The logical form of laws of nature
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Within philosophy, the logical structure of scientific laws is often expressed in the form $\forall x(Fx \supset Gx)$. Needless to say, recent literature in philosophy of science is overflowing with criticism of this caricature. Tim Maudlin has complained, with regard to Newton's law of gravity and Schrödinger's time-dependent wave-equation, that "[n]o doubt these can be tortured into a form similar to $\forall x(Fx \supset Gx)$, but it is hard to see what the purpose of the exercise would be" (2007:11). More generally, we must concede that equations do not clearly have the form $\forall x(Fx \supset Gx)$. But if many of the so-called 'laws' in science are represented as equations, how can this schema capture their logical form?

I will offer an argument which concludes not only that we can render many of our laws commonly expressed as equations in the form $\forall x(Fx \supset Gx)$, but that doing so is conceptually necessary and so, pace Maudlin, both useful and untorturous.

Focusing on the gas law as a case-study, I argue that any plausible interpretation of the equation "PV nRT" either renders it a denoting expression for a set of functions, and therefore non-propositional, or else a trivial falsity about second-order relations over properties or a trivial truth of mathematics. For the equation to be informative and general I argue that we must understand its property-terms as predications of a variable bound by the universal quantifier. I then show that the resulting statement is still trivially false unless we qualify it with the antecedent clause that any value taken be an instance of a particular system-type: an ideal gas. Hence the ideal gas law is shown to be an instance of the schema $\forall x(Fx \supset Gx)$.

This argument generalises to all equations commonly used to represent laws as well as those, such as the Lotka-Volterra and Schrödinger equations, not directly associated with any 'law'. I end by drawing some conclusions for the debate on ceteris paribus laws, ideal-system laws and the nature of 'governance'.

Natural vs. Artificial Distinction
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From the philosophical point of view the distinction between natural and artificial is the basic question that fundamentally affects other considerations and conclusions in many fields of philosophy of science (e.g. experimental and theoretical practice of science; biological sciences; natural and cultural dimension of science; artificial intelligence; etc.). The intuitive and traditional position of this distinction can be connected with the strict separation of these opposites. In this case, the separation alone is dependent on whether something is man-made or not. On the other hand there are many instructive examples (e.g. artificial and natural selection; Hacking's conception of natural and artificial in the experimental practice of science; distinction between natural things and artefacts), which show that the distinction is not so sharp. From this perspective, we cannot claim that anything is purely natural or unnatural. We must accept that "instead of opting for an absolute distinction of quality between the artificial and natural, one should accept only a gradual distinction of degree" (Bensaude-Vincent and Newman 2007). I want to show that not only this distinction can have a range of graduality, but it can disappear in an appropriately chosen perspective. This philosophical perspective finds some support in Daniel Dennett’s conception of
intentionality (Dennett 1996). What is attractive in Dennett's conception is the insight into the genesis of intentionality and understanding that the prime apparent distinction between intrinsic and derived forms could disappear. Based on Dennett's conception of intentionality I try to show that besides the traditional conception there is another perspective in which the natural-artificial distinction disappears. Some conclusions will be considered in the various fields of philosophy of science.