

Wittgenstein's Philosophy of Science in the *Tractatus*

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Few propositions in Wittgenstein's *Tractatus* have sparked as much controversy and debate as the 6s. The 6.4s on ethics and 6.5s on method have featured prominently in the literature, but the entire structure of proposition 6 has not always been fully appreciated. Wittgenstein introduces there a "general form of truth-function", which he identifies with "the general form of proposition". He then goes on to introduce general forms of both the operation and the cardinal number. His comments on proposition 6 culminate in 6.031, where Russell's theory of classes is dismissed as "altogether superfluous in mathematics" and this because, he argues, "the generality which we need in mathematics is not the *accidental* one". After devoting the 6.1s to the propositions of logic, conceived in 6.11 as "analytical propositions", and the 6.2s to the propositions of mathematics, viewed in turn as "equations" or "pseudo-propositions", Wittgenstein returns surreptitiously in 6.3 to the conclusion drawn in 6.031. "Logical research", he writes, "means the investigation of *all regularity*" in such a way that "outside logic all is accident". This is the motto to his propositions on scientific representation, which lay down the philosophy of science of the *Tractatus*. The core of Wittgenstein's view is the denial in 6.31 that the "so-called law of induction" – probably a reference to Russell's Lecture VIII of *Our Knowledge of the External World as a Field for Scientific Method in Philosophy* – can have the status of "a logical law", an assertion he elucidates by saying that "it cannot be a law a priori either". Wittgenstein emphasizes this point in 6.3211 when he forcefully claims that "the a priori certain proves to be something purely logical". Interestingly, Wittgenstein distinguishes in the next proposition, numbered 6.33, between *believing* and *knowing* a priori. His argument is that while one does not "*believe* a priori in a law of conservation", one does "*know* a priori the possibility of a logical form". Belief, by definition, falls outside the domain of the a priori since it admits the possibility of disbelief and is primarily an act of will. Believing a priori would be binding and tantamount to knowing a priori. Knowing, however, is an epistemic mode that can be either a priori, when something is necessarily the case, or a posteriori, when it is accidentally or contingently the case. Wittgenstein's point is that, rather than *knowing* an induction law, we do no more than *believing* in it. But contrary to the prevailing interpretation, the a priori still plays a quasi-synthetic role. In 6.34 Wittgenstein talks about various scientific laws as "a priori intuitions of possible

forms of the propositions of science”. He further compares in 6.341 “the system of numbers” to “the system of mechanics” before highlighting the significance of geometry. This is characterized in 6.35 as a “network” that “is *purely* geometrical” in the sense that “all its properties can be given a priori”. The ultimate aim of this paper is then to explain why Wittgenstein contends that the epistemological “process of induction”, alluded to in 6.363 and 6.3631, lacks a “logical foundation” but instead rests solely on “psychological” grounds. Wittgenstein’s emphasis on belief at this juncture, I shall argue, is actually congruous with his earlier definition of epistemology, in 4.1121, as “the philosophy of psychology”.