HPL, book review


The book under review, which was awarded the prestigious Jean Cavaillès prize in 2015, offers an original investigation of the “correlation problem”: Is every universal truth necessary? Is every necessary truth universal?

Chapter I is devoted to a presentation and analysis of the problem; chapters II and III offer, respectively, a criticism of the Kantian solution and a useful critical overview of post-Kantian approaches from Husserl to Kripke, with a strong emphasis on Wittgenstein’s *Tractatus*. Chapter IV and V, somewhat less historical in character, discuss the twin notions of absolute generality, as it plays a role in, e.g., impredicative definitions, and of logical validity, especially when construed within model theoretical and set theoretical frameworks. The key role of these chapters is to provide a critical motivation for chapters VI and VII, which propose to radically dissociate the notion of necessity from that of universality. The dissociation (*déliaison*) leads the author to defend in chapter VII and in the conclusion what might be called a neo- or, better, post-rationalist position with respect to a priori knowledge and universal truths, a position with strong constructivist overtones. An index of notions and an index of symbols would have been useful, but this is a minor complaint given the quality of the monograph in both its historical and conceptual dimensions.

Its central point is to argue against the view that the concepts of (non-contingent or non-accidental) universality and of necessity are either
synonymous or coextensive. It is therefore crucial, in this perspective, to show that they do not provide, pace Kant, twin criteria, or twin sufficient conditions, of a priori knowledge, i.e. of any knowledge which may neither be secured nor justified by experience. Given that universal truths are not contingent, in the sense that they may not be reduced to a mere factual enumeration of instances (I, 23), a key point of Halimi’s argumentation is that the non-contingent generality of the truth of a general proposition may not be severed from its proof: the universality of its truth must on the contrary be built into it (I, 24-25), so that the recognition of the proof’s validity and the recognition of the universality of what is proven are two aspects of the same thing. Of what thing exactly? Of the necessity of what is established by the proof, not only in the light of Wittgenstein’s understanding of proofs by mathematical induction (either strong or weak), but also, it seems to me, in the light of the kind of “trans-contextuality” and of the construal of variables as “structured variables” defended by the author in the more original chapters.

The Wittgensteinian view, Halimi argues, yields what he might well have called a “modality paradox” with respect to the claim (dubbed “K”) that “Every universally true proposition is necessarily true.” The truth conditions of K presuppose that the very necessity of K cannot be “verified.” Halimi concludes that K is self-refuting (I, 27). The burden of proof now rests with him to defend a view of necessity, universality and a prioricity which doesn’t fall prey to the following dilemma: either universality de facto includes the totality of possibles and the iteration of the necessity operator must be ruled out, or it doesn’t and universality neither implies nor embeds necessity. This is no mean feat and Halimi faces the challenge squarely, both in historical terms when judging how much progress previous analyses of modal notions, absolute generality and logical validity have achieved in this respect, and when proposing modal demultiplication (as opposed to modal iteration) and the introduction of topological considerations in modal semantics in chapter VII.
In a nutshell, modal demultiplication is the idea that to each syntactic iteration of the necessity operator there corresponds a uniform demultiplication so that a set of sets of possible worlds is nothing but the actual world relative to an iteration. Even if Kripke semantics failed to take into account the semantic consequences of modal iterations thus construed, it does nevertheless take into account the totality of possible interpretations of modal formulae. It isn’t clear why a move to a higher level is needed in this instance, just as it is unclear why Leibniz’s definition of necessary truth as truth in all possible worlds is illegitimate: it is expected that all truths be treated here on a par (sur le même plan) (VII, 199-200), and that is indeed quite different from merely postulating, without any independent argument, a closed universe (univers clos) of all possibles. It is thus also somewhat puzzling to read in the historical survey of chapter III that Kripke’s problem (Is the a priori equivalent to necessity?) is distinct from the correlation problem (III, 75). It isn’t strictly speaking — granted — the very same problem. Regardless. After all, another associated correlation problems lurks in the background, as is does indeed throughout the book, not only given Kant’s transcendental conception of the a priori, but — and this is what really matters here — whether or not Halimi’s déliaison has been established: Is our knowledge of necessary truths a priori? Is our knowledge of universal truths a priori?

Halimi argues in favor of demultiplicative semantics, based on previous work by Masini, Gabbay, Baltag and Fine. One of the key points of modal geometry is to provide a model strong enough to be true to the demultiplicative insight that whenever a modal operator is introduced, formulae must be evaluated at a level higher than that of the introduction. Propositional variables must thus be interpreted as a set of curves (VII, 214). The counter-intuitiveness of the proposal doesn’t matter so much as the claim that this construal clearly contrasts with the “external” or contrived Kripkean construal of the familiar notion of
accessibility. One would like to read more of this opposition since it plays a key role in the déliaison thesis.

The sections of chapter VI devoted to genericity (généricité) with respect to the question of how absolute generality or universality is to be construed, are among the most interesting and the most controversial of the book. If an object is generic insofar as the very possibility of referring to the totality to which that object belongs is to be secured without any appeal to modalities, the transversal or transcontextual character of mathematical frameworks will have to play a key role in the construal, with the proviso, or consequence, that the very universality of mathematics itself will consist in its capacity to unify transcontextuality without privileging one theory over others (say, typically, set theory). If I get the gist of Halimi’s argument correctly, structured variables and the introduction of topological notions in semantics are called to the rescue to give the correct model of that particular feature of mathematics. There remains of course the question of the absolute generality of the logical constants if they are to be interpreted in terms of sets of curves. Halimi says little about how this would work for the constants of the propositional calculus per se (either classical or intuitionistic), although the case of complex mixed formulae (with occurrences of both modal formulae and non-modal formuale) is taken into consideration with great detail.

Necessity and a prioricity do not part company that easily, at least in the Lewisian sense that if it is a necessary truth that \( p \), then believing that \( p \) is an infallible method of being right. If this insight is correct, it must be so whatever the subject matter. But it would be odd indeed to claim that it is so no matter how \( p \), or the truth of \( p \), comes to be believed. Infaillibility in that sense may not bring about the sort of non-contingent universality we’re interested in (as Halimi’s opening remarks on mathematical induction clearly suggest). This might indicate that epistemic necessity could be a key notion in the correlation debate. It would have been useful, in any event, to have it play a role in Halimi’s
defence and overall dialectic, e.g. in his discussion of the synthetic a priori for the historical part, and in his discussion of Kripke semantics in relation to the iteration of the modal necessity operator vs. the (alleged) non-iterability of modality as it were per se, for the more constructive or positive part. In the first case, because of these properties that, say, geometrical objects possess insofar as they are an object of our intuition and may not be extracted, either from a general concept, or from any of its individual instances. In the second case, because the idea that we would assert more when asserting that it is necessary that it is necessary that \( p \) than when we merely assert that it is necessary that \( p \) flies in the face of the idea that whatever we deem necessary or necessarily true relies on contingent features of the laws of our understanding, so that, necessity is always necessity relative to us.

But it would be churlish to complain at this point. I haven’t done justice to all the analyses of the book, e.g. to the discussion of Williamson on absolute generality (as the referent of the expression “absolutely everything”) in Chapter IV, or of Etchemedy’s and de Rouilhan’s conflicting views on logical validity and necessity as defined model theoretically by Tarski in Chapter V. One should be well advised to read the book and use it as a starting point for further philosophical investigations into the correlation problem and its philosophical and logical cognates.