

## Comment and Response

with Travis Dumsday, "Palamism and Dispositionalism: Comment on Flavius Raslau's *Integration of Orthodox Theology with Contemporary Metaphysics of Science*" and Flavius Raslau, "Response to Dumsday's 'Palamism and Dispositionalism.'"

### PALAMISM AND DISPOSITIONALISM: COMMENT ON RASLAU'S INTEGRATION OF ORTHODOX THEOLOGY WITH CONTEMPORARY METAPHYSICS OF SCIENCE

by Travis Dumsday

*Abstract.* In a recent volume of *Zygon: Journal of Religion and Science*, Flavius Raslau proposes a new and intriguing integration of Palamite theology with key currents of thought in analytic philosophy of science. The aim of this comment is to provide a concise summary and assessment of Raslau's proposal, along the way making suggestions as to how it might be profitably amended.

*Keywords:* capacities; dispositions; emergence; emergentism; energy; metaphysics; Palamas; Palamism; panentheism; philosophy of science; powers

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#### INTRODUCTION

In an article from a recent volume of *Zygon: Journal of Religion and Science* titled "Nature's Powers and God's Energies," Raslau critiques several prominent attempts to provide a scientifically informed account of the relationship between God and physical nature, finding them either philosophically problematic or theologically erroneous (or both). Those critiques help to motivate his central aim: to draw on the latest developments in the metaphysics of science literature, and on ideas from Eastern Orthodox thought, in order to provide "a novel synthesis that promises a more satisfactory account of the God-world relation" (2022, 62). The degree to which he succeeds in this goal is impressive. His critiques are often incisive, and his own theory is indeed novel and insightful. Moreover, he displays an admirable facility with disparate bodies of literature that are rarely brought into dialogue.

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Still, as with any bold and ambitious new project there are areas that can be marked out for clarification, and perhaps alteration. The primary aim of the present work is to identify these and to suggest specific changes, while still preserving the core of Raslau's account. It is to be hoped that these suggestions will be read in the spirit in which they are intended, namely, as friendly amendments provided by someone sympathetic to his overall approach.

The remainder is divided as follows: in the next section some preliminary remarks are made concerning the two bodies of scholarship that Raslau is chiefly concerned with—namely, contemporary metaphysics of science and Palamite theology. Although many readers will have some familiarity already with these areas, others may benefit from a brief refresher. Then in the section labelled “Raslau's Critiques”, a summary is given of his principal criticisms of existing theories. “Raslau's Positive Account” then looks at his own view. In “Objections and Amendments”, some objections are levelled against aspects of that account, and some changes are suggested by way of sidestepping those objections.

#### REMARKS ON THE METAPHYSICS OF SCIENCE AND PALAMISM

The **metaphysics of science** has become a widely recognized branch of philosophy, seen as either a subdiscipline of analytic metaphysics or of the philosophy of science. It is concerned with ontological issues pertaining to the natural and social sciences, delving into questions about the nature and existence of spacetime, physical substances (e.g., particles, fields, energy, and so on), laws of nature, potencies, natural kinds, etcetera. It is a growing subfield with its own niche scholarly association (the *Society for the Metaphysics of Science*) and an ever-expanding set of publications.<sup>1</sup> Among the ideas that receive much attention in this literature (and likewise considerable discussion by Raslau) are dispositionalism and emergentism.

Roughly stated, **dispositionalism** is the view that irreducible causal powers (AKA capacities/potencies/dispositions/abilities) exist. Moreover, advocates of dispositionalism typically maintain that what we think of as the “laws of nature” discovered by the sciences are ultimately grounded in these powers. For instance, the law of gravity is understood as grounded in the masses of individual objects, where *mass* is understood as an intrinsic causal power whose presence entails that objects exemplifying it attract other such objects in a certain way, *ceteris paribus*. (When the apple falls from the tree, it falls toward the earth because of its mass and the earth's mass.) Dispositionalism's chief competitors are: (a) **Neo-Humean regularity theory**, according to which the laws of nature are purely descriptive of regular patterns of events, which regularities are ultimately ungrounded and ontologically inexplicable (apples fall from trees in regular ways, and from a metaphysical

standpoint that is about all there is to say)<sup>2</sup>; and (b) **nomological necessitarianism**, in which the laws of nature are irreducibly real though abstract principles governing events in the physical realm (apples fall from trees because that behavior is determined by an abstract law symbolized in a mathematical equation).<sup>3</sup> Neo-Humean regularity theorists and nomological necessitarians may be happy to use the language of “powers,” at least in some contexts, but for them this usage is merely a convenient linguistic shorthand—there are no real irreducible dispositions. There are also some theories in this area that cannot be neatly classified as falling under any of these three accounts,<sup>4</sup> and others that seek to hybridize them.<sup>5</sup>

Dispositionalism has grown in popularity in recent decades, and the basic theory has subdivided into different versions depending on where one stands on a number of intra-dispositionalist debates. One of the most significant of these debates has to do with the relationship between dispositional properties and nondispositional properties (the latter are also commonly referred to as **categorical properties**). Some dispositionalists maintain the **mixed view**, according to which both sorts of property are irreducibly real.<sup>6</sup> Others defend **pan-dispositionalism**, on which all irreducibly real properties are powers and apparent cases of categorical properties (e.g., geometrical properties like shape and size) are actually powers or reducible to powers, or else eliminable from fundamental ontology altogether.<sup>7</sup> According to **identity theory**, dispositional and categorical properties are not actually distinct sorts of property at all. Every irreducibly real property is both dispositional and categorical in some way.<sup>8</sup> Finally there is **neutral monism**, according to which the dispositional versus categorical distinction is merely conceptual rather than real. At bottom, properties are neither dispositional nor categorical, yet are capable of being accurately described and conceptualized in either dispositional or categorical terms depending on context and one’s theoretical interests.<sup>9</sup>

Also stated roughly,<sup>10</sup> **emergentism** is the view that genuinely novel higher level types of properties and/or substances can arise from the structured interactions of lower level entities, and that the novel higher level types of properties and/or substances exhibit causal powers not predictably derivable from their constituent parts. (For example, a living organism like a bacterial cell might be seen as an emergent substance possessed of powers not predictably derivable from its constituent molecules and their properties considered on their own; similarly, consciousness might be seen as an emergent property exhibiting causal powers not predictably derivable from the properties of the constituent parts of the brain.) Emergentism is generally contrasted with various forms of **reductionism**, according to which there are no genuinely novel higher level types of properties or substances exhibiting unpredictable powers—rather, all seemingly emergent properties and substances, and all seemingly novel behaviors associated with them, can be wholly explained by reference to the interactions

between their lower level constituent parts (and ultimately lowest level fundamental particles or fields or whatnot).<sup>11</sup>

The fact that emergentism is often defined partly by reference to the manifestation of new, in principle unpredictable *powers* means that there tends to be an affinity between emergentism and dispositionalism; this affinity does not amount to mutual entailment, as one can certainly frame an emergentist account relying on Neo-Humean regularity theory or nomological necessitarianism as the associated background ontology. Still, many dispositionalists are emergentists, and vice versa.

The preceding quick overview of dispositionalism and emergentism made multiple references to objects or substances, and something should be said briefly about the current landscape of debate within substance ontology (which also plays an important role in Raslau's account). Within analytic metaphysics, there are four main views concerning substance: **substratum theory**, **hylomorphism**, **primitive substance theory**, and **bundle theory**. Although all of these theories are importantly different one from another, the most significant gap is between the first three theories and the fourth. This is because the first three theories are all unambiguously realist about the category "substance." Where they differ from each other is in terms of how they understand the inner ontological structure of a substance.<sup>12</sup> By contrast, according to bundle theory what we think of as a substance is actually just a conjunction of properties (where the properties can be understood as instantiated universals or as tropes, depending on the version of bundle theory at play). Those properties are not literally possessed by or borne by any distinct underlying entity or principle. To be an electron (for instance) *just is* to be: negative charge + half-integral spin + a precise rest mass, and so on. There is nothing more to an electron than the cluster of compresent properties definitive of that sort of particle. Bundle theorists therefore tend to view the category "substance" as reducible to, or even eliminable in favor of, the category "property."<sup>13</sup>

It is worth noting too that in the current literature dispositionalism is found in combination with each of those substance ontologies, and is generally seen as compatible with all four of them. The same can be said of emergentism vis-à-vis these substance ontologies.

Turning now from metaphysics to theology, the key notion to outline here is **Palamism**. This term refers to the theological stance of the great mediaeval Byzantine theologian St. Gregory Palamas (1296–1359). Raslau himself nicely describes the role played by Palamas within Eastern Orthodox theology, writing that he "synthesizes a long line of earlier patristic thinking that links Athanasius, Basil of Caesarea, Gregory of Nyssa, Dionysius, and Maximus the Confessor" (2022, 76). Orthodox scholars thus see Palamas not as an innovator, but as someone who draws together prior strands of thought and shapes them into a somewhat more systematic whole. Among the key elements of that whole (rightly emphasized by

Raslau) are: the distinction between God's essence and energies; a specific understanding of the dialectic between divine transcendence and immanence; and deification. It would be worth briefly touching upon these interrelated elements, as they will each play a part in the discussion to follow.

According to Palamas (and in line with the prior eastern patristic heritage he draws upon), within God there are multiple objective (i.e., independent of human conceptualization) ontological distinctions, crucially those between (A) the divine essence/substance/nature and the three divine Persons, and (B) between the divine essence and the **divine energies**, which energies are shared between the Persons and serve to manifest both them and the essence. The resulting picture supplies a more modest understanding of the doctrine of divine simplicity than that seen in some Roman Catholic theological systems, notably Thomism (whose more absolutist conception of simplicity explicitly rejects the essence versus energies distinction and maintains that all divine attributes must ultimately be identified with the divine essence).<sup>14</sup> Palamism recognizes several sorts of divine energy, including: (i) God's acts of thought (His eternal ideas); (ii) God's decisions or intentions; (iii) His outward actions, such as creation, conservation, governance, redemption, and deification (more on that last one presently); (iv) His necessary attributes/traits/characteristics, such as goodness, power, infinity, eternity, and so on. Each of these four aspects or modes of the divine Being have been termed "energies," despite being seemingly disparate in type ontologically. What do they share in common, such that they can all plausibly receive that label? Bradshaw (2004, 273) answers that question: "We can generalize upon this line of thought to understand the unity of the *energeiai* as a class. Some are contingent, some necessary; some are temporal, some eternal; some are realities or energies, others are activities, operations, or attributes. What could such a disparate group have in common? Simply that they are *acts of self-manifestation*" [Emphases in original]. The energies reveal Who and What God is (in a sense they *are* God, namely God qua manifested), and this shared revelatory function grounds their common classification.

This distinction between God's essence and energies serves as the foundation for an account of how God can be both wholly transcendent of the created order yet also radically immanent within it. The dual affirmation of transcendence and immanence is a prominent theme both in the Bible and in patristic authors, and there are multiple ways of trying to ease the alleged tension between them. The Palamite method of resolution is to maintain that while in His essence God is utterly transcendent—the divine essence is unknowable to the human intellect and indescribable by human concepts or language—yet in His energies (or at least *some* of His energies), He is both knowable to and participable by finite creatures.

One of the crucial modes of participation is via the aforementioned divine energy of conservation (sometimes referred to as the immanent energy *being* or *omnipresence*), by which finite creatures are sustained in being by God moment to moment. Thus, the very actuality of created things is communicated to them by God via one of His energies. St. John of Damascus in his eighth-century work, *On the Orthodox Faith*, writes of this energy that “in it they [created things] have their existence, and to all things it communicates their being in accordance with the nature of each. It is the being of things that are, the life of the living....”<sup>15</sup> St. John is here drawing at least partly on a fellow Syriac author, a sixth-century monk writing under the pen name of Dionysius the Areopagite; consider, for instance, the following from Dionysius’ *On the Divine Names*, chapter 5, 817D (1987, 98): “He is the being immanent in and underlying the things which are, however they are....So he is called ‘King of the ages,’ for in him and around him all being is and subsists.” Or consider this from *The Celestial Hierarchy*, chapter 4, 177C-D (1987, 156): “It is characteristic of this universal Cause, of this goodness beyond all, to summon everything to communion with him to the extent that this is possible. Hence, everything in some way partakes of the providence flowing out of this transcendent Deity which is the originator of all that is. Indeed nothing could exist without some share in the being and source of everything. Even the things which have no life participate in this, for it is the transcendent Deity which is the existence of every being.” That last sentence is particularly clear in its dual affirmation of transcendence and immanence, a dual affirmation grounded in this doctrine of divine energies.<sup>16</sup> Building on those earlier patristic sources, Palamas himself writes (1988, 201): “God is within the universe and the universe is within God, the one sustaining, the other being sustained by him. Therefore, all things participate in the sustaining energy but not in the substance of God. Thus, the theologians maintain that these constitute an energy of God, namely, his omnipresence.” Relatedly, Palamas writes (1983, 96): “The blessed Cyril, for his part, says that the divine energy and power consist in the fact that God is everywhere, and contains all, without being contained by anything. But it does not follow that the Divine *Nature* consists in the fact of being everywhere, any more than our own nature uniquely consists in being somewhere. For how could our essence consist in a fact which is in no way an essence? Essence and energy are thus not totally identical in God, even though He is entirely manifest in every energy, His essence being indivisible” [Emphasis in original]. This Palamite method of resolving the seeming tension between transcendence versus immanence results in a strikingly robust, realist sense of divine immanence that has prompted some to identify Palamism as a version of Christian **panentheism**, an identification welcomed by some Orthodox scholars<sup>17</sup> (in company with Raslau 2022, 80).

The final doctrine that should be paused on here is that of **deification**. This notion plays a key role in Eastern Orthodox understandings of soteriology and eschatology. The idea is that the saved human being will, upon the general resurrection at the end of history, participate fully in some of God's energies, being glorified in the same way that Christ's human nature was seen to be glorified by select apostles at the Transfiguration. Human beings become divine by grace, sons of God by adoption. Florovsky (1976, 67–68) writes: “There is a real distinction, but no separation, between the *essence* or *entity* of God and His *energies*. This distinction is manifest above all in the fact that the Entity is absolutely incommunicable and inaccessible to creatures. The creatures have access to and communicate with the Divine Energies only. But with this participation they enter into a genuine and perfect communion and union with God; they receive ‘deification’” [Emphases in original]. St. Maximus, the Confessor (another major patristic influence on Palamas), writes in volume I of his *Ambigua* (2014, 113) concerning resurrected and glorified Christians: “For God in His fullness entirely permeates them, as a soul permeates the body. . . . God will be wholly participated by whole human beings, so that He will be to soul, as it were, what the soul is to the body, and through the soul He will likewise be present in the body (in a manner that He knows), so that the soul will receive immutability and the body immortality. . . . Man will remain wholly man in soul and body, owing to his nature, but will become wholly God in soul and body owing to the grace and the splendor of the blessed glory of God. . . .” Palamas himself writes on this same theme as follows (1988, 171): “There are three realities in God, namely, substance, energy, and a Trinity of divine hypostases. . . . [T]hose deemed worthy of union with God are united to God in energy. . . the uncreated energy of the Spirit and not of the substance of God.” Later in the same work he says that those (1988, 201) “who have pleased God and attained that for which they came into being, namely, divinization—for they say it was for this purpose that God made us, in order to make us partakers of his own divinity—these then are in God since they are divinized by him and he is in them since it is he who divinizes them. Therefore, they too participate in the divine energy, though in another way, but not in the substance of God.” Humans thus remain infinitely apart from God in essence (human nature remains ever and always nondivine—there is no absorption of humanity into divinity), and yet intimate participants in God's glory, infused by His energies, a gracious act enabled of course by Christ's sacrificial death on the cross. This is quite an exalted view of the ultimate fate of saved humanity, in keeping with the profoundly optimistic cosmic vision affirmed by Orthodoxy. Yet it also preserves a sharp divide between the human and the divine, and more generally the created and the uncreated; again, while Palamism may count as a form of panentheism, it is in no way a version of **pantheism** (on which God and the cosmos are ultimately equated). Raslau expresses this nicely

(2022, 77): “While we cannot participate in what God is, God’s essence, we can participate in what God does, God’s energies/activities. Knowing God is therefore less intellectual and more embodied and experiential. We are united with God by coparticipation, cooperation, synchronization, or synergy with God’s actions in the world.”

The preceding background materials concerning the metaphysics of science, and concerning Palamism, have been presented in an exceedingly compressed fashion and with a great many subtleties passed over. Still, hopefully they will suffice as entry points for readers who may be less familiar with one or another of these complex philosophical and theological terrains. With that background now in place, the discussion can progress into the specifics of Raslau’s arguments, first examining his critical remarks concerning existing accounts of the God/world relation (and metaphysical notions associated with them) and then moving into his own novel Palamism-inspired account.

#### RASLAU’S CRITIQUES

Raslau sets up his positive account in part by way of critiquing opposing views within the metaphysics of science and theology. In this section, some of those critiques will be covered, namely, those concerning categoricism, mixed view dispositionalism, reductionism, and Thomism (specifically the Thomist account of how to understand the transcendence vs. immanence dialectic).

**Categoricism** is the view that there are no irreducible dispositional properties, such that any irreducible property must be categorical (i.e., nondispositional) in nature. Neo-Humean regularity theory and nomological necessitarianism are both committed to categoricism. Raslau briefly deploys several standard arguments against categoricism (and, by extension, *for* dispositionalism): first, there is the argument from the Eleatic criterion of existence. Raslau writes (2022, 62) that “we should count as real whatever displays power, according to the criterion of ontological commitment known as the Eleatic principle as described by Plato, when a student of Parmenides from Elea voices the dictum that the mark of being is power (Plato, *Sophist* 247 d-e).” The basic point here is that potential causal efficacy is a reliable indicator of reality, such a reliable indicator that it can plausibly be taken as a sufficient condition for actual existence. By contrast, we are rightly suspicious of the reality of anything that is wholly causally inert. (For example, you know that the pen in your hand is real because it can do things and have things done to it; you know that Zeus is not real in part because he cannot do anything or have anything done to him.) Some in the metaphysics literature go further and suggest that causal power is both a sufficient and a *necessary* condition for reality, such that anything wholly inert would *ipso facto* count as



nonexistent; moreover it seems clear that Raslau is on board with this more robust understanding of the principle, as he later adds (2022, 64): “If we take powers to be real in virtue of causal relevance according to the Eleatic principle mentioned earlier, then this principle would undercut the justification for admitting into one’s ontology anything acknowledged to be causally impotent...” If that is correct, then categoricism must be false. Why? Because according to categoricism, there are no irreducible causal powers in the natural realm; all physical entities are ultimately inherently inert, possessing only categorical properties like shape and size and structure. But if the (strengthened) Eleatic criterion of being holds true, that would mean that no physical entities exist (or, at least, no physical entities possessing real properties), which would of course be a highly counterintuitive claim. Summing up this line of reasoning:

**Premise 1** If causal power is a necessary and sufficient condition for reality, then categoricism is false.

**Premise 2** Causal power is a necessary and sufficient condition for reality.

**Conclusion** Therefore, categoricism is false.

The justification for P1 has already been made apparent; the justification for P2 rests largely on the alleged plausibility of the Eleatic criterion of being (its cohering with intuitions about what is real and what is not, and with assorted test cases).

Another argument Raslau (2022, 65) cites against categoricism is a probabilistic one based on the empirical findings of recent science: some of the entities posited by contemporary physics appear to be defined wholly by reference to dispositional properties. This is particularly the case with respect to allegedly fundamental entities—elementary particles like electrons and protons and the various classes of quark. These entities are most commonly conceived of as unextended point particles, lacking categorical properties like spatial extension (and correlative traits like shape and structure). Thus, their natures seem to be exhausted by powers like mass and charge. Physics therefore seems to tell against categoricism. Stated more formally:

**Premise 1** If our best current physics posits the reality of fundamental particles lacking categorical properties and defined wholly in terms of powers, then categoricism is probably false.

**Premise 2** Our best current physics posits the reality of fundamental particles lacking categorical properties and defined wholly in terms of powers.

**Conclusion** Therefore, categoricism is probably false.

This must remain at best a probabilistic argument, insofar as scientific findings could of course change; still, after decades of intense research there is as yet no compelling evidence of any underlying structure or other standard categorical traits displayed by these sorts of particle. To the extent

that scientific findings ever bear on metaphysical theses, dispositionalists commonly maintain that contemporary particle physics supports dispositionalism over and against categoricism.<sup>18</sup>

Raslau favors pan-dispositionalism and targets dispositionalist competitors (notably mixed view dispositionalism) that admit room for irreducible categorical properties as well as powers. His reasoning on this point draws on the aforementioned commitment to the Eleatic criterion of being (2022, 64). This underscores the robust nature of the strengthened version of that Eleatic criterion (according to which potential causal efficacy is a sufficient *and* necessary condition for existence): its truth would have the implication not merely of falsifying categoricism, but of eliminating from ontology any irreducible categorical properties. That in turn would prove the truth of pan-dispositionalism and falsify alternative dispositionalist ontologies. To sum up:

**Premise 1** If causal power is a necessary and sufficient condition for reality, then irreducible categorical properties are not real.

**Premise 2** If irreducible categorical properties are not real, then pan-dispositionalism is true (and mixed view dispositionalism is false).

**Conclusion 1/Premise 3** Therefore, if causal power is a necessary and sufficient condition for reality, then pan-dispositionalism is true (and mixed view dispositionalism is false).

**Premise 4** Causal power is a necessary and sufficient condition for reality.

**Conclusion 2** Therefore, pan-dispositionalism is true (and mixed view dispositionalism is false).

Raslau's critique of reductionism is also in part empirically grounded, insofar as he takes there to be plausible scientific case studies of emergence where "powers interact with additive and subtractive effects, often in non-linear ways, producing new powers and losing former powers" (2022, 63). He cites as an example the very different set of powers possessed by a sodium chloride compound as compared with the powers possessed by sodium or by chlorine considered individually—for example, chlorine is a poisonous gas at room temperature but sodium chloride is not. As a further point, he notes that standard models of reductionism rely on a conception of lower level entities retaining as their identity and autonomy vis-à-vis the larger whole that they seem to have been integrated into as component parts. This is especially the case for accounts of reductionism that rely on the notion of supervenience; however, drawing on the work of Anjum and Mumford (2017), Raslau argues that the component parts of a larger emergent whole are in fact transformed during the time they belong to that whole, displaying different powers and thus somewhat altered identities. The sodium is not poisonous while it is in the sodium chloride compound. Since it displays different powers, and since a thing's existence (and presumably its identity as well) are determined by its powers, it is

not at all clear whether, in metaphysical terms, the “sodium” in sodium chloride is still fully *sodium*. Its role in a larger emergent whole seems to have altered it, at least for its duration as a part of that whole. The whole affects the parts, and in a manner incompatible with typical models of reductionism (where the causal influence must go solely in the opposite direction, from the bottom upward rather than top down).

That case against reductionism, and the understanding of emergence attendant upon it (as involving downward causation of some sort and the ontic transformation of parts by the whole to which they belong), dovetails nicely with recent treatments of emergentism by Thomist scholars, especially the work of Tabaczek (2019)—who, like Raslau, also draws on the recent metaphysics of science literature pertaining to dispositionalism. Raslau writes approvingly of aspects of Tabaczek’s project, while expressing reservations concerning the larger Thomistic theology of divine transcendence: “The outstanding question is whether the theology that accompanies this neo-Aristotelian metaphysics of the world supplies a satisfactory metaphysics of the God-world relation. My contention is that it does not” (2022, 75). On Raslau’s understanding of the key Thomist claims here, God and the created cosmos enjoy what seems a fairly distant relationship. God creates the world by an act of will and knows infallibly what happens within it; moreover the world bears a degree of similarity to God by way of analogy. Yet the divine being does not in any literal sense extend into the world. Created entities do not participate in God’s being, except analogously. (God is related to the world in something vaguely akin to the way in which a security guard is related to the rooms she is monitoring: she knows everything that is going on and can intervene causally if necessary, but the being of the security guard in no way flows into what is being monitored.) This is related to the Thomist perspective on absolute divine simplicity: in God the only objective distinctions are those between the simple divine essence and the three Persons. The overarching divine being consists wholly of essence and Persons. The being of an imperfect finite creature cannot literally participate in an infinite perfect essence,<sup>19</sup> and according to Raslau “the problematic consequence of such metaphysics is that it necessarily creates distance between God and world...thereby segregating reality into God and world, and arguably motivating the naturalistic turn that has unfolded in western history...” (2022, 75). God can act *on* created entities, but not literally *in* them or *through* them; no aspect of God’s being (such as His powers or attributes) can be shared with created entities, since God’s being has no objectively real distinct aspects: there is just the essence and the Persons. (Recall that for Thomists, what we think of as God’s powers or attributes or activities are actually identical with God’s essence.) In sum, Thomism places disproportionate weight on the transcendence side of the transcendence versus immanence dialectic:

**Premise 1** If the Thomist model of absolute divine simplicity is true, then we are left with an insufficiently robust account of divine immanence.

**Premise 2** But we should reject any insufficiently robust account of divine immanence.

**Conclusion** Therefore, the Thomist model of absolute divine simplicity is not true.

The preceding overview has again prized concision over depth, but hopefully it has succeeded in conveying adequately the main lines of Raslau's critiques on these four points.<sup>20</sup> His own positive account can now be examined.

#### RASLAU'S POSITIVE ACCOUNT

The contours of Raslau's positive account will already be partly visible from the preceding review of some of his critical remarks on competing positions. He is committed not just to dispositionalism generally but also to pan-dispositionalism in particular, on grounds of its cohering (uniquely so, in his view) with the Eleatic criterion of being, and also with the findings of contemporary physics. With respect to substance ontology he advocates bundle theory (2022, 64). Bundle theory + pan-dispositionalism results in an ontology in which powers play the key foundational role; what we think of as a "substance" or "object" in the physical realm is always and only a cluster of conjoined powers. There are no other sorts of property. Moreover the ontological category of "process" is also grounded in powers. A process occurs when and only when a previously unactualized power manifests. (For example, the causal process "breaking" occurs when a vase's fragility, previously unactualized, is manifested upon the vase's being dropped.) This manifestation is not instantaneous, but rather takes time, such that there "is not a succession of discrete events but rather temporally extended processes" (2022, 65).

Raslau does not present an explicit argument for bundle theory, but one can infer his likely principal justification: the robust version of the Eleatic criterion of being. If one posits a substratum or prime matter underlying the properties (i.e., powers) of a "substance," that substratum or prime matter will presumably be viewed as something *other* than a power, and thus as inert.<sup>21</sup> But according to the Eleatic principle, there can be no inert entities. The argument here would thus go as follows:

**Premise 1** If causal power is a necessary and sufficient condition for reality, then bundle theory (specifically, *pan-dispositionalist* bundle theory) must be the correct substance ontology.

**Premise 2** Causal power is a necessary and sufficient condition for reality.

**Conclusion** Therefore, bundle theory (specifically, *pan-dispositionalist* bundle theory) must be the correct substance ontology.

Raslau also places considerable emphasis on the duality between a power's unmanifested state and its manifestation (2022, 72–74). The vase sitting there quiescently has the power to break, such that its identity is inherently ordered toward a potential but heretofore unactualized state of affairs. The power in its unactualized state is just as real as the power *qua* actualized, even if, on the epistemic level, we may not know a thing's powers until they are manifested outwardly.

He favors a strong form of emergentism, of the sort outlined in the previous section. Emergent entities are real, genuinely novel, and display powers whose presence could not have been predicted in advance on the basis of knowledge concerning the powers of its constituent parts; moreover the nature of those parts is affected by their integration into an emergent whole, which exercises robust downward causation upon them. His emergentism is very much tied into his dispositionalism, and indeed with bundle theory. An emergent whole is a “substance” only in the bundle theorist's reductionist understanding of that label,<sup>22</sup> as are its constituent parts. An emergent whole is thus a larger cluster of powers integrating sub-clusters of powers, with what we think of as an “object” being more like a highly complex integrated set of causal processes. This dispositionalist emergentism is then used to ground a further objection against any sort of reductionism that would privilege the ontological status of parts over whole: “However, whereas wholes reduce to parts on a substance view and so parts are more fundamental, on a process (or powers) view both wholes and parts reduce to processes and so wholes and parts are no longer pitted against one another. Neither wholes nor parts have ontological priority in which to ground the causal influences. We may still speak of wholes and parts as convenient placeholders for subsets of nested processes that manifest with recognizable regularities, but wholes and parts should not be taken as reified substances” (2022, 67). This powers/process view of emergence constitutes another point of departure from Tabaczek's (2019) version of dispositionalist emergentism, since as a Thomist Tabaczek is committed to hylomorphism rather than bundle theory and retains a robust and irreducible role for the category “substance.”

Finally, Raslau puts the preceding metaphysical material to work in fulfilling the article's stated aim of providing a new account of the relationship between God and the created cosmos. The central claim of that account is that by combining pan-dispositionalism with the Palamite doctrine of the objective distinction between God's essence and energies, a novel and robust understanding of divine immanence falls into place, one which also preserves God's absolute transcendence. Raslau writes (2022, 80): “I suggest a Palamas-inspired approach that is top-down, beginning with a divine being characterized by the essence-energies distinction and then using powers ontology to explain the God-world relation. On a Palamite account, one should not confuse the “en” in panentheism to mean

spatially, in a literal sense, that the world is in God, or God is in the world. Rather, God is where God acts, and therefore the world is in God and God is in the world insofar as God's energies/activities are nature's powers. Here, then, is the identity thesis: not between nature's powers and God, but between nature's powers and God's energies." Thus, the dispositions encountered in nature, whether at the fundamental level or in emergent entities, are to be identified with divine energies. What we think of as the mass of an apple (for instance) is real, but it is not a separate autonomous power with an identity independent of God; rather, the power to attract gravitationally other massive entities is to be identified with one of the divine energies. Sometimes that energy is active and manifesting, at other times it remains latent and unmanifested.

Does this carry a risk of emphasizing divine immanence excessively, perhaps to the point of erasing the God/world distinction? Raslau thinks not, concluding his article as follows (2022, 81–82):

The pan-dispositionalist element of powers theology suggests that everything consists of clusters of powers. This offers a principled way of motivating a precise panentheism beyond a rhetorical device. If everything consists of nature's powers and these are God's energies/activities, then the distance between us and God is bridged. God is, then, not just a conclusion to be reasoned or an analogy to be approximated but rather the fullness of reality to be experienced. This account of reality is the dramatization of God's manifestation in the world and our participation in that cosmic revealing. But is there still a God-world distinction? Absolutely. The worry of pantheism is rejected in virtue of the essence-energies distinction. God self-manifests in the plurality of God's energies/powers, though God's essence is not exhausted by them. The essence-energies distinction maintains a balance between two assertions: (1) our communion is not with a created thing by similitude or analogy (contra Thomism) but with God directly; (2) God is always more than any experience of the divine (contra pantheism). God's energies protect against the Creator-creation distance, and God's essence secures the Creator-creation distinction. Herein lies the virtue of a Palamite powers theology of the God-world relation.

Having summarized the central elements of Raslau's positive account, an examination of that account can now proceed.

#### OBJECTIONS AND AMENDMENTS

As emphasized in the "Introduction" above, there is much to commend in Raslau's project. However, there are also areas arguably in need of clarification, and others that should perhaps be dropped or amended. These will be the focus of this final section. First some remarks will be made concerning Raslau's background metaphysical commitments, followed by observations on his strategy for combining those commitments with Palamite theology.

There is a great deal to be said in favor of dispositionalism, both on its own philosophical merits and for the ways in which it can be profitably employed within various areas of the theology and science literature.<sup>23</sup> Pan-dispositionalism is a prominent version of that theory, with many defenders. However, it does face problems, as does the Eleatic criterion of being used by Raslau to support it. Regarding the latter, it is rejected by those philosophers adopting a realist stance concerning platonic abstracta, such as uninstantiated universals (i.e., platonic forms) or numbers or unactualized possible worlds, and so on. Abstract entities are typically understood to be necessarily causally inert, existing atemporally and being unable to affect anything or to be affected by anything. There are many arguments in favor of the reality of abstract entities,<sup>24</sup> and if any of those arguments work then the Eleatic criterion of being must be abandoned. Of course Platonism is itself highly controversial, but the fact that it is still widely defended within metaphysics, the philosophy of mathematics, the philosophy of language, and other areas should give one pause concerning the Eleatic criterion.

Platonism is not the only source of opposition to that criterion; as noted earlier, other versions of dispositionalism (like mixed view dispositionalism) reject it as well, at least in the strong form of it advocated by Raslau. On that note, it is worth observing that there are different ways of reading the Eleatic principle (or perhaps different forms of the principle). One can read it in the especially robust way in which Raslau does, namely as claiming that whatever exists (regardless of ontological category) must be potentially causally efficacious. Alternatively, one can read it in more circumscribed ways, for instance as implying only that any real *concrete substance* cannot be wholly inert. That weaker formulation leaves room for inert abstract entities (like platonic forms or numbers, and so on) as well as irreducibly real properties and relations that are not themselves causal powers—perhaps categorical properties like shape and size and structure. Mixed view dispositionalists argue that such properties are real and explanatorily relevant even though not themselves powers. Consider, for example, part of Ellis' (2002, 173–74) case for mixed view dispositionalism:

The essentialist ontology I have described includes both powers and structures. The powers are dispositional properties, and are readily identifiable by how they dispose their bearers to behave. The structures, on the other hand, are not powers, but frameworks of a kind that might well give shape or form to many different powers. Methane, silane, and carbon tetrachloride all have a tetrahedral structure. Nevertheless, these substances have different causal powers, due to the different causal powers of their constituent atoms. In this case, the common structure is spatiotemporal, and plausibly, if the same structure can exist in two or more different molecules, it might also exist in another world with other kinds of atoms—atoms that are unlike any that exist in this world. Therefore, it is plausible to suppose that some structural properties, for example, the spatiotemporal ones, might well

exist in worlds other than the kind of world in which we live. If this is so, and the same structures may exist in worlds with different causal powers, then the structures are ontologically at least as fundamental as the powers, and are not dependent on them. What then can we say about structures? They do not seem to be just causal powers, like those they inform. On the other hand, they must do something, or we could never know about them. I agree. They inform the structures in which causal powers operate, the structures that result from their operation and, ultimately, the structure of our experience. . . . All causes and effects are events in space and time; so they are necessarily limited by the kinds of spatial and temporal relationships that can exist in our kind of world. . . . [S]tructural properties neither add to, nor subtract from, the powers, but determine the structural frameworks within which the powers operate. They are the properties of the causal set-ups and the properties of the displays of causal powers.

To the extent that such arguments (and others in the same vicinity)<sup>25</sup> are plausible, they too undermine the robust form of the Eleatic principle, and any defenses of pan-dispositionalism or bundle theory flowing from it. (It is worth emphasizing, however, that mixed view dispositionalism remains compatible with bundle theory. In fact in his later work Ellis (2009) explicitly advocates both.)

Regarding bundle theory, again it is a prominent account within substance ontology with much to be said for it. However it too faces considerable worries, most obviously the counterintuitive nature of collapsing the distinction between objects and their attributes, dropping the former from fundamental ontology altogether. Common-sense suggests that there are *things with* characteristics, not just characteristics. Of course, everyday pre-philosophical intuition is hardly infallible; the point is simply that bundle theory, as an anti-realist account of substance, seems to have at least a marginally higher burden of proof than do its realist competitors (substratum theory, hylomorphism, and primitive substance theory).

Moreover, even if Raslau's preferred version of the Eleatic principle (the robust version) is accepted, bundle theory need not follow automatically as the only workable substance ontology. (So even if pan-dispositionalism is true, it needn't be the case that bundle theory is true.) Notably, advocates of hylomorphism conceive of prime matter as a kind of power, if a power falling under the category of substance—that is, they think of prime matter as a *substantial disposition*, a metaphysical co-principle that, when actualized by substantial form, constitutes a concrete corporeal object.<sup>26</sup> Prime matter, in other words, is thought of as a power to become different kinds of substance. Prime matter is thus not thought of as inert, and hylomorphism does not fall afoul even of the robust Eleatic principle. The substance ontology literature has also seen the development of an analogous dispositionalist model of substratum theory.<sup>27</sup>

Naturally all of those objections—against the Eleatic criterion, pan-dispositionalism, and bundle theory—are themselves eminently



disputable, as are the competing theories Raslau rejects (like mixed view dispositionalism and hylomorphism). Any metaphysical foundation for a theological research program will be disputable, because everything in philosophy is disputable. I raise the aforementioned points not as knockdown objections against Raslau's positive account (they certainly are not that), but simply to highlight areas open to attack. If he were to pursue a more expansive (perhaps book-length) edition of his project, these would be areas worth delving into further and defending more extensively.

Turning now to theological matters, here there are more serious reservations to be raised. Regarding bundle theory as applied to purely physical nature, there are likely no major theological concerns here, and in fact there is a case to be made for an Eastern patristic precedent in the form of St. Gregory of Nyssa's bundle theory of material objects.<sup>28</sup> The situation does become more complicated however when it comes to human nature and the human soul. The creedal statements on the Incarnation, as formulated by the seven Ecumenical Councils of the Orthodox Church, are formulated in such a way as to imply (arguably) realism about the substance of embodied human nature. It is not entirely clear how smoothly a bundle theoretic account could cohere with those creedal formulations. Admittedly though, there is something of a dearth in the literature on this; most of those writing on the metaphysics of the Incarnation do so from the perspective of other substance ontologies.

Relatedly, there is the question of whether bundle theory could be applied to an understanding of the divine substance/essence/nature spoken of in the Trinitarian creeds. Of course it may be that Raslau intends to restrict the scope of bundle theory to the created realm rather than extend it to the divine substance. Indeed, on apophatic grounds it might be argued that none of the standard substance ontologies could properly be literally affirmed as applying to the ineffable divine substance. On the other hand, if bundle theory—and, on grounds of the strong version of the Eleatic criterion of being, *pan-dispositionalist* bundle theory specifically—were applied to the divine substance, there would be a risk of collapsing the distinction between the divine essence/substance/nature and the divine energies (at least on the assumption that all powers must be properties). For then the divine substance would be a power, and would count as an energy, given the Palamite understanding of what counts as a divine energy. That would be theologically problematic, so it would be worthwhile for Raslau to clarify his view on the scope of the applicability of bundle theory.

Turning now to his account of the God/world relation, one general concern would be that there may be a tension between Raslau's identification of the powers of created entities with divine energies, on the one hand, and his affirmation of the possibility of genuine synergy or cooperation between created things and God, on the other. He explicitly professes both,

yet if created things have no powers of their own it is not clear whether they can engage in meaningful cooperation with divine activity. Rather, it seems more like divine activity is wholly *replacing* creaturely activity, resulting in a version of occasionalism. Occasionalism has a storied history in theology and boasts many prominent proponents, including some in the recent literature.<sup>29</sup> Yet it has not enjoyed much support within Orthodoxy, in part because of the emphasis placed within Orthodox theology on this concept of synergy.

That last concern may be exacerbated by the fact that Raslau's metaphysics of created things affirms pan-dispositionalist bundle theory, such that a finite created entity is ultimately just a set of conjoined properties, all of which are powers. But if that is the case, and those powers are all divine energies, then now it appears as if the created entity (qua created) is being removed from the picture altogether and replaced by divine uncreated energies. To sum up the worry here in a *reductio*:

**Premise 1** If pan-dispositionalist bundle theory is true of all finite entities, then all finite entities are reducible to conjunctions of powers.

**Premise 2** Pan-dispositionalist bundle theory is true of all finite entities.

**Conclusion 1/Premise 3** Therefore, all finite entities are reducible to conjunctions of powers.

**Premise 4** If all finite entities are reducible to conjunctions of powers, and all powers are actually divine energies, then all finite entities are actually conjunctions of divine energies.

**Premise 5** All finite entities are reducible to conjunctions of powers, and all powers are actually divine energies.

**Conclusion 2/Premise 6** Therefore, all finite entities are actually conjunctions of divine energies.

**Premise 7** If all finite entities are actually conjunctions of divine energies, then the distinction between creatures and divine energies collapses.

**Final Conclusion** Therefore, distinction between creatures and divine energies collapses.

That conclusion is theologically problematic, but it seems to be where Raslau's account ultimately leads. It may not count as a form of pantheism (there is still a distinction between God's transcendent essence and the immanent energies/creatures), but now the balancing act of the transcendence versus immanence dialectic is weighted much too heavily on the side of immanence. Raslau is certainly correct that creatures should not be conceived as distant from the divine being or as autonomous from divine energies, yet creatures do need to preserve their genuinely *creaturely* status and real distinction from God (both God's essence and God's energies).

There are, however, several easy fixes available for Raslau here: **first**, he could drop the strict identification of creaturely powers and divine energies, affirming instead a view according to which creaturely powers need

the cooperation of divine energies in order to be manifested and/or preserved in being (preserved at a time or through time or both). The resulting account would be akin to some Scholastic models of divine concurrence with creaturely activity, only framed in Palamite terms with literally real divine energies playing a crucial explanatory role. **Second**, he could retain the identification of creaturely powers with divine energies, but drop the pan-dispositionalism in favor of mixed view dispositionalism. That way, creatures could still have real categorical properties of their own that would be nonidentical with any divine energy, preserving the distinction between creature and God. This would be a version of occasionalism, and so somewhat in tension with mainline Orthodox theology, but it would not be obviously heretical. **Third**, he could retain the identification of creaturely powers with divine energies, but drop bundle theory in favor of another substance ontology—perhaps primitive substance theory, or substratum theory (specifically a version where the substratum is *not* conceived of as a disposition). That way, a created entity is still distinct from God (its substance or substratum is not a divine energy) even while its powers are identified with divine energies (though again the result would be a form of occasionalism). **Fourth**, he could advocate for a view on which *some* of the powers we normally attribute to creatures are actually divine energies, but not all of them. Creaturely powers and divine energies would thus be partially but not wholly identified. The creature/divinity distinction would be retained, occasionalism would be sidestepped, the Orthodox notion of synergy would still be upheld, and Raslau could keep his key metaphysical commitments to pan-dispositionalism and bundle theory. The challenge here would be to develop a plausible, principled accounting of which powers are actually divine energies and which are not. But that challenge may not be insurmountable—indeed, conceivably it could be a doorway to an interesting research program.

To conclude, Raslau's Palamite dispositionalism is a valuable, cutting-edge contribution to the theology and science literature, one that draws profitably from both the latest currents of thought within the metaphysics of science and from the best of the Orthodox theological tradition. It is the view of this author that some aspects of Raslau's account call out for clarification, or even alteration, but the general tenor and direction of his reflections are commendable, and his project is certainly worth pursuing further. It is to be hoped that this response piece will contribute productively to that further pursuit.

## NOTES

1. Consult Schrenk (2017) for an accessible introduction.
2. Recent advocates of regularity theory include Barker (2013), Beebee (2011), Jaag (2021), Miller (2015), and Smart (2013).

3. This theory is also sometimes referred to as “**primitivism**.” Proponents include Armstrong (1983, 1997), Brown (2011, 2012), Dretske (1977), Foster (2004), Laudisa (2015), Maudlin (2007), and Tooley (1977).

4. Notably there is Lange’s (2004, 2009, 2009a) model, according to which natural regularities are founded ultimately not on laws or powers but on primitive counterfactual truths; see too Whittle’s (2009) similar view referencing primitive functional facts.

5. Dumsday (2011, 2013, 2019) and Tugby (2013, 2016) advocate views that might be seen as combining dispositionalism and nomological necessitarianism, insofar as they defend the irreducible reality of both dispositions and laws. Katzav (2005) had earlier entertained, without quite endorsing, such a hybrid account. Another eclectic theory combines dispositionalism with aspects of Neo-Humean regularity theory—see Demarest (2017) and Kimpton-Nye (2017).

6. Advocates of mixed view dispositionalism include Ellis (2001, 2002, 2009), Molnar (2003), and Oderberg (2007).

7. Pan-dispositionalism is also referred to as **dispositional monism**. Its defenders include Bauer (2013, forthcoming), Bird (2007), Bostock (2008), Coleman (2010), and Mumford and Anjum (2011).

8. See, for instance, Heil (2003, 2012), Ingthorsson (2013), and Jacobs (2011).

9. See Bartels (2013) and Mumford (1998).

10. One should perhaps say “stated *very* roughly,” insofar as there are multiple deep and abiding disagreements concerning the proper definition of emergence. Moreover, the uses of “emergence” and “emergentism” can differ widely depending on whether the author is writing within the sciences versus philosophy of science versus philosophy of mind versus theology, and so on. Usages differ both within a given discipline and, even more, across disciplines. This terminological free-for-all is frequently remarked upon (and lamented) but seems intractable.

11. Useful recent entry points into the emergentism versus reductionism dialectic include Jaworski (2016), Tabaczek (2019), and Wilson (2022).

12. According to the first two theories, a substance is a compound of underlying metaphysical principles—substratum + properties on substratum theory, or substantial form + prime matter on hylomorphism—whereas in primitive substance theory there are no such deeper principles; rather, a substance is itself ontologically basic.

13. Proponents of bundle theory include Campbell (1990), Denkel (1996), Ellis (2009), Keinänen (2011), O’Leary-Hawthorne and Cover (1998), Robb (2005), Shiver (2014), and Simons (1994).

14. It is worth noting though that some other Catholic systems maintain conceptions of divine simplicity rather closer to that affirmed within Palamism, the most prominent historical example being that of Scotism. For a concise introduction to the Scotist perspective on this issue, see Steele & Williams (2019). A number of scholars have drawn attention to surprising theological convergences between Scotism and Palamism, on this and other points. See, for instance, Bradshaw (2019), Kapriev (2018), Plested (2019), and Spencer (2017).

15. *On the Orthodox Faith*, book 1, chapter 14, quoted (in his own translation) by Bradshaw (2004, 209).

16. That is according to the usual Orthodox reading of St. Dionysius anyway—there are competing interpretations (e.g., that of Thomas Aquinas in his *Commentary on the Divine Names*) that seek to avoid a recognition of the essence versus energies distinction.

17. On this point, see, for instance, Knight (2007), Ladouceur (2019), Louth (2004), Nesteruk (2004), and Ware (2004).

18. For more on this argument, see Mumford (1998, 229–30, 2006).

19. Though an infinite perfect Person can participate in finite imperfect creation, which is why the Incarnation remains possible on Thomism.

20. It should be noted that these are not the only recent theories to which Raslau devotes critical attention; in fact one of the most effective sections of the article is his discussion (2022, 78–80) of three recent pantheistic models of God and nature. Unfortunately, in the interests of space that aspect of his project must be left out here.

21. This point will be revisited in the next section.

22. While not all bundle theorists are reductionists regarding the category “substance,” it tends to be the most common formulation of the view. Raslau (2022, 64) approvingly quotes McKittrick et al. (2013, 555), who write that “objects are just bundles of properties; and properties are just bundles of powers. If that is the case then objects would be constructed from powers

and although powers tend to travel around together in bundles, we do not need an irreducible ontological category of object.”

23. See Yong (2008) for another interesting example of such employment.

24. See Cowling (2017) for a recent overview.

25. A similar point: powers and their manifestation often implicitly reference and rely upon non-powers, upon categorical properties and relations. If for instance one particle has the power to repel another particle, the repelling effect has to be preprogrammed for a specifiable distance (i.e., particle A will push particle B backward *this far* under these circumstances, *in a straight line, ceteris paribus*). Distance relations and directional vectors are not themselves powers, but they have to be real in order for powers of this sort to be capable of being exercised. They are non-powers but still explanatorily significant, indeed indispensable.

26. For more on hylomorphism, see, for instance, Oderberg (2007). More generally, it is a matter of dispute within the dispositionalist literature whether all powers are properties, or whether some powers might belong to other ontological categories. Hylomorphists maintain that powers cross-cut ontological categories, such that most powers are properties but one sort of power (prime matter) is a substantial principle falling under the category “substance” rather than “property.” Along similar lines, within the literature on ontic structural realism some defend the reality of relational powers, that is, dispositions that fall under the category “relation” rather than “property.” See, for instance, French (2006) and Esfeld (2009).

27. See Dumsday (2016).

28. For a recent discussion of this, see Schooping (2015).

29. Foster’s (2004) theistic ontology of laws, for example, amounts to a form of occasionalism.

## REFERENCES

- Anjum, Rani Lill, and Stephen Mumford. 2017. “Emergence and Demergence.” In *Philosophical and Scientific Perspectives on Downward Causation*, edited by Michele Paolini Paoletti and Francesco Orilia, 92–109. London: Routledge.
- Armstrong, David. 1983. *What is a Law of Nature?* Cambridge: Cambridge University Press.
- . 1997. *A World of States of Affairs*. Cambridge: Cambridge University Press.
- Brown, James Robert. 2011. *The Laboratory of the Mind: Thought Experiments in the Natural Sciences*, 2nd ed. London: Routledge.
- . 2012. *Platonism, Naturalism, and Mathematical Knowledge*. London: Routledge.
- Barker, Stephen. 2013. “The Emperor’s New Metaphysics of Powers.” *Mind* 122:605–53.
- Bartels, Andreas. 2013. “Why Metrical Properties are not Powers.” *Synthese* 190:2001–13.
- Bauer, William. 2013. “Dispositional Essentialism and the Nature of Powerful Properties.” *Disputatio* 5:1–19.
- . Forthcoming. *Causal Powers and the Intentionality Continuum*. Cambridge: Cambridge University Press.
- Beebe, Helen. 2011. “Necessary Connections and the Problem of Induction.” *Notus* 45: 504–27.
- Bird, Alexander. 2007. *Nature’s Metaphysics: Laws and Properties*. Oxford: Oxford University Press.
- Bostock, Simon. 2008. “A Defence of Pan-Dispositionalism.” *Metaphysica* 9:139–57.
- Bradshaw, David. 2004. *Aristotle East and West: Metaphysics and the Division of Christendom*. Cambridge: Cambridge University Press.
- . 2019. “Essence and Energies: What Kind of Distinction?” *Analogia: The Pemptousia Journal for Theological Studies* 6:5–35.
- Campbell, Keith. 1990. *Abstract Particulars*. Oxford: Blackwell.
- Coleman, Mary. 2010. “Could there Be a Power World?” *American Philosophical Quarterly* 47:161–70.
- Cowling, Sam. 2017. *Abstract Entities*. London: Routledge.
- Denkel, Arda. 1996. *Object and Property*. Cambridge: Cambridge University Press.
- Demarest, Heather. 2017. “Powerful Properties, Powerless Laws.” In *Causal Powers*, edited by Jonathan Jacobs, 38–54. Oxford: Oxford University Press.

- St. Dionysius the Areopagite. 1987. *Pseudo-Dionysius: The Complete Works*. Translated by Colm Luibheid. Mahwah, NJ: Paulist Press.
- Dretske, Fred. 1977. "Laws of Nature." *Philosophy of Science* 44:248–68.
- Dumsday, Travis. 2011. "Have the Laws of Nature Been Eliminated?" In *Reading the Cosmos: Nature, Science and Wisdom*, edited by Giuseppe Butera, 111–28. Washington, DC: Catholic University of America Press/American Maritain Association.
- . 2013. "Laws of Nature Don't Have Ceteris Paribus Clauses, They Are Ceteris Paribus Clauses." *Ratio* 26:134–47.
- . 2016. "Natural-Kind Essentialism, Substance Ontology, and the Unity Problem: Two Dispositionalist Solutions." *Dialectica* 70:609–26.
- . 2019. *Dispositionalism and the Metaphysics of Science*. Cambridge: Cambridge University Press.
- Ellis, Brian. 2001. *Scientific Essentialism*. Cambridge: Cambridge University Press.
- . 2002. *The Philosophy of Nature: A Guide to the New Essentialism*. Montreal and Kingston: McGill-Queen's University Press.
- . 2009. *The Metaphysics of Scientific Realism*. Montreal and Kingston: McGill-Queen's University Press.
- Esfeld, Michael. 2009. "The Modal Nature of Structures in Ontic Structural Realism." *International Studies in the Philosophy of Science* 23:179–94.
- Florovsky, Georges. 1976. *Creation and Redemption*. Belmont, MA: Nordland Publishing Co.
- Foster, John. 2004. *The Divine Lawmaker: Lectures on Induction, Laws of Nature, and the Existence of God*. Oxford: Oxford University Press.
- French, Steven. 2006. "Structure as a Weapon of the Realist." *Proceedings of the Aristotelian Society* 106:167–85.
- Palamas, St. Gregory. 1983. *The Triads*, translated by Nicholas Gendle. Ramsey, NJ: Paulist Press.
- . 1988. *The One Hundred and Fifty Chapters*, translated by Robert Sinkewicz. Toronto, ON: Pontifical Institute of Mediaeval Studies.
- Heil, John. 2003. *From an Ontological Point of View*. Oxford: Oxford University Press.
- . 2012. *The Universe as We Find It*. Oxford: Oxford University Press.
- Ingthorsson, R.D. 2013. "Properties: Qualities, Powers, or Both?" *Dialectica* 67:55–80.
- Jaag, Siegfried. 2021. "A Puzzle About Laws and Explanation." *Synthese* 199:6085–102.
- Jacobs, Jonathan. 2011. "Powerful Qualities, Not Pure Powers." *Monist* 94:81–102.
- Jaworski, William. 2016. *Structure and the Metaphysics of Mind: How Hylomorphism Solves the Mind Body Problem*. Oxford: Oxford University Press.
- Kapriev, Georgi. 2018. "Gregory Palamas and George Scholarios: John Duns Scotus' Differentiation Between Substance and Energy and the Sources of the Palamite Tradition." *Analoga: The Pentapousia Journal for Theological Studies* 5:35–56.
- Katzav, Joel. 2005. "On What Powers Cannot Do." *Dialectica* 59:331–45.
- Keinänen, Markku. 2011. "Tropes - The Basic Constituents of Powerful Particulars?" *Dialectica* 65:419–50.
- Kimpton-Nye, Samuel. 2017. "Humean Laws in an un-Humean World." *Journal of the American Philosophical Association* 3:129–47.
- Knight, Christopher. 2007. *The God of Nature: Incarnation and Contemporary Science*. Minneapolis, MN: Fortress Press.
- Ladouceur, Paul. 2019. *Modern Orthodox Theology*. London: T&T Clark.
- Lange, Marc. 2004. "A Note on Scientific Essentialism, Laws of Nature, and Counterfactual Conditionals." *Australasian Journal of Philosophy* 82:227–41.
- . 2009. "Why Do the Laws Explain Why?" In *Dispositions and Causes*, edited by Toby Handfield, 286–321. Oxford: Oxford University Press.
- . 2009a. *Law and Lawmakers: Science, Metaphysics, and the Laws of Nature*. Oxford: Oxford University Press.
- Laudisa, Federico. 2015. "Laws Are Not Descriptions." *International Studies in the Philosophy of Science* 29:251–70.
- Louth, Andrew. 2004. "The Cosmic Vision of Saint Maximus the Confessor." In *In Whom We Live and Move and Have Our Being: Panentheistic Reflections on God's Presence in a Scientific World*, edited by Philip Clayton and Arthur Peacocke, 184–97. Grand Rapids, MI: Eerdmans.

- Maudlin, Timothy. 2007. *The Metaphysics Within Physics*. Oxford: Oxford University Press.
- McKittrick, Jennifer, Anna Marmodoro Marmodoro, Stephen Mumford, Rani Lill Anjum. 2013. "Causes as Powers." *Metascience* 22:545–59.
- St. Maximus the Confessor. 2014. *On Difficulties in the Church Fathers: The Ambigua*, Vols. 1 and 2. Translated by Maximos Constas. Cambridge, MA: Harvard University Press.
- Miller, Elizabeth. 2015. "Humean Scientific Explanation." *Philosophical Studies* 172:1311–32.
- Molnar, George. 2003. *Powers: A Study in Metaphysics*. Oxford: Oxford University Press.
- Mumford, Stephen. 1998. *Dispositions*. Oxford: Oxford University Press.
- . 2006. "The Ungrounded Argument." *Synthese* 149:471–89.
- Mumford, Stephen, and Rani Lill Anjum. 2011. *Getting Causes from Powers*. Oxford: Oxford University Press.
- Nesteruk, Alexei. 2004. "The Universe as Hypostatic Inherence in the Logos of God: Panentheism in the Eastern Orthodox Perspective." In *In Whom We Live and Move and Have Our Being: Panentheistic Reflections on God's Presence in a Scientific World*, edited by Philip Clayton and Arthur Peacocke, 169–83. Grand Rapids, MI: Eerdmans.
- Oderberg, David. 2007. *Real Essentialism*. London: Routledge.
- O'Leary-Hawthorne, John, and Jan Cover. 1998. "A World of Universals." *Philosophical Studies* 91:205–19.
- Plested, Marcus. 2019. "St. Gregory Palamas on the Divine Simplicity." *Modern Theology* 35:508–21.
- Raslau, Flavius. 2022. "Nature's Powers and God's Energies." *Zygon: Journal of Religion and Science* 57:60–82.
- Robb, David. 2005. "Qualitative Unity and the Bundle Theory." *Monist* 88:466–92.
- Schooping, Joshua. 2015. "Touching the Mind of God: Patristic Christian Thought on the Nature of Matter." *Zygon: Journal of Religion and Science* 50:583–603.
- Schrenk, Markus. 2017. *Metaphysics of Science: A Systematic and Historical Introduction*. London: Routledge.
- Shiver, Anthony. 2014. "Mereological Bundle Theory and the Identity of Indiscernibles." *Synthese* 191:901–13.
- Simons, Peter. 1994. "Particulars in Particular Clothing: Three Trope Theories of Substance." *Philosophy and Phenomenological Research* 54:553–75.
- Smart, Benjamin. 2013. "Is the Humean Defeated by Induction?" *Philosophical Studies* 162:319–32.
- Spencer, Mark K. 2017. "The Flexibility of Divine Simplicity: Aquinas, Scotus, Palamas." *International Philosophical Quarterly* 57:123–39.
- Steele, Jeff, and Thomas Williams. 2019. "Complexity Without Composition: Duns Scotus on Divine Simplicity." *American Catholic Philosophical Quarterly* 93:611–31.
- Tabaczek, Mariusz. 2019. *Emergence: Towards a New Metaphysics and Philosophy of Science*. Notre Dame, IN: University of Notre Dame Press.
- Tooley, Michael. 1977. "The Nature of Laws." *Canadian Journal of Philosophy* 74:667–98.
- Tugby, Matthew. 2013. "Platonic Dispositionalism." *Mind* 122:451–80.
- . 2016. "Universals, Laws, and Governance." *Philosophical Studies* 173:1147–63.
- Ware, Kallistos. 2004. "God Immanent Yet Transcendent: The Divine Energies According to Saint Gregory Palamas." In *In Whom We Live and Move and Have Our Being: Panentheistic Reflections on God's Presence in a Scientific World*, edited by Philip Clayton and Arthur Peacocke, 157–68. Grand Rapids, MI: Eerdmans.
- Whittle, Ann. 2009. "Causal Nominalism." In *Dispositions and Causes*, edited by Toby Handfield, 242–85. Oxford: Oxford University Press.
- Wilson, Jessica. 2022. *Metaphysical Emergence*. Oxford: Oxford University Press.
- Yong, Amos. 2008. "Natural Laws and Divine Intervention: What Difference Does Being Pentecostal or Charismatic Make?" *Zygon: Journal of Religion and Science* 43:961–89.