THE IDEALIST VIEW OF DIVINE ACTION IN NATURE

by Edward Epsen

Abstract. Theologies of divine action in nature have sought to maximize traction with the sciences to secure their credibility. While varying in significant ways, all extant proposals share a commitment to physical realism, the claim that (at least some) physical entities and facts are both mind-independent and ontologically basic within creation. However, I will argue that this metaphysical commitment undermines the body of scientific knowledge to which theologians wish to be responsive. Is there an alternative? Building on the work of Howard Robinson, I will show that there is a coherent account of mind's place in nature that denies physical realism. Such an account would enable a theological description of God's sustaining and governing action in nature through the ontological mediation of minds and laws causally constraining their sensations. Furthermore, this proposal yields a positive research program that makes essential use of the contributions of the natural sciences to understand the nature of embodiment.

Keywords: conceptualism; divine action; idealism; laws of nature; phenomenalism; qualia; realism; reduction; supervenience

Introduction

One way in which the dialogue between theology and science has taken shape is through theologians' attempt to craft proposals regarding divine action in nature. These proposals were institutionalized through the Divine Action Project, a collaboration from 1988 to 2004 between the Vatican Observatory and a Scientific Organizing Committee led by Robert J. Russell. The project sought in effect to update expositions of the doctrine of providence in a manner directly responsive to the current body of scientific knowledge concerning the workings of nature.[1] The first wave of divine action proposals typically looked for divine causal influence at sites of unpredictability afforded within the scope of natural laws. These so-called *causal joint* joint proposals included positing divine influence on the

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collapse of the quantum wave function (Russell 2006), genetic mutation (Ward 1996), and the chaos of dynamical systems (Polkinghorne 1994).

These standard proposals have been critiqued on theological grounds for invoking a "God of the gaps" and for being effectively deistic in their conception of the God-world relation and the demand that divine action be noninterventionist.[2] A new wave of theistic counter-proposals have come forward to correct this, including, for example, James K.A. Smith's (2010) "pneumatological naturalism," Christopher Knight's (2004) panentheism, and Michael Dodds's (2012) Thomistic account of divine action.

A striking feature of all extant proposals is the assumption that mutually constructive dialogue with the sciences requires that one accept a realist interpretation of the success of science. This article seeks to break new ground by working on two fronts: first, by critiquing the position that physical realism makes the most sense of current scientific practice; and second, by articulating a view of divine action that does not presuppose physical realism but does afford a positive research program that includes the contributions of the natural sciences.

The inclination to say that physical realism (to be defined below) makes the most sense of scientific practice has a variety of sources. One is the commonsense opinion that in everyday and scientific interaction with the world what our hypothesizing and testing brushes up against is an objective world-structure not of our own making; this inclines us to the philosophical inference that realism is the best explanation of this objectivity. Another source is the widely held opinion that, just as the natural sciences have achieved explanatory success without needing to invoke the mind and its powers, so too will the sciences of the brain eventually succeed in explaining mental phenomena in purely physicalist terms. To make way for an idealist view of divine action in nature, both of these inferences must be critiqued. Showing why they are flawed teaches us something positive about the ontological status of what is studied in the sciences. The plurality and partiality of the sciences strongly suggest that the human perspective, with its distinct sensory and conceptual capacities, makes a necessary contribution to the identities of even their most basic content. To deny this, as realism requires, undermines the empirical accessibility of nature and so our claim to scientific knowledge. But accepting the fact that the empirical content of the sciences conceptually depends on the human perspective allows a theologian to propose an idealist view of nature and so of God's action within it.

This article is therefore organized into the following sections. In the section "Introduction" I diagnose the motivation for realism from the desire to maintain the world's objectivity. In the section "Order, Objectivity, and

Physical Realism," I show why the metaphysics of realism need not, and should not, be regarded as the best way to account for the world's objectivity. I also present arguments for an idealist alternative. In the section "How Should a Theologian Identify the World God Produces?," I present the outlines of a constructive idealist account of divine action in nature. In the section "Embodiment and the Subjects of the Sciences," I show how this constructive account re-imagines the relation between theology and science. And in the final section I conclude.

Order, Objectivity, and Physical Realism

In treating the subject of divine action in nature, Christian theologians want to be able to avoid being pantheists or deists and maintain that God wholly transcends what he creates while also being immanently present within it to sustain its existence through time and direct it toward certain ends. But they also want to be able to recognize the objectivity of the observable world as the source of our empirical knowledge and this is normally, I think, a motivation to espouse physical realism. Securing objectivity has been a prominent theme in modern science and theology scholarship.[3] Realism suggests itself as one way to achieve this. Once objectivity is safeguarded via realism about space and matter, some cosmic place has to be found for the human mind with its distinct consciousness and rational agency. For reasons I will not attempt to diagnose here, theologians, even more than philosophers, have an aversion to Cartesian dualism, which would take the mind to be an ontologically primitive substance within creation. This means that human rational agency must be grafted onto matter as its ontological base, typically the matter of the brain. This is the strategy of the emergentist metaphysics of panentheism, where mind is conceived of as a novelty produced from the organizational complexity of an underlying material base.[4]

This is the sort of move that can seem natural or tempting when accepting physical realism is regarded as a logical consequence of accepting the results of modern science. There is a tendency among theologians, however, to confuse physical realism with an acceptance of modern science and objectivity.[5] A possible source of this confusion can be found in the thought of Thomas Torrance (1969), with echoes in the tradition of *scientific theology* that stems from him.[6] He writes:

> …this is the great story of modern thought, whether it be in theology, science, or philosophy: the struggle for fidelity, for appropriate methods and apposite modes of speech, and therefore for the proper adaptation of the human subject to the object of his knowledge, whether it be God or the world of nature and man; but it is also the story of the struggles of man with himself, for somehow the more he comes to know, the more masterful

> he tries to be and the more he imposes himself upon reality, the more he gets in the way of his own progress.[7]

For Torrance this is the problem of "genuine objectivity." When Torrance rejects idealism he takes it to be incompatible with a recognition of nature's objectivity and to imply some kind of license for an exploitative attitude. The failure to distinguish absolute subjectivity from idealism and objectivity from realism depends on a failure to distinguish different kinds of subject-dependence or mind-dependence. Something can be objective in the sense of *public*, or that which is intersubjectively available for cognitive scrutiny and agreement and not dependent on human volition, without thereby being nonperspectival or conceptually independent of other aspects of human mentality (such as sensation and conceptual articulation).

If objectivity means that the observable world is persistent and publically available for identification and reidentification over time and by different observers, then objectivity is perfectly compatible with the denial of realism. Objectivity in this sense only requires that our sensations are externally caused with repeatable content possessing an intersubjective coherence that is not of our own making. This bare recognition is neutral with respect to the ontological status of what causally constrains our sensations. Physical realism goes beyond a mere acceptance of the objectivity of the observable world to make a metaphysical claim, one intended to account for that objectivity; the observable world is objective because our observations are caused by an ontologically primitive and mind-independent physical world.[8]

A similar point applies to the epistemic results of modern science. We can accept scientific theories as delivering truths about what is observable without accepting the realist's metaphysical explanation that these theories are true because of the existence of unobservable entities and properties corresponding to certain theoretical terms. As a metaphysical explanation of the success of science, realism differs from what a scientific explanation would look like. A scientific explanation would have to be commensurable with the same scientific apparatus whose success it was trying to account for. It would have to involve no more than the full battery of models, measurement, experiments, hypotheses, theories, and their wider institutional infrastructure. In other words, it would just look like more science. And this is what science has done in the course of its history. Where there is a judgment of past success, this success is internally conserved, seeking conceptual integration with current scientific practice as much as possible. The very constraints that make empirical science possible and allow it to achieve its success, the way it delimits its terms, targets, and possible outcomes, also keep it discretely separated from metaphysics.[9]

How Should a Theologian Identify the World God Produces?

My point above is not that we should avoid nonscientific explanations of the success of science. Rather we should recognize that, *pace* McGrath and others, realism is neither required nor warranted by science. There are alternative explanations of its success and choosing among them will involve intellectual and pragmatic considerations that go beyond science. I believe a science-engaged theology of divine action cannot avoid the task of selecting a metaphysical foundations for science that both explains its success and coheres with Church doctrine.

To do this, a theologian must first decide how to identify the product of creation that the Bible calls *earth*, the lesser of the two unequal halves of "the heavens and the earth"(Gen 1:1). Suppose we decide that "earth" corresponds not just to soil or our planet but to the total physical world. Then, I suggest, we still have a choice to make between the observable physical world and the unobservable. We can adopt a useful piece of terminology and think of the observable physical world as the "manifest image."[10] This is the world of nature as it manifests itself within actual and potential human sensory experience, the world of stars and sky, rivers, trees, and soil, all things recounted in the biblical narrative of earth's creation, as well as the events of human history. The manifest image is contrasted with the "scientific image," which is what results from the reification of some of the theoretical terms for unobservables, used in scientific theories about nature. This is the world of atoms, waves, particles, forces, fields, light, energy, black holes, and the big bang.[11] As theologians we certainly want to say that the physical world produced in creation includes the manifest image and is objective. But as I have suggested, we need to be very cautious in how we account for the manifest image's objectivity. If we give the physical realist's account, we are going beyond the practice of science to make a metaphysical claim: we are saying either that the manifest image is wholly mind-independent and ontologically basic in itself as, for instance, on some contemporary hylomorphic and strong emergentist accounts[12]; or that the manifest image is the epiphenomenal "by product" of some fundamental level within the scientific image that *is* mind-independent and ontologically basic.[13]

To understand why neither of these options is satisfactory it will help to introduce the following distinctions. In general terms, there are three different kinds of existence claim we can make about the ontological status of certain classes of items:

Three Kinds of Existence Claim
nihilism—deny *F*s exist; *reductivism*—*F*s exist derivatively; *realism*—*F*s exist primitively

A reductivist about the existence of *F*s will say that *Fs* exist but only because their existence is mediated by the existence of something else. This something else may itself exist derivatively or it may be primitive. When something exists derivatively, the mediation of its existence may be more or less transparent to us. Again quite generally, there are four significant ways in which the mediation of something's existence can be discovered, resulting in four different reduction strategies in which the discovered mediation is progressively less transparent.

Four Kinds of Reduction

analytic reduction	redefine Fs;
nomic reduction	find laws for Fs;[14]
logical supervenience	find conditions that are (prospectively) conceptually sufficient for instances of F;
natural supervenience	find conditions that are (retrospectively) causally sufficient for instances of F.

In each case, one posits a reduction relation between the things to be reduced and some "lower level" ontological stratum. Notice that supervenience relations are only posited between instances rather than kinds. So a particular event *E* supervenes on a particular event *B* just in case, necessarily, there can be a change in *E* only if there is a change in *B* (where the modality in question is either logical or natural necessity). For this reason, supervenience is not always regarded as a form of reduction because the supervening stratum is allowed to have its own autonomous kinds, which may thus possess an ineliminable explanatory significance.[15] For example, most twentieth-century philosophy of mind concentrated on existence claims about the realm of the mental and tried to show that the mental was reducible to the physical in one of the four ways above.[16] In the absence of a plausible strategy for reducing certain kinds of mental states to certain kinds of physical states, so-called *nonreductive physicalist* views have claimed instead that particular mental events either logically or naturally supervene on underlying physical events and so are ontologically mediated by them, with mental predicates nonetheless enjoying an explanatory autonomy. Many recent divine action proposals have sought to make use of these explanatorily autonomous or *emergent* properties either as causal joints (where God can exert "downward" causal influence) or as an updated conception of Aristotelian forms.[17]

However, we can turn the tables and ask existence questions about the physical realm. When we do, we are invited to consider a different way of conceiving of the relation between the manifest and scientific images. All

extant divine action proposals hold that some physical *F*s form an ontologically primitive core within the physical world, yielding:

> Physical Realism
> The physical world is (at least partially) mind-independent and ontologically primitive.[18]

The standard version is to identify the ontologically primitive core of the physical world with some part of the scientific image, like space, time, matter, and "fundamental forces," with everything else in the physical world having its existence mediated by these primitives, or facts about them, in one of the four ways above.

By contrast, the idealist thesis of phenomenalism denies both conjuncts of the physical realist's claim.[19]

> Phenomenalism
> The physical world is exhaustively ontologically mediated by mental facts, including facts about the organization of human sensory experience and human conceptual capacities.

Physical realism imagines that conscious minds are either nothing more than brains or that they somehow emerge from, and so supervene on, nonconscious matter when organized at a suitable level of complexity. Phenomenalism takes the realist's supervenience relation and turns it on its head. According to the phenomenalist, it is the structure and content of the physical world that supervenes on facts about minds, how they are appeared to, and how they interpret those appearances.

To better understand the kind of reductivist existence claim about physical *F*s that phenomenalism makes, consider Howard Robinson's (2016) distinction between the realist and the conceptualist interpretation (CI) of the existence question.[20]

> (CI) We have the concept "*F*." Is the world so organized that it satisfies this concept in the way this is necessary for the standard or paradigm uses of that concept?
> (RI) Forget about us and our concepts. If there were no conceptualizers around (putting God or divine minds aside) would there be *F*s?

It is consistent with the CI of the existence question about physical *F*s for the phenomenalist to entertain any one of the reduction strategies listed above. Recognizing the availability of the CI helps to bring out the fundamental role played by facts about human receptive capacities, both perceptual and cognitive, and human aims and interests, not only in determining the content of the special sciences but in fixing the identities of even the basic physical entities. In other words, it is not just that pragmatic concerns are a factor in the way scientific theories are shaped; but more incisively

that human receptive capacities set an existential bound on the identities and individuation of natural phenomena.[21]

This radical claim can be reached as a conclusion from different arguments, and Robinson's recent monograph explores two mutually supportive but different routes. One involves the recognition that our very notion of the physical as something qualitative—that is, more than merely mathematical or formal—is conceptually dependent on the qualitative features of human experience. We usually assume that because the empirical sciences proceed successfully enough in describing the causal structure of the nonconscious world, that the same empirical methods will eventually succeed in explaining the nature of conscious mentality. Because it tends to be assumed that physical realism is the best way of accounting for the success of science, we also tend to assume that some category of the physical is the right stratum to hold fixed while looking for a reduction strategy for consciousness.

However, this way of conceiving of the dialectical situation is a mistake. We necessarily rely on mind-dependent sensible qualities drawn from the manifest image of the world in order to conceive of it as concretely physical, as the kind of thing we could experience. In other words, the phenomenalist claims that:

The Argument from the Concreteness of the Physical

(i) what gives concrete, qualitative content to our conception of the physical is sensible qualities; and

(ii) sensible qualities are mind-dependent; they are uniquely revealed in conscious experience.

Therefore,

(iii) we have no conception of the physical as something qualitative except as a possible object of experience.

So physical realism, which would insist on something physical being both mind-independent and ontologically primitive, is not only false but in fact conceptually incoherent. It is sensible qualities, which are but the objective content of what it is like for a subject to experience them, that concretize the physical and make it into something qualitative and not just formally abstract. From the conclusion (iii) it follows immediately that mind-dependent sensible qualities are necessary for any qualitative conception of the physical. Strictly speaking this conclusion is not logically equivalent to the thesis of phenomenalism (which involves the notion of ontological mediation); but the conclusion does entail the denial of both conjuncts of physical realism and gives support to phenomenalism in a conspicuously strong way.

Whereas the above argument focuses on the contribution of mind-dependent sensible qualities to the empirical content of the sciences, there

is an alternative route to phenomenalism that is more focused on the contributions of our concepts, interests, and perspective. This second route is not quite so concise and is broken into two stages sketched below.

A Two-Stage Argument for Phenomenalism (Or Conceptualism about Everything Physical)

Stage 1: An argument for dualism (minds are ontologically primitive):

(i′) The subjects of the special sciences require interpretation.
(ii′) Interpretation requires human minds as interpreter.
(iii′) Therefore, there are human minds.

The support for (i) comes from recognizing that the special sciences, unlike physics and chemistry, are selective and involve Gestalt concepts that are not the sort of thing that can be studied in physics and chemistry.[22] These concepts are teleological and are selected by the grain of human sense perception and human interest. Consider how the identities of the following objects are fixed:

London	Buildings? Geography? People? Government?…
House	An artifact but also a strange kind of abstract-concrete container;
Book	An artifact but also an even stranger kind of abstract-concrete chimera;
Mountain	A natural object whose identity is determined by extrinsic relations;
River	A natural object whose identity conditions are approximately psychic;
Tree	A natural object whose identity conditions are approximately psychic.

This list of items contains names of both artifacts and natural objects. The named items all have identities that are vague, teleological, and possess Gestalt qualities. The identities of these items change in ways that are sensitive both to extrinsic relations and our perspective and interests. Technical terms of art, where a precise definition is stipulated, are a limiting case in that they are *entirely* determined by our rational intentions and can be quite arbitrary. By contrast, the identities of artifacts and natural objects are fixed in ways that are effortlessly understood, yet dependent on factors that are rich, complex, and arbitrary but to a more limited degree. None of the common names above can be given a nomic or analytic reduction into the terms of physics or any other discourse; their meanings are conceptually autonomous in that sense. At the same time there is a clear

sense that, when regarded as bare *concreta*, as spatiotemporally determinate things, they supervene on the stratum of physics.[23]

Another thing one notices about these identities is that they are trichotomously regarded either as crudely mechanical, abstractly functional, or as possessing properties of psychic continuity borrowed from our notion of human persons. So, for instance, a house can be regarded concretely as a spatial arrangement of stones, more abstractly but still concretely as a kind of container, and finally in a wholly abstract way as a *home* (which is then psychically parasitic on the person whose home it is). This is telling. It points to the fact that personal identity is the standard for individualization.[24] Personal identity, unlike, the looser forms of unity and persistence we attribute to items in the world, does not admit of vagueness, indeterminacy, or dismissal in favor of some more refined notion. Now when we consider things studied in the special sciences, we seem to have the option of identifying them from teleological perspectives that are self-consciously partial and so dismissible when our interests shift. The content of earth sciences such as geology, hydrology, and meteorology arises because we are selectively interested in the habitability of the earth's surface. From an impartial or observer-neutral perspective, these phenomena are but arbitrary spatiotemporal sections of the total flow of physical events within the universe. To segregate certain collections of atoms, to mark off certain beginnings and ends of their collective movements, and furthermore to regard certain classes of collective movements as relevantly similar, as those of, say, hurricanes, earthquakes, or viral epidemics is to adopt a special-interest interpretive perspective. The same is true of the medical sciences and biology generally insofar as it makes us of functional explanations. Even these brief considerations strongly suggest that the subjects of the special sciences require interpretation, as stated in (i'). I shall not take the time to defend (ii'), but it is difficult to conceive of how interpretation is possible without there being rational agents who perform interpretations, agents who are the conscious subjects whose perspectives and acts of conceptualizing are what proliferate the sciences.[25] Notice that the interpreting mind cannot itself be the product of interpretation or the subject of a merely empirical psychology. This would lead to a vicious circle. Minds are invoked exactly to answer the question of what agency generates the many interpretations unique to the human perspective.[26]

With the argument for dualism in place, Robinson's final step to a full-blown phenomenalism involves recognizing the inadequacy of a bare spatiotemporal description for the purpose of individuation, which is what would be required if there were physical simples.[27] A little more formally we have:

Stage 2: An argument against realism about physical simples:

(i) Physical simples are merely spatiotemporally individuated.

(ii) Entities that are merely spatiotemporally individuated cannot sustain counterfactuals of origin; so their identities are ineliminably vague.

(iii) Entities that exist in the realist sense cannot be vague in this way.

(iv) Therefore, there are no physical simples (and hence no physical entities in the realist sense).[28]

Robinson's idea is that if we imagine physical simples, whatever they happen to be—say bare Newtonian atoms[29]—there can be nothing more to how we individuate them empirically then their spatiotemporal trajectories. For suppose we ask a question like, "If instead of this atom coming into existence where it did, an atom had come into existence 2 meters to the left, would it be the same atom?" There is no way to answer the question because all empirical criteria are exhausted by the description of the atom's spatiotemporal trajectory.[30] But if atoms exist in the realist sense this question should have a determinate answer. The realist has the option to say that despite all appearances, the atom in fact has some mysterious individuality, some hidden *haecaeitas*, that would give a determinate answer for each version of the question.[31] But this would mean that our empirical criteria for identifying and individuating atoms are radically at odds with their true nature. Such a proposition at the very least threatens either the physicality of the simple or our claim to knowledge of it.

Another way of arriving at phenomenalism focuses on our criteria for the identification of physical space. It is similar to the Argument from Concreteness and focuses on the essential mind-dependence of physical spatial qualities and hence of physical space itself. Space is defined by relations of distance and direction. The only way to give empirical significance to these bare, mathematical relations, however ultimately and indirectly, is in egocentric terms. If distance is to be the relation that characterizes the physical space our bodies move in, it must be unitized in human-relative terms, terms that must correspond to a quality of distance as it manifests itself, *uniquely*, within sensory consciousness. Similarly, for direction, orientation, and chirality. Unless a space is mapped into the coordinates of our perceptually accessible public space, and so into our various intersubjectively harmonized egocentric phenomenal spaces, we cannot interpret it as having empirical significance. An abstract geometric space has different properties from physical space, not the least of which are modal; and so physical space cannot be identified with any geometric space. But if space is thus mind-dependent, so too must be physical objects. For if they are to be anything concrete, physical objects must be space-occupiers and individuated by the regions of space they occupy over time.

In all cases, the arguments against realism focus on the incongruence between the qualitative richness, the ascribed teleology, and the ontological vagueness and indeterminacy of the manifest image, on the one hand, and the bare mathematical structure of the scientific image on the other.

Realism undermines our claims to scientific knowledge of the physical world insofar as it would identify it with the reification of the scientific image. The physical world as actually experienced consists of facts and entities, which (i) have identities that are vague, indeterminate, and which can be regarded from perspectives and interests that cannot be made logically consistent with each other (as they would have to be, realistically construed), and (ii) are conceptually dependent on mind-dependent sensible qualities.

Idealist Conservation and Government

Even if physical realism is rejected, how is the idealist theologian to make good on the phenomenalist proposal and account for the course of nature as something under divine control? The phenomenalist claims that physical facts supervene on facts about minds. So obviously a phenomenalist metaphysics for divine action requires a view of minds as ontologically basic subjects. But if the arguments above are accepted, then the practice of the sciences requires this commitment in any case, to account for the generative source of perspectives and interpretations. Once accepted, this metaphysics affords a strategy for constructing a variety of views of general and special divine action in nature, including crucially the general action of establishing human embodiment.

The phenomenalist wishes to account for items in the physical world as the logical product of a series of constructive syntheses that occur within the ordinary course of conscious experience. Most of these are innate, reflexive, and not introspectable. A full elaboration is beyond my present scope, so I will keep to a few programmatic remarks.[32]

The phenomenalist's account of the logical construction of the physical world is not intended to be a genetic or developmental account within empirical psychology; the idea rather is to provide a coherent description from a transcendent perspective of how physical items can feature within our empirical perspective as the things we take them to be in our ordinary and scientific physical theories. So long as the phenomenalist can do this by appealing only to conceptual resources that are drawn exclusively from the mental realm, she will have satisfied the demand of coherence. The key insight that the phenomenalist will exploit is that there is a rich set of organizational regularities, a stability of qualitative pattern within and between our sensory episodes. These sensory regularities, together with a stock of innate recognitional capacities that they prompt, are sufficient for grounding the themes and regularities that feature in our common physical theory—that our bodies are mobile occupants in a unified public space of other 3-D persistent objects—and subsequently in the more refined descriptions and higher order interpretations of scientific theories.

The Logical Construction of the Physical from the Mental

Sensing and recognizing → {common sense theories → scientific theories}
(mental) [logically produces] (physical)

Per idealism, Gods creates and conserves the physical world by logically constructing it from the following prephysical entities and facts:

(1) an ontology of immaterial mental subjects endowed with capacities for receiving sensations and conceptually interpreting them;

(2) an ontology of repeatable sensory types that capture the qualitative character of sensation in all its rich Gestalt organization (*qualia*);

(3) a divinely instituted system of laws that constrains the causal and temporal distribution of qualia over minds in a way that guarantees global intersubjective harmony; that is, that the qualitative patterns are "world-suggestive."

The laws mentioned in (3) would be nonphysical in that they would only refer to immaterial subjects, their volitions, and the mental causation of their sensations. But because they would precondition the regularities found within sensory experience and the conceptualization of these regularities as physical, the laws in (3) are appropriately regarded as *prephysical*.[33] According to idealism, what God must do to produce the physical world is create human minds with certain innate concepts for interpreting sensations and decree a system of laws that causally constrains the course of possible human sensations in relation to human volition. In this way the physical world would be logically constructed from the regularities of sensory experience, something whose qualitative content is drawn wholly from the manifest image that is immanent within experience. As with familiar objects of the manifest image, an idealist is free to say that objects studied by science do exist, but in the conceptualist sense. This, it seems to me, is all that need be and all that should be accepted when accepting the success of science.

On the phenomenalist view, God's general direct action in providentially governing the physical world consists in sustaining the causal organization of human sensory experience. So long as God does this through a system of a laws guaranteeing the course of possible human sensations, this action is sufficient to guarantee that objects in nature have the dispositions they are ordinarily taken to have and that there are various kinds of physical *F*s in nature. The laws would be the truthmakers for counterfactual statements, generalizations, and causal inferences that we might make about physical *F*s. Notice that such laws would not be physical laws of nature as typically conceived. In fact they would be *prephysical* laws, or laws purely mental in character that sustain the world-suggestive patterns of sensation. Generally, then, God would act in, for, and through nature by the way God causally constrains human experience. The idealist clearly distinguishes between the laws discovered within the physical world

and the prephysical laws that sustain it. There is a clear sense, then, in which physical laws would hold with a force of necessity (as any law must); but it would be a necessity that is itself contingent not only on divine intention but on the human receptive capacity, sensory, and cognitive. This allows the idealist to explain at once why it is not only that we can imagine the miraculous suspension of physical laws but that we actually have experienced miracles historically and may rationally hope to do so in the future. Other proposals that regard the divine government of nature as total and mediated through laws have already sought to regard physical laws as flexible, open-ended, or encompassed within the greater divine economy.[34] By rejecting physical realism, the idealist can do more than pay lip service to this theological commitment; she can show why any apparent incompatibility between divine governing laws and physical laws is dissolved.[35]

Theologians need a theistic account of the laws of nature that allows for a genuine distinction between God's general and special divine action. The idealist's prephysical nomological system can do this exactly because it is prephysical. It need not take the necessity implied by physical laws as ultimate, but can regard it as a genuine contingent necessity that can be suspended, overridden, or simply subsumed into a more ultimate prephysical law.

Embodiment and the Subjects of the Sciences

Where, then, does this leave the status of certain physical objects, like the brain and the rest of the body, which seem to have an especially intimate connection with our creaturely lives? Phenomenalism about the body and the brain becomes a special case of phenomenalism about physical things generally. Phenomenalism is conceptualist about the nature of kinds and the individuation of things, maintaining that physical things are individuated by sortal concepts which human beings deploy in response to observable qualities. There will be different options depending on the exact theory of concept possession and individuation, but all will agree that concepts involve a recognitional capacity. At the most basic level these will be deployed in response to phenomenal qualities, but also to complexes of other physical concepts. These concepts will be embedded in increasingly refined scientific theories, but they will remain structurally dependent on the qualitative content of sense perception, its basic organizational features, and our capacity to be affected by these features in ways that make a difference to our imaginative projections and judgments. The modalities of human perception and our endowed rational sensitivities are thus the fixed point around which the conceptual apparatus of science orbits. The concepts used in brain science, for example, will be structurally related if not outright equipollent with concepts used in physics, chemistry,

molecular biology, and various branches of physiology. Yet, they may also possess a certain indispensability or even resistance to theoretical unification. Of course the situation is dynamic and changes over time.

The general picture of the explanatory relations obtaining between the transcendent perspective of metaphysics, in which the thesis of phenomenalism is articulated, and the empirical perspective in which natural scientific theories are articulated can be captured by a principle that Bishop Berkeley employed crucially in the defense of his own version of phenomenalism. The principle is what I, modifying a name coined by Bertil Belfrage, call the Principle of Analogous Fields of Discourse. The idea is that strictly within and relative to the human empirical viewpoint (which, transcendentally, we say is created by some prephysical nomological organization of our sensations), scientific theories enjoy a certain conceptual autonomy. This would apply to neuroscience in particular. The idea is that a science practitioner, say a neuroscientist, is free to employ descriptions that presuppose or take for granted the various phenomenological syntheses that logically build up the physical world at our viewpoint. The working scientist can make idealizations, use metaphors and mathematical models, propose new theoretical terms and mechanisms, and invoke causal relations. But because this discursive framework has all the while suppressed its phenomenological preconditions, however justifiably, its apparatus then cannot be exported directly to the discursive framework of metaphysics. The principle, then, is a slightly more sophisticated version of Berkeley's maxim to think with the learned, speak with the vulgar, adding the scientific as one more way to speak.

The Principle of Analogous Fields of Discourse (PAFD)

> The thing is explained physically, not by assigning the really acting and immaterial cause, but by demonstrating its connexion with a mechanical principle…
> A body in motion is dashed against another at rest; but we use an active mode of expression, saying, that the one impels the other, *and not improperly in mechanics, where the mathematical rather than the actual causes of things are considered*.

For Berkeley, there are three internally nested discursive frameworks that we might adopt, metaphysics as the outermost, ordinary folk discourse at the center, and scientific discourse in the middle. They are thought of as analogous in their relations because of the way they semantically delimit each other, particularly in respect of the notion of *cause*.

Three Kinds of Cause

A. Common sense physical causes (the mallet, *A*, broke the almond, *B*.)
B. Mechanical principles ($\mathbf{F}_A = -\mathbf{F}_B$)
C. Real causes (I exercised my volition; transcendent sources caused certain sensations).

According to the PAFD, one finds that the pair of explanatory terms *cause* /*effect* are related across the internal nesting structure of the discursive fields in such a way that the *cause* of the lower or more restricted field becomes the effect of the one above it. Descriptively, the regularity of succession in experience prompts us to say that when one object collides into another the first causes the motion of the second ("the mallet broke the almond"). But in the theoretical science of mechanics we say that both motions are effects of a relevant mechanical principle (Newton's third law of motion—opposing forces are equal). Finally in metaphysics we recognize that even fundamental mechanical principles are but a descriptive regularity whose applicability to experience calls for explanation, and must be the effect of some transcendent or prephysical agency (from the phenomenalist's perspective, the applicability will be a higher order organizational effect of a prephysical constraint on human sensation within the context of our conceptual capacities).

The PAFD makes sense of our ordinary practice of interpreting a psychological subject's relation to an organismic body as one of two-way causal dependence. The conditions of the body affect our sensations, and our desires and intentions affect our body. According to the principle, this can be true if interpreted as a statement made within the empirical discursive frameworks; at the same time, it is a truth that is preconditioned by the truth of a thesis of metaphysics, framed within the transcendent perspective. If phenomenalism is true, then the principle allows neuroscientific theory to invoke causal relations in the conceptualist sense and so in particular to talk of certain psychophysical relations as genuinely causal. But the principle prohibits such statements from being interpreted realistically, and so ensuring their compatibility with the phenomenalist corollary that the only ontologically primitive causes are non-physical.

The PAFD, unlike the Thomist's realist construal of causal activity in nature, can make sense of how natural phenomena can be causal in a genuinely derivative sense that does not compete with the causal power of rational agents. Taken in the realist sense, natural phenomena either causally exclude each other and human mental activity or lack causal agency altogether. This is because realism requires that some entities and facts of the physical world are ontologically primitive and mind-independent. This means in turn that if the category of the physical is to have its integrity and closure, all other (ontologically derivative) physical phenomena must supervene on the primitive physical base. There may be sciences that selectively attribute autonomous explanatory features to different domains, but realism about these features requires one to make a choice between regarding them as strongly reducible (in the nomic or analytic sense) or strongly emergent.[37] Following from Robinson's argument for dualism, any realist middle position to the effect that these features are weakly emergent cannot explain why they should supervene on

the base and yet fail to be nomically reducible to it. Even worse, realism about the explanatorily significant features studied in the sciences requires that the classical logic of identity strictly applies to them. But given the indiscernibility of identicals and the vagueness and the plurality of empirically discernible features which physical objects can be regarded as having, it would be difficult to escape the conclusion that in each different discursive framework there either are no objects or the empirical criteria we use to identify them are false.[38] Either way, our claim to possessing scientific knowledge would be undermined. A plausible alternative is to deny physical realism and to regard the human perspective, with its concepts and interests, as playing an ontologically mediating role in the construction of identities, and in fact partly through the feature attributions made in the sciences. Without regarding such attributions as so many different ways of conceptualizing an underlying base, it is difficult to make sense of their mutual inconsistency and incompleteness. Taken in the conceptualist sense, however, there are no such formal requirements, only the more modest requirements that science actually imposes: harmonization and empirical adequacy.

Returning to the issue of the phenomenalist interpretation of the brain sciences, we have another concrete example of the way the PAFD relates theology and metaphysics to the natural sciences. In the transcendent perspective we can say that minds are ontologically primitive and brains (and bodies generally) are conceptually constructed. But what is more, we can say that the psychophysical correlations discovered in the empirical perspective of neuropsychology can be interpreted as specifications of the functional links that are appropriate for the kind of psychophysical arrangement that counts as human embodiment (rather than what counts as human mentality). While such appropriateness will be guided by norms of epistemic and rational efficiency, and so supplied externally, neuropsychology can help us to target and describe candidates that meet these norms. The psychophysical correlations discovered in neuroscientific fields help us to understand the nature of the two-way functional dependence between the mental subject and the organism that belongs to it as the subject's body. This gives the idealist a positive research program in which the various sciences of the human brain and organism, together with an autonomous psychology, are recruited not to explain the nature or origins of mentality but to understand the functional nature of embodiment. Once we accept an immaterialist anthropology and reject physical realism so that it no longer guides our view of how scientific theorizing should be interpreted generally, then we become free to evaluate the contributions of neuroscience in fruitful ways.[39]

The PAFD makes clear the sense in which a theology of nature may expect to achieve *consonance* with science but not *traction* if traction requires a leveling and collation of the discursive frameworks. On an idealist

view natural phenomena are effects of the causal interaction among spirits, regarded from the transcendent or world-external perspective proper to theology and metaphysics. From the mundane or world-internal perspective of how things are at the human observational viewpoint, the same natural phenomena may be regarded as causes. There is a semantic delimiting of the empirical perspective by the transcendent that enables descriptions of the causal structure among natural phenomena in the derivative or conceptualist sense. This same semantic delimiting is what prevents those descriptions from being reified into trans-empirical causes in the primary sense. This means that, contra the physicalist, to act in nature God does not need to act "bottom up," as it is sometimes put, by acting on what, within the world-internal empirical perspective is regarded as the subvening base of physics. But, contra hylomorphism and emergentism, neither does God need to act on the various supervening properties of the special sciences. Theologically, divine providential action is total and should not be regarded as divided in ways that would reflect the structural relations among the various sciences. God would not need first to act on the objects of physics nor separately on the various weakly emergent domains of study that have their own proper explanatory resources. On the idealist view, God's action in the physical world is total and undivided partly because it is ontologically mediated by a prephysical system of nomological constraints on human minds. With this system of control in place, then, together with the endowment of human creatures with a stock of innate conceptual capacities, there is nothing more God need do to ensure that a certain kind of world is logically constructed at the human empirical viewpoint. The sciences find their place in this scheme as rational practices that aim to characterize just what kind of world it is that is thus transcendently produced and governed, thematizing how things are from our observational viewpoint. The transcendent factors that enable science's epistemic success also keep it modestly limited to what is conditional upon and relative to the prephysical being of that very viewpoint.

Conclusion

Theologians have gotten themselves into a conundrum over divine action. Recognizing the deism of the first-wave causal joint proposals they have insisted on divine immanence and compatibilist double agency in nature. But, still presuming the truth of physical realism, they have struggled to explicate *how* it could be that God is both the ground of nature's activity and a transcendent special actor.

I agree with physicalists like Jaegwon Kim (1999), Sarah Lane Ritchie (2019), and others that nonreductive physicalism is an untenable middle ground between a strict physicalism and dualism. But my grounds for doing so—and so for choosing dualism over physicalism—have to do

with what I see as the reasons *why* various sciences are not nomologically reducible to physics. Nonbasic natural phenomena require conceptual interpretation and transposable gestalten. Rather than being constituted by fixed, ontologically primitive forms that inhere in mind-external substances, identities for things in ordinary discourse, and all nonbasic scientific discourse, are relative to interests, perceptual perspective, and teleological ascriptions. To account for such a plurality of nonbasic sciences we must accept that there are basic mental subjects with concepts, interests, and perspectives. Without accepting these, we would have no account of what generates the flexible identities of natural and social phenomena. But if human conceptualizers are what generate the subjects of the nonbasic sciences, then even basic scientific knowledge is conceptually dependent on the qualities that feature in sensory consciousness. This is because our concepts of the physical are ways of interpreting our sensory experience. Without being anchored in mind-dependent experience, they would lack qualitative content and so would fail to be concepts of the physical as opposed to the merely formal or mathematical. Physical concepts that are more than merely formal are logical constructions of qualities and relations found within and between conscious experiences. On the idealist view, it is the wholly objective but prephysical causal structure of experience, together with our native concepts and interests, that logically produces the phenomena of nature, as we actually experience and categorize them. Natural phenomena are thus created and governed through a literal divine discourse addressed to the human mind, in which sensations become signs. The phenomena of nature may be nomologically established before man is created. They are created, that is, once God has provided the ordinances for their potential execution. But they gain their signification, as phenomena for us, when Adam names them.

The idealist proposal for divine action, by its construction, re-imagines the relation between science and theology. The outcome enriches Barbour (1989)'s fourfold typology by adding to it something very similar to the premodern model of subalternation.[40] On this model, knowledge of nature gained through the sciences does not replace, eliminate, or reduce our prescientific knowledge of nature, the human person, and divinity. Rather scientific knowledge of nature is conditioned by that prescientific knowledge so that nature may be understood to function symbolically within a logically prior divine economy centered on the divine-human relationship.[41] As the realm of the observable, nature could be understood as a divine system of signs, and divine action in nature could be understood to be directly communicative. This would allow nature to be fully objective in the sense of being public, persistent, intersubjectively harmonious, and regulatively grounded in something over and above human volition, but without being metaphysically basic or logically mind-independent, as it would be under the views of realism and naturalism.

Notes

1. See Wildman 2004 for a report on the details of the project.
2. See, for example, Saunders 2002 and Smedes 2008.
3. See, for example, McGrath 2004, Peacocke 1979, and Torrance 1969.
4. See, for example, Clayton 2000, Cooper 2006, and Clayton and Davies 2006. See also Knight 2004, 48–61.
5. I think this is true of the science and theology scholars named above.
6. For example, in McGrath 2004, Polkinghorne 1994, and Peacocke 1979.
7. Torrance 1969, xiii.
8. So physical realism is a version of what Kant called *transcendental realism*, to which his own *transcendental idealism* was explicitly formulated as a rejection in the first *Critique* (A369, A491/B518-19). Kantian idealism therefore counts as a version of what I call idealism below.
9. For this reason it is a mistake to argue for realism on the grounds that, to use Alister McGrath's phrase, "realism is the working philosophy of the natural sciences" (McGrath 2004, 125–129). The question of realism is not to be decided by the statistical study of the private opinion of working scientists. Scientists are not typically trained at a postgraduate level in philosophy of science, epistemology, and metaphysics, which is where one would locate the question of realism. Furthermore, when it comes to assessing the cognitive aims of science—say, ultimate truth versus empirical adequacy—we must distinguish the cognitive aims of a local research program from the personal aims of its practitioners. The latter may include a variety of non-cognitive but pragmatic aims, such as obtaining notoriety and future funding, as well as instrumental cognitive aims, all of which should be distinguished from the non-personal aims of the project or practice itself, which are determined by norms, principles, protocols, methodologies, definitions, and so forth. For all we know it may be that scientists who are personally committed to realism turn out to be better able to contribute to their project's more modest goal of empirical adequacy within some domain of phenomena, perhaps because they become more motivated and creative; yet this would give no evidentiary support to realism. For an explanation and defense of empirical adequacy as the aim of scientific practice see van Fraassen (1980).
10. Sellars 1963.
11. Notice that this does not exactly correspond to the distinction between the macro-level world and the micro-level world.
12. See, for example, Jaworski (2011), Dodds (2012), and Clayton (2006), though Clayton's various formulations of emergence seem to vacillate between its weak and strong forms. That is, it is unclear whether, in the terms below, he is committed to the merely natural supervenience (and hence strong emergence) of the mental from the physical, or in fact to logical supervenience.
13. As on the weak emergentist/nonreductive physicalist account of Nancey Murphy (2008; 2010).
14. Examples of successful nomic reduction are the unification of the theories of electricity and magnetism via the Lorentz force law and Maxwell's equations, and the integration of chemistry and quantum physics in Linus Pauling's quantum mechanical description of the chemical bond.
15. Such explanatory or nomological pluralism has become a prominent theme in current philosophy of science following Cartwright (1999) and the push to relocalize the study of science. See, for example, Huggett (2000) and Asay (2019).
16. In the analytic behaviorism of Gilbert Ryle (1963), psychological predicates were to be defined in terms of behavior, and in the analytic physicalism of the logical empiricists Carl Hempel (1980) and Rudolf Carnap (1934), psychological predicates were to be translated into "quantitatively determinate" properties of positions in space and time.
17. For example, Clayton (2004; 2006) and Dodds (2012), respectively.
18. Note that the mind-independence at issue here is independence of human minds or facts about them, rather than independence of a divine mind; physical realism need not exclude theism.
19. In what follows I often use 'idealism' and 'phenomenalism' casually as synonyms. Technically, by 'idealism' I mean merely the denial of both conjuncts of the thesis of physical realism and by 'phenomenalism' I mean the further positive thesis stated here. So phenomenalism is one version of idealism but not entailed by it.

For further clarification by contrast, one could identify the thesis of *mental realism* as a currently and historically significant third position: the physical world is (at least partially) mind-dependent and ontologically primitive (this follows the definitional scheme in Foster 1982, 3–16). Mental realism thus forms a kind of halfway house between physical realism and idealism, insisting that there is some core of the physical world that is not reducible to anything else but whose underlying nature turns out to be mental in character, whether intellectual, affective/volitional, or sensory qualitative. Contemporary panpsychism (e.g., Strawson 2006) would count as a version of mental realism.

20. Robinson (2016, 178).

21. Notice how this claim differs from a social constructivism. The phenomenalist argues not so much that physical predicates are the product of social negotiation, but that a necessary contribution is made to physical identities by our innate concepts and sensory modalities.

22. The psychologist Christian Ehrenfels introduced the term *gestaltqualitäten* for the complex, relational qualities in perceptual experience that have no constant correlation with any physical marker or even any other phenomenal marker. A single shape, for example, can be formed by the boundaries of any colored surface, with any texture, containing anything or nothing at all, and be located anywhere; just as a melody can be composed of an endless array of tones and remains invariant under a change of key. Such qualities, which are ubiquitous in human perception, are thus "transposable." The fact that there is no finite equivalence class of physicals values that correlate with our experience of transposable gestalten means that they must be studied as *sui generis* but also manifestly mind-dependent phenomenal qualities. Köhler (1947, especially p. 118), is a classic source for further reading.

23. In other words, none of the items are the sort of thing that could be studied by physics, which could only describe them as collections of atoms arranged in certain ways, yet there is a clear sense in which they supervene on their material constituents.

24. This is the basis of faery stories, like *Sylvester and the Magic Pebble*, where a donkey can be turned into a rock and back to a donkey and remain a 'person' all along. Children instantly grasp these psychic identity conditions with no explanation needed.

25. Robinson (2016, Ch.13) contains a discussion of this, largely by way of a *reductio* argument against Daniel Dennett's concession that the "intentional stance" is ineliminable but also (somehow) compatible with a behavioristic naturalism about the mind.

26. Though desirable, considerations of space preclude a fuller treatment of the idealist's case for the self as a basic mental subject. The reader is referred to the argument in Madell (1981), which is complementary to the one offered here, and the discussion in Robinson (2016, Ch. 15).

27. This is an old thesis that will be familiar to readers of the Leibniz-Clarke correspondence. See Alexander (1956).

28. The idealist thus agrees with the panpsychist that the only real individuals are psychic individuals. But the idealist is more epistemically modest, claiming that the only beings we know to be in included in this category are human mental subjects.

29. Obviously the elementary particles of the Standard Model are more plausible candidates for being physical simples. But speaking of atoms is more expedient and this in no way effects the argument.

30. We may have "localist" intuitions that something that came into existence 1 millimeter to the right would be the same atom and 1 light-year away would be a different atom; but that means there will be vague cases somewhere in between. Robinson's point is that realism is intolerant of such vagueness. See Chapter 12, especially pp. 205-9. His claim relies on the treatment of the logical of identity in Wiggins (2001), where it is argued that the classical logic of strict identity (with Leibniz's Law) must apply to any formal system whose entities are represented as ontologically primitive.

31. For a discussion of this option see the "Introduction" to Castellani (1998) and Paul Teller's contribution to that volume.

32. See Chapters VII and VIII of Epsen (2020). The body is distinguished in these syntheses by its centrality in the construction of egocentric phenomenal space, as a qualitatively stable theme that has an immediate connection with the subject's will in a way other themes do not.

33. These are what Bishop Berkeley called the "Laws of Nature" (PHK 30).

34. See, for example, Yong (2009), Smith (2010), and Knight (2004).

35. Following the legal simile, divine laws may be such as to include the provisions for the sustention of certain patterns of human sensation—and hence what we then call physical laws—but also to include a kind of codicil for God to suspend or alter those provisions in accordance with God's broader economic purpose, resulting in what we call miracles. By distinguishing between transcendent and empirical laws, the idealist can explain why there are both genuine physical laws and genuine miracles with no inconsistency and no threat to the simplicity of the divine act that is at once creative and redemptive.

36. Berkeley, *De Motu* 69, 70, emphasis is mine.

37. Notice that this would lead to radical ontological proliferation from beyond dualism or trialism to an *n*-ism for each of the *n* nonreducible sciences.

38. A full defense of the claim that there cannot be things in the realist sense with genuinely vague identities would take us far afield. But see Evans (1978) for a concise (in fact one page!) argument that depends only on the assumption of Leibniz's Law (the Indiscernibility of Identicals).

39. Perhaps surprisingly, we also become free to recycle what would otherwise be defunct theories in the philosophy of mind. For example, functionalism fails as theory of what it is to possess a mind; but it is a fruitful theory of what it is to possess a body. Guided by a functionalist philosophy of embodiment, we can interpret neuroscientific facts as providing important details about what it is to be embodied, about the ways in which our (prephysical) mental biographies can undergo changes in response to changes in the (conceptualized) environment. Functionalism and the type-identity thesis fail because there is no way conceptually to capture the psychological character of mental episodes through a specification of their functional links in either computational or physiological terms. But once we accept minds and their episodes into our basic ontology, functionalism provides the right strategy for understanding the factors that contribute to the total psychophysical arrangement that constitutes embodiment. Beliefs, sensorimotor volitions, and sensory perceptions all have to be matched with each other and with their corresponding neural states in an appropriately matching way, as determined by the psychological character of such episodes. Thus consider the difference between functionalism as a philosophy of mind and 'embodiment functionalism' as a scheme for recruiting the work of the brain and behavioral sciences:

Mind Functionalism
Pain = the state that tends to be caused by bodily injury, to produce the belief that something is wrong with the body and the desire to be out of that state, to produce anxiety, and, in the absence of any stronger, conflicting desires, to cause wincing or moaning.

vs. Embodiment Functionalism
A subject S is 'pain-embodied' in an organism *O* iff: when *S* feels pain (a psychological condition), *O* tends to be undergoing injury and this injury affects those states of *O*'s central nervous system (if any) that are correlated with *S*'s belief that something is wrong with the body…

Note that some of the conditions on the right-hand side of the matching in turn depend on the specification of other functional links, referring in this case to beliefs and states of the central nervous. So similarly, an embodiment-functionalist strategy could be applied to explicate the functional link required for a mental subject to be "belief-embodied," "behavior-embodied," and "*F*-embodied" for other more refined psychological predicates *F*.

Essential to the prospects of such a strategy is that it is content to allow psychological kinds to be identified entirely by their subjective character and to allow the corresponding physiological and environmental conditions to be identified by their purely empirical character (with a computational theory perhaps mediating the epistemically efficient matching between them in a theoretical context). This strategy is uniquely available to the phenomenalist, who is both a strict realist about minds as ontologically basic subjects and conceptualist about physical phenomena, regarding them as naturally supervenient on minds and facts about their prephysical powers and causal organization.

40. See Livesey (1990) for more on how medieval philosophers understood subalternation.

41. This was the view of religious philosophers of science such as Duhem (1991) and Jaki (1966).

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