

Faith and Philosophy: Journal of the Society of Christian Philosophers

Volume 38 | Issue 1

Article 10

1-1-2021

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Recommended Citation

Rubio, Daniel (2021) "Jeffrey Koperski, DIVINE ACTION, DETERMINISM, AND LAWS OF NATURE," *Faith and Philosophy: Journal of the Society of Christian Philosophers*: Vol. 38 : Iss. 1 , Article 10.

DOI: 10.37977/faithphil.2021.38.1.10

Available at: <https://place.asburyseminary.edu/faithandphilosophy/vol38/iss1/10>

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Divine Action, Determinism, and the Laws of Nature, by Jeffrey Koperski. Routledge, 2020. Pp. 160. \$124.00 (hardcover).

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Jeffrey Koperski offers a philosopher of science's intervention in the debate over divine action, with the dual purpose of providing a scientifically-historically informed clarification of key concepts such as "determinism" and "law of nature," as well as proposing and defending his "neoclassical" model of divine action. Koperski frames the debate as between three broad factions: interventionists, who believe not only in ongoing divine activity that sustains creation, but also special divine action that violates the laws of nature; nonviolationists, who believe not only in ongoing divine activity that sustains creation, but also special divine action if it does not violate the laws of nature; and noninterventionists, who believe only in ongoing divine activity that sustains creation, not special divine action. Each of these factions is painted as searching for a way between the Scylla of Deism and the Charybdis of Occasionalism. Koperski's own view is a novel version of nonviolationism.

The book is clearly written. Koperski relies heavily on examples from physics, but the description is usually adequate for non-specialists to understand the philosophical point behind the examples, although most notably in the chapter on determinism things get somewhat technical. Philosophers and theologians working on divine action should find the book accessible enough, but I would hesitate to use it in an undergraduate course.

The book is organized into several blocs. Chapter one serves to lay out the key terms and distinctions that will come up in later chapters. Chapters two and three constitute an opinionated introduction to the divine action debate, with special focus in chapter three on arguing against the need for nonviolationists to rely on genuinely indeterministic interpretations of quantum mechanics and/or chaos theory. Chapters four and five focus on laws of nature, with four providing history of the concept and five surveying views of the metaphysics of laws of nature, ending in an endorsement of decretalism, the 17th-century view that laws of nature are literal divine commands regarding how physical objects are meant to move. Chapter six is a lengthy discussion of the concept of determinism and its relationship to physics, especially classical mechanics. Chapter seven introduces and defends Koperski's neoclassical theory of divine action, and chapter eight deals with some objections.



In the first key bloc, Koperski's main concern is to clear enough ground to motivate a new account of divine action. The chapters serve this purpose adequately. While he critiques a number of views, the focus is on whether nonviolationist accounts require quantum mechanics, and in particular indeterministic interpretations such as Copenhagen or GRW. The short answer is no. In particular, he presses a problem of quantum randomness "washing out" at higher levels. Even if there is genuine indeterminism at the quantum level, he argues, there are large (though not exhaustive) higher level "quantum protectorates" whose properties are not sensitive to minor variations at small sizes. Many microstates can fit a single macrostate. Since we are interested in divine action as a macro-phenomenon (voices, tongues of flame, healing the sick, etc.) rather than a micro-phenomenon, if the genuine indeterminism is at micro-scales, some kind of amplifier is needed to get the openness to divine action that quantum indeterminacy is meant to provide into the right levels of reality. While these amplifiers are not unheard of, promising candidates such as chaos theory do not work. Koperski does not provide a decisive reason to think that there aren't amplifiers out there, but he does enough to motivate a view that does not require specific interpretations of quantum mechanics.

The next key bloc discusses the concept of a law of nature, first historically and then by reviewing popular proposals for a metaphysics of laws. In particular, Koperski is interested in the historical transition from an Aristotelian "powers and liabilities" account of regularities in nature, according to which we see regular patterns in the behavior of physical objects because of the powers and liabilities inherent in the natures of things, to a decretalist account whereby these regularities are produced by divine decrees concerning how physical objects should behave. These chapters also function as an argument for decretalism.

At the heart of Koperski's version of decretalism sits Murray Gell-Man's totalitarian principle. While ominous-sounding, it simply states that anything not prohibited from happening eventually will. Thus, according to Koperski, the laws of nature guide the evolution of the universe not by proclaiming how it must happen, but by setting out how it cannot. This means that the true laws look somewhat differently than we typically think of them. Newton's $F=ma$, for example, is not in the right form for a constraining law. Unfortunately, Koperski never provides an example of what this kind of law would look like written down. But it would be quite different from what we are used to.

The standard dialectic in the metaphysics of laws pits "governing" conceptions of law against Humean ones. For Humeans, laws are parasitic on the tapestry of actual objects, properties, and events. They do not guide change; they describe and unify it. By contrast, governing conceptions of law see the laws as the drivers of change. For Koperski, laws are not drivers of change; this role goes to things like forces, energy, and other properties of events and objects. But they are not simple, logically strong summaries of the Humean mosaic either. They serve to shape the way in

which the drivers of change manifest themselves. Like governing laws, they partially metaphysically explain why events occur. But they do so by blocking certain evolutions rather than by demanding them.

All Koperski needs this section to do is show that there is some reason to entertain a decretalist account along the lines of the one he favors. It accomplishes this relatively modest goal, though with not much room to spare. Some of the critiques of rival accounts of laws fall flat. For instance, he accuses David Lewis of substituting law-statements for laws, with unfavorable results like the non-existence of laws before there are written languages (90). This is an error. For Lewis, laws are propositions (See *Counterfactuals* (Blackwell, 1973), 73) which do not exist only at particular times but eternally. Moreover, Lewis's laws are the axioms of the best system from which a complete description of the Human mosaic (the totality of particular matters of fact) can be derived. When Koperski accuses Lewis of doing away with laws (90), it is he who mistakes law-statements for laws. Or, more accurately, sentences for propositions.

The next bloc discusses determinism, with something of a reverse theme of chapter three. In the third chapter, Koperski argued that the reliance on quantum mechanics among nonviolationists was unwarranted, because quantum mechanics is not as reliably stochastic as they think. Several major interpretations are deterministic, including the increasingly popular Everettian/many-worlds interpretation. In chapter six, he argues, classical mechanics is not nearly as deterministic as philosophers make it out to be. The discussion proceeds twofold. On the one hand, Koperski explains some well-known bits of philosophy of physics, such as the famous "Norton's Dome" thought experiment, that show that classical mechanics is indeed not deterministic in the way philosophers typically understand determinism. On the other hand, he argues that the motivations for determinism are often methodological. Laws that are not deterministic do not make uniform predictions, and so breakdowns of determinism are in many cases treated as problems for a physical theory. However, if our interest is not in making uniform predictions but in discovering whether or not future facts are fixed by some combination of past and present facts that are beyond our control, this is not a good reason to make a theory deterministic.

The discussion of the relationship between determinism and classical mechanics is sure-footed, historically informed, clear, and reinforces the lesson from chapter three that quantum mechanics did not suddenly make room for God. However, quantum mechanics was curiously absent from this discussion. As we saw in chapter three, some interpretations of quantum mechanics are not deterministic (Copenhagen, GRW) while others are deterministic (Bohm, Everett). In chapter six we encounter two early modern conceptions of determinism: one, associated with Laplace, where a demon with unlimited computational power, complete knowledge of the laws, and complete knowledge of the state of the world at one time could predict the entire world's history; another, associated with Leibniz,

requires causally sufficient antecedents for any event. Is the determinism of the deterministic interpretations of quantum mechanics like these? Or is it too, as Koperski convincingly argues in classical mechanics, a pragmatically-driven “shaping principle”? The significance of the discussion of determinism for the main project hangs on the answer to this question, because while classical mechanics does not describe our world’s fundamental laws, quantum mechanics might. A more direct confrontation would have been helpful.

The final bloc of chapters lays out and defends the neoclassical theory of divine action that is the book’s main contribution. The view starts with a decretalist account of laws. Laws constrain how forces work, but are not themselves forces. Laws or systems of laws are deterministic insofar as they yield equations with uniform results. In action, the background picture of laws and determinism looks somewhat like this: consider a single particle with set initial conditions that is subject to two forces: gravity and electromagnetism. One law tells us how the force of gravity affects the particle’s movement. Another law tells us the same for electromagnetism. These laws are divine decrees, which say what kinds of entities the relevant forces will affect and how/how not. But the forces themselves do all the pushing. These laws combine to give us an equation, which is not itself a law, which tells us how the particle will move.

So far so good. Now suppose God wants to use that particle in some act, perhaps sending it and a bunch of its particle friends to combine with water to make wine. God’s influence on the particle is simply a third force acting on it, alongside gravity and electromagnetism. The equation governing its motion will be different, but neither the laws constraining gravity nor electromagnetism will be altered. In so doing, God neither alters nor overrules any of the relevant force laws nor violates determinism in Koperski’s sense. This is the neoclassical view of divine action in action.

The remainder of the book is devoted to objections, starting with conservation laws. One longstanding worry about divine action is that, since God can create energy *ex nihilo*, divine action will violate various conservation laws. In our example above, we might ask: where did the third “force” acting on the particle get its energy from? Here Koperski adverts to his approach to determinism. Conservation is not forced on us by the science, but is a metatheoretical principle governing good scientific practice. Other objections include a Thomistic concern about God acting as a cause in the same way creatures do, a concern that decretalist laws are too weak, and that the neoclassical model allows too much latitude for noninterventionist divine action, a Humean objection that the neoclassical model employs a “God of the gaps” methodology, and a concern that the neoclassical model is occasionalist. The discussion of these concerns is brief, but adequate. For the goal of advancing a new model and showing that a reasonable first-pass response may be offered to the most obvious objections, it works.

In summary: Koperski aims to offer a new model of divine action, in the process providing discussions of determinism and laws of nature from a philosophy of science perspective. While I remain agnostic as to the adequacy of Koperski's model, I found its introduction interesting and generally scientifically and historically well-informed. I would have liked to hear more about neoclassical divine action in a world whose fundamental theory is something like an Everettian or Bohmian theory of quantum mechanics, and I thought there were some weaknesses in the discussion of the metaphysics of laws of nature. But it is clear to me that Koperski has advanced a novel and credible contender for a theory of divine action, and that is no small achievement.

A Philosophical Theology of the Old Testament: A Historical, Experimental, Comparative and Analytic Perspective, by Jaco Gericke. Routledge Publishing, 2020. Pp. viii + 163. \$155.00 (hardcover).

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Old Testament (OT) scholars and analytic philosophers each employ technical language in ways that make it difficult for practitioners of one discipline to fully grasp what practitioners of the other discipline are saying. The potential for miscommunication between two disciplines, however, is a common roadblock for interdisciplinary work in general. But when such obfuscating and technical language is combined with caricature and dismissive attitudes between two disciplines, the potential for fruitful interdisciplinary work moves from merely difficult to practically unimaginable. This is the sort of impasse, in Gericke's estimation, found at the intersection of OT scholarship and philosophical theology. In *A Philosophical Theology of the Old Testament*, then, Gericke is self-aware as he enters into this interdisciplinary project between OT scholarship and philosophy, and he painstakingly chisels away at the confusions and befuddlements facing OT scholars concerning the nature and possibility of philosophical theology. Importantly, Gericke is himself an OT scholar (i.e., with a D.Litt in Semitic languages and a Ph.D. in Theology), so he is critiquing a guild from the inside, as it were.

Gericke begins with a chapter in defense of the claim that, as a general rule, OT scholars only "rarely, briefly and mostly negatively" speak about philosophical theology (1). That is, OT scholars, in Gericke's experience, tend to write off philosophical theology as antithetical to the project of biblical theology. Illustrative of this is the following reference to R. P. Carroll:

