract, since all that happens can’t easily be perceived as gifts. It seems difficult, if not perverse, to understand just any natural event (such as the dying of a child, or horrific events) as a gift of Being. Some Presences, after all, cry out for being stopped, surpassed, and
suspended. Job’s problem was not his selfishness, but the loss of his family members, which was also his loss. He was therefore accusing the outpourings of Being Itself for not expressing love and respect, but a tyrannical and arbitrary power. For that reason he was appealing to God beyond the outpourings of Being Itself. “For I know that my Redeemer lives, and that at the last he will stand upon the earth” (Job 19:25).

The infinity-based view of God is a philosophical notion. But it is a philosophical placeholder concept capable of articulating the idea of a latent presence of God in the midst of experiences of divine absence, and hence capable of rooming a theological vision that safeguards the otherness of God as a communicative Love in the midst of a material world. Probably the infinity-based view can be identified within several religious traditions, but in the Christian doctrine of Trinity we find one particular explication of it. As stated by Rahner’s Rule (so called after Karl Rahner), the world-oriented aspects of the Triune life (“the economic Trinity”) and the internal divine life within the triune community (“the immanent Trinity”) belong together, and can’t be taken apart as realms in two tiers. The doctrine of the Trinity thus speaks of three interlaced aspects of divine nature, which are exercised together: (1) the creativity of Being Itself (in Christian symbolism primarily ascribed to the Father), (2) God as co-extensively embodied and co-suffering in and through the world of creation (in Christian symbolism the Son or embodied Logos pervading everything that exists), and (3) God as capable of taking new initiatives in future natural events (in Christian symbolism primarily ascribed to the Holy Spirit). This way of filling out the infinity-based concept is certainly not naturalistic in any standard understanding. But in which sense is such view in line with naturalistic concerns?

6. Naturalism in the Mirror of Self-Interpreting Religion

Let me clarify as clearly as possible the relations between the infinity-based theism sketched out in section 5 with the varieties of naturalism discussed in section 1.

In two senses, the infinity-based view follows naturalistic conceptions of reality. The first is the assumption of a constitutive materialism concerning anything that exists, or can come into existence, within the world of creation. All-that-exists is either simply made up of matter, or is related to material structures so that, for example, pure mathematics is related to applied mathematics, minds to bodies, possible futures to present actualities, God to divine agency. Accordingly, our thinking should always take its point of
departure in embodied realities. Whether there is more to say about the coherence of reality remains an open speculative question; also it is possible that there are other existing realities beyond our scientific knowledge and imagination (mathematical numbers, *possibilia*, disembodied minds, God in Godself?). But as said, we cannot talk about such realities as existent, and should refrain from doing so unless they tie into our understanding of natural events and processes in a describable manner (pure mathematics in relation to theoretical physics; concepts of God in relation to religious phenomena, etc.).

For all practical purposes, however, we should be aware of the limitations of Scientific Naturalism, and give preference to the commitments of an Empirical Naturalism. We can do so while acknowledging that the World (with a capital W) is not the same as our scientific perceptions of the world (Flanagan 2006, 437); that Nature (with a capital N) is not the same as naturalistic conceptions thereof (Fink 2006); that the Laws of Nature (with a capital L) are not the same as our scientific formulations of the laws of nature (Bunge 1979, 248–52); and that God is not the same as our theological conceptions of divinity. Just like monotheistic religions warn against idolatry, so a warning against idolatry concerning the nature of the material world may be apposite as well: “Thou should not make wooden pictures of matter and the material.” We cannot conflate our inherited conceptions of Mass-Energy with the Reality itself without blocking further inquiries into the nature of matter and the material. Over the last decades, for example, “information” has become a serious candidate for understanding the workings of Matter in fundamentally new ways (Davies and Gregersen 2010). In the new view of Mass-Energy-Information, the idea of causal closure is under strong pressure from more dynamical ways of understanding the emergence of causal capacities over time.

The second naturalistic principle to be affirmed is the *doctrine of synechism*, that is, the view that all things hang together. This principle of continuity has both an ontological and an epistemological implication. In line with the assumptions of a constitutive materialism, an *emergentist monism* may be affirmed which excludes principled forms of dualism but is highly tolerant concerning the multiple ways in which the one and only matrix of Reality appears to us (including, say, dual-property monism). Likewise, the doctrine of synechism is coherent with the idea of an cognitive pluralism, which affirms the need for a plurality of both explicative and explanatory

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18 As shown by John Macquarrie (1984), all major philosophical theologians, with the exception of Hegel and Whitehead, argue that divinity cannot be fully conceptualized.
forms of understanding. But even if all things hang together (also God and world as described above), we are not in an epistemic position to erect a scientific or religious worldview in which everything can be understood under one perspective. In the light of the existing disunity of the sciences (Galison and Stump 1996), in the light of the impossibility of measuring our dappled world in universally applicable and exact models (Cartwright 1999), and in light of the impossibility of reducing psychological, social, linguistic and phenomenological descriptions to scientific language, Scientific Naturalism might be deemed a dead end in philosophy. Scientific Naturalism, however, might still be used as a preferential vision in order not to block any future scientific attempts at “naturalizing” what can be naturalized in future research. But apart from cosmology and theoretical physics, progress in scientific explanation is to be expected to come from investigating singular causes and system-specific causal capacities (Cartwright 1986, 91–140) rather than from hand waving claims of causal closure, and of micro-physical determination.

On this basis, I wish to point to the following preferences when using naturalistic understandings in religious self-reflection. First, normative for theological reflections are in particular the mature sciences which have proven their long-time explanatory success with respect to empirical configurations of material events, processes and structures. From this follows, by an *a posteriori* mode of reasoning, a preference for empirically reductionist and mathematical-computational models of science, wherever they are applicable. However, such very helpful reductionist methods will sooner or later need to be complemented with more synthetic approaches to reality. Explanatory pluralism reigns in the actual sciences, even though claims of having found the causal grail are many. Second, normative for religious reflection are not the expansionist metaphysical versions of naturalism, but the empiricist versions of naturalism. However, if one wants to complement an empirically oriented naturalism with a naturalistic metaphysics, the philosopher, theologian, or religionist will have to be keenly aware of the revisable status of such large-scale metaphysical proposals. Metaphysical proposals are like extended thought experiments.

Is any theology conceivable on these terms? I hope to have shown that this is possible, if only naturalist principles are used in tandem with more hermeneutical endeavors, including phenomenology of first-hand experiences. What I have aimed to show is that the ground-of-being theism is indeed able to explicate seminal ontological features of divine creativity. However, I have also pointed to the insufficiency of a ground-of-being theism. If standing on its own, a ground-of-being theism will turn out to be apophatic from
beginning to end, leaving us with a concept of God as restless productive, hence incapable of expressing any communicative aspects of the God-world relationship. My proposal has therefore been to add to the ground-of-being theism an infinity-based notion of immanent transcendence. In this vein, I have also pointed to the need for identifying where in this material world the identity or “character” of divine nature is most fully expressed, so that God is made available to human (and other) beings. Concepts of revelation and religious experience belong properly to philosophical theology. Concepts of God can’t be understood in abstraction from the engagement of religious people in their interaction with a (putatively!) self-communicative God.

References


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“You see, I am determined to baptise the Origin of Species, nolens volens, which will be its salvation,” Asa Gray (letter to Charles Darwin, March 31st, 1862).

“It does not do to leave a live dragon out of your calculations, if you live near him,” Bilbo Baggins (as quoted by J. R. R. Tolkien).

Darwin’s genius discovered or invented a manner of analysis which explained everything, from the frog, the virus, to the albatross, not to mention, in light of evolutionary psychology (as one apparently welcome extension of his theory of evolution by natural selection) it explained why we like pornography, have affairs, murder, or are jealous, why we hate, go to war, are scared or at least suspicious of foreigners, indeed, why Jane Austen wrote as she did (not to mention Shakespeare), why we go to church, read stories to our children at bedtime, indeed, why we are bothered with all that E=mc² stuff. Evolution told us all, and to lapse into the silliness of Intelligent Design and, God forbid, Creationism, was lunacy in spades, quite evidently. In short, for all those with a degree, at least from a decent university, we were, if we are still to be allowed to sport the college tie, to embrace this logic, one that was called, quite simply, naturalism.

Now, though, if the wheels of naturalism’s bus have not come off, there is certainly a puncture in one of them. Why is this the case? Well, many honest intellectuals – scientists, philosophers, historians, and theologians have noticed some rather sizable elephants in the pantry, and to be honest, they are rather making a mess of things – trying to squeeze by them to reach the groceries is now somewhat painful. Thomas Nagel, an esteemed philosopher, atheist to boot, has been one of the more vocal and profound voices raising an index finger and pointing to the large holes in the apparently seamless logic of evolution by natural selection. In so doing, he and others such as Jerry Fodor, Noam Chomsky, and Barry Stroud – all atheists, one
should add – have called into question the legitimacy of this settled logic of explanation.

Nagel lays out the thesis of his book with admiral clarity, and against fashions of academe:

The aim of this book is to argue that the mind-body problem is not just a local problem, having to do with the relation between mind, brain, and behaviour in living organisms, but that it invades our understanding of the entire cosmos and its history. The physical sciences and evolutionary biology cannot be kept insulated from it, and I believe a true appreciation of the difficulty of the problem must eventually change our conception of the place of the physical sciences in describing the natural order (3).

He continues, again with bravery: “[A]lmost everyone in our secular culture has been browbeaten into regarding the reductive research program as sacrosanct, on the ground that anything else would not be science.” (7) Well, there’s the enlightenment for you, after all, where is the adventure of the intellect in such dogma?

I once settled down on a Sunday afternoon to read the paper, and there before my eyes read an article telling me about how meaningless the universe was. Why? Quite simply, reading the headline, the universe was empty of intelligent life, apart from our own (though at times, that too, could be doubted), er  

so life is meaningless. But then, the very next Sunday, reading the same paper, lo and behold, I found another article telling me that there was, most likely, life in many places in the universe, er  

so life was meaningless – where’s a decent creationist when you need some degree of logical conversation or at least falsifiability?

And here’s the rub, according to Nagel, et al.: “Evolutionary naturalism provides an account of our capacities that undermines their reliability and in so doing undermines itself.” (27) Stroud, too, gives support to his argument, arguing that a “restrictive naturalist who holds that what mathematical statements assert is not part of the natural he believes in would have to explain our knowledge of logic and mathematics without himself appealing to any mathematics or logical facts at all”. Or once more, “[t]here is an embarrassing absurdity in [ontological naturalism] that is revealed as soon as the naturalist reflects and acknowledges that he believes his naturalistic theory of the world … I mean he cannot say it and consistently regard what he says as true” (ibid., 33).

And this, as we know, also applies to universalized Darwinism. Thus, ultra-Darwinism and naturalism are like the proverbial drunk man on a moving

train who appears to walk straighter than his fellow passengers. Evolutionary explanations are causal, whilst common sense psychology, for instance, is irreducibly teleological (now, it should be pointed out that not for a moment does Nagel think that cognitive science, evolutionary accounts of our mental apparatus, dispositions, and so on, do not tell us a great deal; they do, but they themselves are examples of teleological activity, otherwise a regress of sorts sets in). Indeed, how can consciousness ever be understood in terms of survival when all its functions can easily be accounted for in physiological terms, of course with no actual reference to consciousness? A colleague of mine, an atheist evolutionary scientist, recently told a number of us that many cultural activities, such as religion, were merely “overspill” – we had over-egged the epistemological omelette – our adaptive minds had gone all exotic on us, acting way beyond their pay grade, so to speak. But when you ask: “Does that mean evolutionary science is itself a matter of overspill?”, there is little, well, to be honest, no comeback. Knowledge has been functionalized.

Survival has the ascendancy over truth, and while truth and survival may at times coincide, such coincidence is contingent. This means many of our most cherished beliefs have, according to those such as Dawkins, turned out to be patently false. (What are memes, after all?) Moreover, many scientific views have themselves turned out to be erroneous, yet we have undoubtedly benefited from them. Falsehoods can be beneficial. Does not society (not that society exists – Margaret Thatcher obviously being a keen advocate of ultra-Darwinism) benefit from us accepting erroneous ideas like mind, existence, free will, ethics, and even objects? But we are told that none of these ideas are true. At the same time, however, we wouldn't fancy our chances crossing the road to pay a visit to our Darwinian lover without them. In short, truth is not about fitness enhancement. Any fiction that is useful is fair game for natural selection. As the Rolling Stones once sang: “You can’t always get what you want, but you might just get what you need.” As the saying goes: “In the kingdom of the blind, the one-eyed man is king.” In our case, this would be: “In the land of the dead, that which mistakenly thinks it is alive, breeds.” In the movie The Matrix, the deluded humans are pretty useful for the robots (read genes). But there, as with us, fitness does not track truth.

As Nagel argues, and by our lights, quite rightly, we need rationality to be normative, to be objective, to be real; if, that is, science is to be possible: “Mathematics, science and ethics are built on such norms. It is difficult to make sense of all this in traditional naturalistic terms. Unless we are prepared to regard most of it as an illusion.” (72) The banishment of God, something enabled by the strict opposition of the natural and the supernatural, has come at an enormous cost. We have ended up in a world, a supposedly natu-
ral world, which is devoid of that which we presume to be natural: people, free will, first-person language, color, ethics, organisms, and indeed life itself.

Rather tellingly, Quine once compared the simple belief in objects to belief in the gods of Homer\(^2\). How, if matter is all there is, can we discern real difference between *matter thus and now matter so*, even if, in our folk language, that change might be termed (parochially and indeed colloquially) as murder, cancer, and so on. This is, therefore, the very liquidation of existence. Or, as St Gregory of Nyssa points out: “By their arguments, they would prove that our life is nothing but death.” And, of course, not even that.

Bas van Fraassen refers to the “contrastive nature of explanations.” In other words, explanations that say X=B do so in a manner that informs us of why this is the case – why, that is, X is not C\(^3\). But materialism and physicalism appear to fail this test miserably. Rather, all they offer is the desperate sweat of the compulsion to destroy. It is the Freudian death drive made manifest, for they would rather deny the world and have nothing, than have something there for which they just might have to give thanks, or at least for which they should be thankful. The elusive (nay, slippery) nature of naturalism is revealed when we realize just how hard it is to give it substantive definition; and this inability surely belies its ideological nature, as is the case with materialism. The shifting sands of materialism and naturalism and their strained efforts belie hollowness, one that Nietzsche would recommend we expose with a hammer, gently tapping the sides of this modern idol, being greeted by a telling sound. This is the intractable *je ne sais quoi* of materialism and likewise of naturalism.

The ontology available to naturalism means that third-person sub-personal analyses are all that is available to us – whoever *us* is. But, as Nagel points out, “Organisms such as ourselves do not just happen to be conscious.” (45) As *Homo sapiens sapiens*, that is what we are. Indeed, Nagel goes so far as to argue that mind and reason are basic “aspects of a nonmaterialistic order.” (32) There begins the adventure, the unexpected journey, one that is soon removed by the priests of scientism by simply, in the most crass crudity, eliminating consciousness altogether, and so being done with the awkward questions that arise from such an astonishing phenomenon. Conscious of this inevitable strategy, Nagel tells us in his book that

\[\text{s}[\text{election for physical reproductive fitness may have resulted in the appearance of organisms that are in fact conscious, and have that observable variety of different spe-}\]

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specific kinds of consciousness, but there is no physical explanation of why this is so, nor any other kind of explanation that we know of. (46)

Moreover, he continues, “I take it for granted that knowing the immediate cause of some effect does not always make it intelligible – the causation of consciousness by brain activity being a prime example.” (47) And over against the functionalization and therefore fictionalization of truth by way of naturalism’s employment of natural selection, he makes the point that “[t]he judgment that our senses are reliable because their reliability contributes to fitness is legitimate, but the judgment that our reason is reliable because its reliability contributes to fitness is incoherent.” (125)

Nagel, on his unexpected journey, exposes that the Emperor has no skin, not to mention clothes. Rationality, mind, ethics, science, from where did you spring, we might ask? This is the question. Bilbo Baggins, read Nagel may have confronted the dragon that is naturalism, but he cannot offer a real alternative, and why should he? Nagel has written a magnificent book that confronts what we can only call the astrology of much modern materialism or naturalism – this is the Dark Ages of our modern predicament, which seems to be upon us. Out of respect for Nagel’s bravery, we should be motivated to confront the question he asks, and set out on another journey, now in light of this book, more expected than unexpected, not one of questions but of answers, if there is such a thing. To conclude, Nagel needs his Frodo, and this wonderful book is sorely lacking such a person, but the adventure continues, nonetheless.

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Nature is Enough is divided into two parts. Part one is devoted to developing a naturalistic explanation of how human lives can be meaningful; part two is devoted to an explanation and defense of what the author calls “religious naturalism.” For reasons I explain below, it seems to me that the second part of the book is more successful than the first.

Nature is Enough opens with a big question: What makes human life meaningful? Rue’s initial answer to the question of what makes a human life meaningful is that “the meaning of human life consists in the pursuit of
goals that enable a marriage of happiness and virtue” (14). However, Rue's inquiry does not end with this answer. He notes that this answer entails that human lives can be meaningful only if human beings can have goals, which in turn requires the reality of teleological or “so that” causation. The existence of teleological causation means that we can explain the occurrence of some events in terms of the end or goal to which those events lead. For example, we can explain my present typing in terms of my goal of completing a review of Rue's book. According to Rue, the existence of teleological causation requires the existence of functions or purposes. For example, the function of the heart is to pump blood (58). Rue argues for a limited “inherentism” according to which the universe as a whole is meaningless in the sense that it lacks a purpose or function but that certain things within the universe have functions. In particular, just as the heart is for pumping blood, “living organisms are for achieving reproductive fitness” (59). This function of surviving and reproducing is not something that is bestowed upon living organisms from the outside – for example by a transcendent God – but rather emerges from the nature and structure of the organisms themselves.

While all living things pursue their own “viability” (defined as the continuation of their own lives), they do so in different ways; indeed, it is in their nature to do so in different ways (75). The human strategy for pursuing viability is to pursue both “personal wholeness” and “social coherence” (78). Personal wholeness requires a kind of harmony among the goals one sets for oneself as well as a reasonable degree of success in achieving those goals. Persons who have achieved such wholeness are “well nourished and free of debilitating diseases” as well as “fully engaged with the world” (66). And social coherence requires harmony and cooperation between the individual and the rest of society. Just as personal wholeness requires the minimization of conflict between goals within a single individual, social coherence requires the minimization of conflict between the goals of distinct members of society. Furthermore, human beings are “unique in pursuing these … goals by means of emergent, progressive cultural traditions” (86). In this way, our cultures have an important role to play in making our lives meaningful. When all goes well, our cultural tradition helps to make our lives meaningful by creating a correspondence between self-interest and virtue, enabling us to promote viability by way of personal wholeness and social coherence.

Finally, Rue claims that viability is a fundamental value that is the foundation of rightness and wrongness: “[A]ny behaviors contrary to the value of viability may be judged to be objectively wrong … [I]t is wrong always, everywhere, and for anyone, to value anything above the enduring prospect of life” (62). Rue argues later that this fundamental moral principle grounds
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an obligation toward the environment. Because personal wholeness and social coherence are dependent on the integrity of the biosphere, “[b]eing for viability now begins to mean being for the integrity and sustainability of the earth’s life support systems” (115). Thus, Rue offers what we might call a neo-Aristotelian theory of meaning and morality according to which viability is both the purpose of all living things and the foundation of rightness and wrongness. This picture is naturalistic in that meaning and morality are ultimately grounded in the natural world rather than in a supernatural entity like a transcendent God.

The heart of the second part of Nature is Enough is an explanation and defense of religious naturalism. Naturalism is construed here as the view that all there is to reality is the natural world; everything that exists is natural. Rue defines a religious person as “one who takes ultimate concerns to heart”; accordingly, “a religious naturalist differs from a nonreligious naturalist by virtue of his or her suite of attitudes; the religious naturalist takes nature to heart” (110). Much of part two of the book is devoted to explaining all that is involved in taking nature to heart. Along the way, Rue also criticizes some arguments from John Haught for the view that nature is not enough, describes what he takes to be two plausible scenarios by which religious naturalism “will prevail as the most universal and influential orientation on the planet” (123), and draws on his own personal experience to develop a compelling description of how a reflective atheist might face the world.

In my view, the degree to which this book succeeds in achieving its various aims varies widely. Consequently, whether one will be rewarded by reading this book depends a great deal on what one hopes to find in the book. I think that the second part of the book is more successful than the first. The first part of the book is hampered by a combination of haziness with respect to important details, lack of engagement with relevant philosophical work, and some questionable arguments. As I noted above, Rue proposes that specific organs (e.g., the heart) as well as all living organisms have functions or purposes. A central concern of contemporary philosophy of mind and science has been that of naturalizing functions – that is, of making sense of the notion that biological entities and organisms can possess genuine functions if naturalism is true1. At the same time, some theistic philosophers have argued that genuine functions can be made sense of only in a theistic context2. Consequently, a defender of the view of the sort Rue endorses

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ought to provide some account of how genuine functions can exist in a nat-
uralistic universe—a topic about which Rue has little to say. Additionally,
some philosophers—for example, Philippa Foot and William Casebeer—
have recently advanced neo-Aristotelian approaches to morality that share
some important similarities with Rue’s view\(^3\). A further weakness of Rue’s
approach is that it does not engage with (and appears not to be informed
by) this work. Finally, a crucial element of Rue’s naturalistic moral theory is
that viability is “the one and only objective moral standard” (62). In defense
of this important claim, Rue offers the following argument:

It seems clear that moral reasoning depends on what might be called moral imagina-
tion, that is, the ability to generate a variety of options for behavior together with the
ability to winnow them selectively on the basis of moral sensibilities. … [W]e may now
ask about the value of these abilities themselves. If moral imagination is a good thing—as
all moralists must believe—then what makes it a good thing? The biologically informed
answer would be that moral imagination … is instrumentally valuable in helping our
species to meet the challenges to viability. This means that the value of moral reasoning
per se derives from the value of viability. But if the value of having a range of behavioral
options is relative to viability, then the value assigned to any particular option is also
determined relative to the standard of viability, and if the value of every moral option
(together with the ability to imagine a range of options) is relative to the same standard,
then that standard may be said to be objective (62).

The heart of the reasoning advanced in this passage is that the ability to
identify and then choose from various possible courses of action is valuable
only as a means to viability; therefore, any given possible course of action is
valuable precisely to the degree that it contributes to viability.

This reasoning has two defects: The initial premise is inadequately sup-
ported and the intended conclusion does not follow from the premise. Rue
writes that the claim that moral imagination is valuable only as a means to
viability is “[t]he biologically informed answer.” (62) However, biology tells
us (at most) that moral imagination was selected because it contributes to
viability; we possess moral imaginations because our ancestors’ moral imag-
inations helped them to survive and reproduce. But nothing at all about the
value of moral imagination follows from that biological claim. The biological
claim neither entails the claim that moral imagination is valuable nor rules
out the claim that the moral imagination possesses value that has nothing
to do with viability—for example, that it is valuable because it contributes
to human dignity. Furthermore, the claim that the ability to select courses
of action is valuable only because it contributes to viability does not imply

\(^3\) See Foot, Philippa. 2001. *Natural Goodness.* Oxford: Oxford University Press, and Case-
that all courses of action are valuable just to the degree that they contribute to viability. It is compatible with the initial premise that the value of actions depends on a host of other factors as well – for example, the extent to which they generate pleasure or contribute to human dignity.

While the first part of *Nature is Enough* strikes me as inferior to the neo-Aristotelian offerings of Foot and Casebeer, the second part provides a fascinating discussion of what it means to live in a naturalistic universe. In this part of the book, one can find insightful discussions of, among other things, faith, hope, and love in a godless universe and how one should face death and suffering if one rejects the reality of both God and an afterlife. The final chapter of the book, “Confessions of a Religious Naturalist,” is both the most personal and the most powerful part of the book.

In sum, then, I find the first part of *Nature is Enough* to be unconvincing and would advise those looking for a philosophically plausible account of meaning and morality in a naturalistic universe in a neo-Aristotelian vein to look to Foot’s *Natural Goodness* or Casebeer’s *Natural Ethical Facts* instead. However, I think that the second part of *Nature is Enough* – particularly the final chapter – is an excellent resource for those seeking thoughtful reflection on how to face up to the reality of a godless universe.

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