Logic Naturalized: A Case Study for Sellars

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Abstract

I take deductive logic as a normative practice of truth-preserving inference. First I will argue that attempts to naturalize logic, i.e. to locate logical validity in the empirical world and recover it with the help of our best scientific theories, are circular in a vicious way. The concrete attempt I have in mind is (Maddy 2007). This gives rise to a contradiction: the validity of some basic logic seems self-evident, yet one cannot justify basic logic empirically. In the second part of my talk I want to explore the possibility of Sellars' account of a *manifest* versus a *scientific* image as a philosophical elucidation of this paradox. I take three steps: (i) How could this problem be captured within the Sellarsian double framework? (ii) Accordingly, why is there a contradiction? (iii) Are there solutions to the paradox?

Maddy's (2007) attempt works as follows. We have 'a logic', i.e. we are cognitive agents with the ability to represent and make inferences about the world on the basis of a syntax. Our language has a core syntactical frame – imagine something like the syntax of classical predicate logic. The interpretation of this syntax corresponds to a world of objects and properties, to conjunctive, disjunctive and conditional relations. Our best physical theories are compatible with such a course-grained ontology: e.g. if we assert that *Pa and Qa* and this is true, then it also seems to be a matter of fact that the individual denoted by *a* has properties *P* and *Q*. Arguably, this also holds for the assertions produced by some of our inferences we recognize as valid. Another story explains the ability, partly innate, partly acquired during early development of cognition, to organize our experiences by such a syntax. This is supported by research in developmental psychology, and the background story of evolutionary biology explains why there are such causal links in the first place.

Maddy takes her scientific explanation as a justification of basic logic. But then there is a problem of circularity. Our best scientific theories support reliability of logic, but deductive inferences like *modus ponens* or *universal instantiation* are presupposed in the process of scientific revision and justification. One could try to avoid the circularity by a holistic approach: you take it as a hypothesis that some basic deductive inferences are valid, and you argue from all scientific evidence and successes that this hypothesis is most likely. But even such a probabilistic justification is circular. Once you want to spell out neatly these probabilistic considerations, you rely on mathematics, which in turn presupposes logic.

Now let's proceed with a Sellarsian reading of the problem. In *Philosophy and the Scientific Image of Man* Sellars distinguishes between *manifest* and *scientific* image as man's image of the world stemming from how he came to be aware of it versus a 'theoretical' or 'postulational' image of the world (p. 6-7). The images entail different ontological categories with a different history. Logic in the manifest image is situated in the broader context of

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reasons and arguments, and there is a sense of good and bad in this. There is evidence from both philological sources (Dutilh Novaes 2015) and evolutionary theory (Mercier & Sperber 2011) that logic has arisen in pre-scientific times in particular from social encounters. Sellars has accommodated a social dimension in his manifest image (p. 16-17). The scientific image of logical reasoning involves theory about cognition and the world.

I argue that the contradiction about logic is a special case of *the clash between* manifest and scientific image. In my view, Sellars spells out a state of equilibrium: what remains is the threat for the manifest image to be wiped oud by the scientific image on the one hand, and the threat for the scientific image to miss out the full image of 'man-in-the-world' on the other (cf. p. 18, 38). With respect to logic, each threat represents one direction of the contradiction.

Regarding the former threat, it is problematic to justify manifest logic on empirical grounds. But logical reasoning has – like everything – its place in the scientific image, so when this doesn't provide justification, maybe the right scientific view is that logical validity is nothing but a useful illusion. So the paradox would be solved – quite uncomfortably – by saying that this manifest game is far from evident, perhaps ultimately untrustworthy.

Regarding the latter threat, I read Sellars as follows: the premise of scientific description of social normative phenomena is to reduce particular instances of a common practice to more general claims, but then you miss out on the personal stance within the practice (p. 39). Suppose we take the general claims as our guide. Yet what we should do in a particular case is not justified by any general theoretical knowledge about ourselves, but by what we think we should do in the given case. With respect to logic, a particular inference is not valid because of the fact that our inferences are generally reliable with respect to the world, but because we think we are not mistaken in the given case. So the paradox would be solved by saying that general theory might be informative about logical practices, but that the justification of these practices doesn't lie within its scope. We have instead good reasons that are available in our practices to believe that some basic logical inferences are valid, almost self-evidently. Thus the scientific image is – perhaps uncomfortably – limited.

The latter solution of the paradox seems what Sellars would want to defend. He motivates a 'stereoscopic' view that allows for a manifest image next to a scientific image (p. 4-5, 9, 19). Scientific theory should be augmented with an exploration of the manifest image, i.e. the study of normative categories at personal and community level (p. 38-40). This is something that already has happened in the case of logic, for it corresponds in my view to the perennial development of formal logical theories as a regimentation of various reasoning practices or applications.