



ORDER: GOD'S, MAN'S AND NATURE'S

Laws, Mind and Free Will, by Steven Horst, Cambridge, Mass.: The MIT Press, 2011

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Steven Horst's fascinating and very readable new book investigates the connections between three areas of philosophy which frequently remain distinct. The first part, *Laws and the Mind*, consists in a critique of reductionism in the philosophy of mind, and of the conception of laws of nature which treats laws as making universal claims about how objects actually behave. The second explores the implications of these conclusions about the nature of laws for the free will debate. The third section is composed of three in-depth case studies about the application and the consequences of his account of laws in experimental psychology, including psychophysical laws and models of vision between the properties of stimuli and neural states, modelling cortical dynamics, and the characterization of belief-desire psychologies. While the first section of the book contains the foundations upon which Horst's later conclusions rely, one can treat the latter two sections as being independent and read them (or ignore them) according to one's interests, a fact which Horst acknowledges at an early stage. Since I will not be able to do justice to the case studies in the space available, I will concentrate upon the former two sections of the book for the purposes of this review.

The critique in the first section has two main philosophical targets, both well-known opinions which are prevalent in the philosophy of mind and science: the empiricist account of laws (or, more usually, of physical laws) that treats laws of nature as being universally applicable generalisations describing the actual behaviour of entities in the natural world; and the traditional position, or positions, in which psychology has been placed in this picture in order for its scientific and ontological credentials to be maintained. Horst traces the potentially problematic asymmetry between psychology and non-psychological laws to the work of Donald Davidson, namely to his thesis of the anomalism of the mental which denies the existence of strict psychophysical and psychological laws, while the laws of physics are 'strict and exceptionless' with every causal instance being subsumed under a physical law. This view has problematic consequences, he thinks, for the status of psychological and psychophysical laws as being genuinely explanatory, and for the reality, objectivity, or naturalness of psychological kinds on the basis of the additional premise that such ontologically primary kinds are those which appear in genuine laws. According to

Horst, the difficulties concerning the vindication of psychology can be remedied once we realise that the empiricist conception of laws is mistaken, and for this critique he takes Nancy Cartwright's work on laws as his starting point. However, for his positive account of laws, he diverges from her views, while maintaining some of her principal insights, to develop a view of laws which he describes as 'cognitivist, pragmatist, and pluralist', or 'Cognitive Pluralism' for short.

The discussion of this first section is both welcome and timely, since metaphysical issues such as those surrounding laws, natural kinds and causality are frequently overlooked in discussions within the philosophy of mind, and also in the debate about free will. It is perhaps too commonly presumed by philosophers that the characterization of laws is uncontroversial, or that any controversy arising within metaphysics or the philosophy of science could not have a bearing upon the plausibility of one's account of psychology, and this oversight has led to some entrenched difficulties and intractable debates concerning the ontology of mind and mental causation, and the plausibility of empirically robust psychological explanation. Furthermore, in the philosophy of science, work such as Cartwright's has often been treated as peripheral due to its radical conceptual shift from traditional empiricist and realist views of science, and the details not accorded the attention they deserve. Horst's monograph provides an interesting and original remedy to both these difficulties, developing a view of laws and models similar to Cartwright's, then exploring the interesting consequences of this for the relevance of many debates about naturalism and reductionism of the previous fifty or so years, most of which have presupposed the empiricist account of laws.

Although Horst relates his work on laws to that of Cartwright, Ian Hacking and Ronald Giere, there is a peculiarity in the role he assigns to Davidson in his diagnosis of what has gone wrong in the philosophy of mind. Horst attributes the widely-accepted asymmetry between strict physical and merely *ceteris paribus* psychological laws to Davidson's anomalous monism; an asymmetry which—as 'the Davidsonian Problematic'—he deems to be responsible for the need for explanatory vindication and ontological grounding in psychology. Yet, despite the close attention which Horst pays to the nature of laws later in the text, he seems not to notice that Davidson's non-realist view of predicates and laws makes him something of a kindred spirit. Anomalous monism does not make physical theory more real than the mental, nor imply psychological epiphenomenalism, if one sticks to Davidson's account of causality and nomological ontology with the former being presupposed as an objectively existing phenomenon, while the latter is at least partially dependent upon the theorizers themselves. The psychological and physical theories are simply different, with the kinds and thus also the laws connecting them, being formulated and applied according to different constitutive principles. Moreover, Davidson's solutions to both the problem of free will, insofar as he broaches the subject in 'Mental Events', and his explanation of the potential causal closure of the physical (the grounds of the cause-law thesis in 'Laws and Cause' (1995)) are Kantian in flavour, rather than universal deterministic laws being a real objective feature of the world. Overall, the discussion of Davidson seems to accept too much from

the more realist interpretations of his work, such as the early misreadings from Jaegwon Kim, rather taking account of its rather pragmatic, rather pluralist, and perhaps also slightly cognitivist leanings. Although Horst does not appear to realise it, Davidson may well have approved of Horst's conclusions about science and the mind.

Despite the overlooked similarities, Horst is correct to point out that Davidson is among those who fail to question the logical form of laws as universal generalizations, and that his contrast between the strict, exceptionless, deterministic laws of physics and the *ceteris paribus* ones of psychology, is terminologically unfortunate to say the least. But, while Horst agrees with Cartwright's negative view that laws cannot be treated as universally quantified claims ranging over real objects and events, since this would render them false, he disagrees with her about the positive account of laws which might be offered in place of the empiricist conception. For Horst, laws of nature can only be understood as their belonging to a model, within which a particular law is true or false, while the models themselves are either apt or inapt to capture or partially capture the causal actions and interactions occurring in the situation being modelled. In addition to its explicitly noted similarities with Cartwright's view, and the ones previously noted with Davidson, there are also some parallels with Nelson Goodman's *Ways of Worldmaking* and Hilary Putnam's internal realism.

Insofar as the book attempts to alleviate problems about free will, it does so in quite a modest way, with Horst providing what he describes as no more than 'a compatibility proof'. First, he argues that laws of nature do not entail the truth of determinism, and thus that some form of libertarianism is compatible with the existence of laws; second, he argues that the existence and prevalence of laws in the different psychological models discussed in the third part of the book do not preclude libertarian free will either. In some ways, these conclusions should come as no surprise to those who maintain a cognitivist view of laws, or similar accounts in which laws are not literally true of objects and events in the world. The combination of abstraction and idealisation involved in modelling the behaviour of objects and events, and the bracketing of aspects which are irrelevant to or which complicate each particular model, suggest that scientific explanation will comprise a variety of distinct, incommensurable models. This plurality does not suggest the likelihood of a unified science which maps the way in which the world is causally governed (if it is causally governed) and thereby grounds determinism, which potentially leaves 'gaps' between our models of the world in which libertarian free will might anomalously act. Libertarians can take the stance that their genuine free will is the kind of phenomenon which a theorist would idealise away from in formulating a model.

However, more interestingly perhaps, Horst also points out that one does not have to agree with his positive story about laws in order to reach the conclusion that laws do not entail the truth of determinism. One requires only his and Cartwright's objections about the applicability of combinations of laws to actual causal instances, such as the failure of prediction according to Newton's law of universal gravitation when charged entities are involved. Even on empiricist

accounts of laws, Horst claims, determinism only follows given further assumptions, such as the principle of causal closure, or the composition, or unification of forces, each of which require independent support. These points would make his main argument stronger, but it is here that Horst might find it hard to attract supporters of the empiricist view into his camp, at least as regards his account of free will. His objections in Part One to the empiricist view of laws, and his defence against other ways in which determinism might be upheld in Chapter 9, both involve the rejection of some empirical and philosophical principles which are intuitively plausible and widely supported in both science and philosophy, and thus which many of Horst's opponents might be reluctant to give up. Among the former are rules about the composition of forces (or relations between other causal properties), needed to combine laws in order to give kinematic predictions, while the latter involve the causal closure of the physical, the conservation of energy, the denial of causal overdetermination, in addition to the aforementioned unity of science. Of course, the intuitive plausibility of some of these principles is most probably due to their long being entrenched in empirical science, and so their popularity is no guide to their truth, or to their universal applicability. Moreover, on close philosophical inspection, some of these philosophical and empirical principles do seem difficult to support, especially without begging the question about the law-governed nature of the world which Horst rejects.

Nevertheless, although they seem internally consistent, the arguments in this part of the book are a little sparse and fail to convince at times. Horst relies a little too often on the perfectly respectable (but rather weak) point that a this-or-that principle might not be true, or that we don't currently have evidence to think it true. Although, in his defence, he insists that he is merely protecting philosophy from illegitimate a priori claims, and would be happy to accept such principles were they to be shown a posteriori, he does appear to beg the question against the success of future empirical science without much basis to do so. For instance, the likely failure of science to be able to empirically measure the exogenous causes of libertarian free action is attributed, in part, the fact that 'the energy imparted would most probably be extremely small' (123), while other interchanges of energy that would 'drown out any blip caused by libertarian decisions' (124). But it is not really clear why that should be, nor why we should take the pessimistic stance that scientists could not develop a way around this problem. (More worryingly, although this may be an editorial failure, the conservation of matter/energy of the First Law of Thermodynamics is described as the 'Second Law of Thermodynamics' in the course of this discussion (124-5).) Similarly, the contradictions between General Relativity and Quantum Mechanics are treated as all but intractable.

Despite these reservations, I think that Horst is right to question the justification for the well-entrenched empirical and philosophical beliefs and principles, and to highlight the fact that they do not have direct empirical support, but it would be interesting to see his arguments developed more fully. Moreover, he might find that he has a stronger argument to hand. Since some of his reasoning already requires adherence to his cognitive pluralist account of laws, it seems open to

him to have argued that even a future model which did subsume all causal interactions under a comprehensive unified system of laws would not imply the truth of determinism, nor threaten the existence of free action. Such a model might simply have idealised away from the relevant anomic behaviour of the will and subsumed any observable effects under laws which are the result of our cognitive make-up rather than features of the world. In short, Horst does not need to sustain intransigent scepticism about the possibility of future unification or future 'complete' theories to sustain his views. While Horst might not wish to take this line, since it threatens the minimal realism in his account about what models tell us about the world, he does employ a the similar strategy in Part Three concerning models of the mind which appear to leave no space for anomic free action.

The extent to which features of our cognitive make-up impinge upon our view of the world is not lost on Horst, however, and he realises that this aspect of cognitive pluralism presents a potential problem for his account of the consistency of laws and free will: could his conviction that his actions are anomic and truly free be an artefact of his cognitive make-up? For his cognitive pluralist project to have this consequence seems unfortunate, but one cannot help but admire his intellectual honesty in admitting that it does. Nevertheless, libertarian free will is a phenomenon which Horst believes in, and his project to protect it works for all those who share that intuition if they also accept his cognitive pluralist account of laws. For those not solely concerned with the problem of free will, the book also has many interesting points to make about laws, and models and the study of the mind.