Conceptual Analysis and Naturalism about Knowledge

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1. INTRODUCTION

Metaphysical naturalism about knowledge[1] (NK) is the thesis that knowledge is a natural kind[2] as opposed to an artificial one. It is usually (but not always[3]) defended side by side with methodological naturalism, the claim that epistemology should be carried out (to some degree) using the empirical methodology of the relevant disciplines (usually within cognitive science). Hence, methodological naturalists reject the routine practice of traditional epistemology—armchair philosophical analysis.

Methodological naturalism is often a source of support for NK. If some natural kind corresponding to our pre-theoretical notion of knowledge has been identified by any particular science, we should be informed by its empirical results instead of dwelling in our pre-theoretical intuitions—just as our idea of what truly constitutes gold has little relevance after the emergence of chemistry. Someone who holds this view in particular is Hilary Kornblith, a main proponent of NK (Kornblith 2002, 2007). According to this view, a methodological naturalist will pay attention to the fact that cognitive ethology uses "knowledge" as a theoretical term and will seek to identify folk or pre-theoretical notion of knowledge with its reference.

The folk concept only serves an initial purpose in identifying a reference, just as our pre-theoretical classification of substance samples only plays an initial role in a chemical classification of them. Though there is a role for conceptual research

for the study of natural kinds, this is merely the conceptual refinement of theoretical terms that takes place in any scientific undertaking. According to the naturalist view that I have in mind, there is still a modest role for philosophers regarding the study of knowledge, for instance, in questions about epistemic normativity. Philosophical work is also needed to assure us that a correct reference is identified within a natural science, but the content of "knowledge" is to be provided mainly in an empirical way.[4] The "antecedent" (pre-theoretical) term can be safely abandoned once there is a "consequent" (scientific) term available (Tiel 1999).

Against this view, I will argue that identifying an empirical counterpart of "knowledge"—its referent with a corresponding scientific term—does not remove the need for conceptual analysis for methodological and metaphysical naturalism about knowledge. The type of conceptual a posteriori analysis I have in mind is similar in spirit to the one proposed by Graham and Horgan (1994), but I will not give a detailed treatment. However, I should stress it is not centered or limited in the analysis of folk concepts, nor is it an attempt to make traditional armchair epistemology compatible with methodological naturalism (as in Ahlstrom 2008). A posteriori conceptual analysis involves coining new terms for unification or clarification purposes, as well as stipulating new ones when they are needed to perform empirically informed theoretical work. Some naturalistic minded philosophers even engage in conceptual analysis thus understood without calling it by that name. Hence, when Ruth Millikan states: "My program is far removed from conceptual analysis; I need a term that will do a certain job, and so I must fashion one" (Millikan 1984), in my own terminology, she is engaging in a posteriori conceptual analysis.

Since not all methodological naturalists share Millikan's attention to concepts and careful definitions, and coining philosophical terms might seem alien to a naturalistic methodology, in this work I will make a case for conceptual analysis. In sections 2 and 3 I will show how conceptual analysis contributes to the content of "knowledge," and hence to our understanding of the constitution of knowledge as a natural phenomenon. The focus of section 4 will be on the ways in which conceptual analysis can advance naturalistic research on knowledge.

2. Analysis for Theoretical Unification

Kornblith's main claim is that because cognitive ethologists use "knowledge" as a theoretical term (hence, a natural kind that can satisfy normative epistemic concerns) we have very good reasons to conclude our folk and/or philosophical notion of "knowledge" is this same natural kind. Once NK has been established, there seems to be little reason in engaging in conceptual analysis (Kornblith 2002).

A good reason to call for an explicit conceptual analysis is that there is a problem of proliferation—a wide variety of candidate theoretical terms are

available. Besides the examples from cognitive ethology cited by Kornblith (Ristau 1991, Herman and Morrel-Samuels 1990, etc.), the term "knowledge" is used in cognitive and developmental psychology (Cfr. Nagel 2013) as well as a wide variety of disciplines (Cfr. Engel 2007). That is, used in an epistemic normative sense, which suggests more than mere homonymy. But the use is not exactly uniform, even when we restrict ourselves to one of these disciplines.

Suppose we find a considerable number of uses (K_1, K_2…) satisfying from the point of view of epistemic normativity. Should we accept all and say that knowledge is either K_1, or K_2… etc? A class consisting in an immense or "wild" disjunction of natural kinds, without a unifying account looks suspiciously like an artificial kind—e.g. a bug is either an insect, or an arachnid, or a small crustacean, or a small worm,[5] etc. So, even if we suspect $K_1 \ldots K_n$ can be grouped under a more general type, without an explicit analysis it is merely a hunch.

One should also be ready to find "knowledge" under a completely different term, perhaps one that does not appear to be related at first sight. Even before proper philosophical elucidation, a good deal of second order work might come in use for scientific purposes. For instance, by coining the term "core knowledge," different converging studies—without strict terminological unity— have come into view as describing the same type of phenomena.[6]

Core knowledge is specified as four—and a hypothesized fifth— special purpose systems that are innate, universal, present in pre-linguistic infants and non-human primates (Spelke 2000). However, this term is a second order proposal. The first order literature is constituted by disciplines different in methods as developmental psychology, neuroscience, primatology, linguistics. Also four very different domains (objects, actions, number, and space). Thus the rubric "core knowledge," helps achieve some theoretical unification. This might be a guide for further empirical research, which in turn might be used as an input for more theoretical unification. Perhaps the notion of core knowledge will be revised or abandoned in light of future research. Notice this is a way of concept testing that does not depend on an a priori methodology.

Aside from core knowledge as a proposed unifying program, there are several research programs that seem epistemologically relevant without using an epistemic theoretical vocabulary. Work on cognitive abilities such as face recognition very likely produce robust epistemic states. It seems too stingy to deny at least to consider them as candidates for knowledge simply because the term is not used (certainly a contingent matter!).

3. Analysis for Terminological Clarification

Naturalists using the reference fixing strategy, will demand a reductive identification such as water $=_{ID}$ H_2O (or at least the weaker claim that even if folk and scientific "knowledge" are not exactly co-referent, the latter is preferred[7]). It

is not merely an a posteriori identification, but an asymmetric one: paraphrasing Rayo, knowledge *just is* ethological knowledge (2003). Nevertheless, even if this might be overlooked in the initial stages, what we ultimately seek in successful scientific reductions is that the more fundamental term is distinctly understood. If this is one of the naturalist's motivations, she should make sure the reducing concept is well defined.

Depending on the target kind proposed by the naturalist, there might not be a clear, agreed definition of "knowledge." For instance, cognitive ethologists deliberately use anthropomorphic language to attribute intentional states to non-human animals when describing observations in the wild (Burghardt 2013). The meaning of the term "knowledge" comes from the ordinary use, sometimes it is vaguely specified, as when Herman and Morrel-Samuels (1990) speak of the necessary information dolphins need to navigate the world and fulfill their needs. In other instances, a definition of the term is simply absent (Ristau 1991). Isn't this circular? Not completely, since cognitive ethology does not simply consist in mental attributions. Indeed, intentional attributions are part of the endeavor, but causal, nomological, and explanatory relations between representations and behaviors are posited, tested, etc.

Perhaps as cognitive ethology matures we will see the folk concept of knowledge become a well-defined theoretical one. But not necessarily. Cognitive ethologists might not need epistemic terms of art to study behaviors and representations. Cognitive ethology might be well served by epistemic terms in their everyday sense. After all, natural language is used by lots of valid[8] scientific endeavors. But we, as philosophers, might be interested in going beyond the folk use of epistemic terms relying on cognitive ethology. We could stipulate a definition of knowledge and test it not against our intuitions, but against the literature. We might make adjustments to our philosophical term of art, or perhaps even be bold enough to ignore a small number of knowledge attributions that fall outside our philosophical concept, considering them outliers.[9]

4. Going Beyond Scientific Theoretical Terms

Perhaps knowledge does not correspond to some natural kind/s, but it is somehow grounded in it in a non-trivial way. The scope of human knowledge is vast and varied. It involves innate dispositions, but very likely also some produced by modularization (Cfr. Karmiloff-Smith 1994), it may rely on acquired symbolic systems (such as mathematical logic) or aided by instruments. Two related challenges are the fact that human knowledge also covers unusual domains (think abstract mathematics) and sources unbeknownst to other species (think books). So perhaps not even a unification strategy will be enough. It could be that a naturalist should be content to explain how the body of true beliefs grouped under knowledge elegantly arises from several natural capacities operating iteratively in the

appropriate contexts.[10] This is basically Engel's cursory proposal, appealing to the fore mentioned core knowledge systems.

Compare with naturalism about human sociality. It would be strange to claim "sociality" simply corresponds to a natural kind. But social naturalism is not a trivial claim; someone holding this position thinks that human social behavior—for the most part—is not the product of contingent historical constructs, ideology, convention, etc. Hence, a constructive strategy is called for in explaining how a broad defined capacity is more natural than artificial. This might be a case by case undertaking (reminding the work of cognitive anthropologists) or with a general account. Millikan's ambitious proposal is an example of the latter. I cannot give the details here, but her account is achieved by using stipulated knowledge-related concepts that do not come from unification.

There is an additional advantage of the clarity and succinctness that comes from conceptual analysis and concept stipulation. Given the complexity of the explanandum (knowledge), metaphysical naturalism is a hard task as it is. Weighting candidates for identification against normative concerns in an exercise of "reflective equilibrium" (Kornblith 2002) is a good starting point, but it promises to get unmanageable as epistemologists with different views on normativity and different preferred candidates for reduction (or grounding) tackle this problem. Philosophical precisification is thus critical.

If we perform this type of analytic work on some of the available proposals to defend NK (Vázquez-del-Mercado, 2018) we find interesting combinations of the following elements:

A. Reliability.
B. Appeal to functions.[11]
C. Teleology.[12]
D. Ecological validity.
E. Dispositional stability.
F. Appeal to mechanisms.
H. Attainment of goals.
I. Epistemic sensitivity.

An analysis presents us an opportunity to establish dependence relations and to question the compatibility of these elements. For instance, if we reconstruct an analysis of knowledge from Kornblith's views, we find that, among other elements, both reliability and teleology (from an evolutionary historic perspective) are both present. Nevertheless, there is a tension between both elements, since there are selected mechanisms for representation that produce a great number of false positives; like a predator detection mechanism that triggers flight in a mouse running after hearing the sound of a moving branch (Brown 2012). Does this lack of "reliability" mean the mouse doesn't know a predator is present in cases when

its belief turns out to be true? There is no prima facie reason to reject functional cognitive mechanisms that are calibrated in a way that turns out to give many false positives, unless the naturalist has some previous commitment to reliability (the kind of armchair commitment dissuaded by methodological naturalism).

This problem arises when we understand reliability in the usual sense used in epistemology, as the rate of true beliefs over total beliefs (Goldman 1979, 1986). As it turns out, Kornblith understands reliability precisely in this sense (Kornblith 2002, Goldman 2005). This shows that besides the advantage of having a clear view of the theoretical elements present in a claim for NK, there is a need in turn to have a sufficiently well-defined meaning of the constituting elements. (Some could be taken as primitives if they are deemed to be clear enough, or terms merely in need of an elucidation instead of a clear-cut definition).

I do not claim that this is a mere exercise in stipulation. For instance, if goals are a constitutive element of knowledge, there are further questions to be asked about them. Should they be taken to be individual goals, as represented by an organism? Should this representation be "on-line"?[13] Or perhaps goals are "objective," and should be understood from the species point of view instead of the individual (Okrent 2007). But even if conceptual, there is no reason why this controversy needs to be solved on a priori grounds. A review of cognitive mechanisms which are candidates to be knowledge producing, might give us reason to prefer one view over the other; and even if goals are really a constitutive element of knowledge. Are these mechanisms better understood when viewed as "goal producing"? Is any of these two notions of goal more fruitful and/or illuminating than the other? Or suppose we seemingly can make sense of knowledge without appealing to goals. But our proposed analysis depends on a different notion (i.e. function, mechanism, etc.) which itself turns out to require a notion of goal. Hence, even if we have a good idea on what types of processes count as knowledge exemplars, it might not be obvious from a first glance which elements are constitutive of knowledge.

5. Concluding Remarks

Recovering conceptual analysis as a tool does not mean resorting again to armchair methods that limit research to pre-theoretical notions. Hopefully, I have shown how conceptual analysis makes a substantial contribution towards understanding the nature of knowledge. A search for theoretical terms in the natural sciences is a necessary step, but it is insufficient. Conceptual analysis allows us to go beyond the limits of disciplinary-bounded research in the ways previously stated. Perhaps methodological naturalists will agree with many of the points I made, and the difference is a matter of degree and/or terminology. Nevertheless, the role of conceptual analysis has been insufficiently stressed, and its potential for fruitful research has not been sufficiently explored.

Presumably, some of the points I made can be extrapolated to the study of other natural kinds of philosophical interest, in cases where simple reductive identification is unfeasible. One of the advantages of methodological naturalism is that it increases our methods and scope of research. These advantages do not disappear when we engage in conceptual analysis but enhance an empirically sound study of natural kinds.[14]

NOTES

1. The debate is about propositional knowledge, ascribed in the sentences falling under the form "S knows that 'P'."

2. The thesis need not be strictly spelled out in terms of natural kinds—degrees of naturalness or other devices might serve the purpose (Lewis 1989). Nevertheless, I will follow this convention as it has been the usual framing of the debate in the literature

3. For a defense of the compatibility of metaphysical naturalism and traditional armchair methodology, see Ahlstrom 2008 and Goldman 2007.

4. This may be an implicit or explicit commitment to an external semantics regarding natural kinds.

5. I am aware polyphyletic groups such as worms would not count as natural kinds in a cladistic view of taxonomic kinds.

6. Authors do not claim knowledge = core knowledge, though Engel (2007) suggests the possibility.

7. This is an externalist account in the line of Kripke (1980). An account from an internalist semantics perspective would be somewhat different. For instance, according to an internalist the term "gold" used before the birth of chemistry did not denote the chemical element 79, but a yellowish ductile metal. Nevertheless, once the chemical concept of gold (Au) is available, the previous concept is abandoned since the reference is roughly the same and the chemical concept works better in predictions, explanations, inductions, etc.

8. Unless one thinks all mature science must eventually be composed by axiomatized theories, formulated with mathematical precision.

9. [1] If there is mathematical revisionism, perhaps there is a place in the world for ethological revisionism.

10. [1] Contexts are usually defined from an evolutionary perspective.

11. [1] Usually "proper function," hence evolutionary determined. But as I have argued elsewhere (Vázquez-del-Mercado, 2018), a systemic capacity view of functions such as Cummins' (1975), might serve better for epistemic evaluations and arguably determine "natural" functions, in a non-trivial sense (Davies 2003).

12. Ethiological theories are more common, but propentionist views do not depend on evolutionary history.

13. That is, do we demand that the individual actively represents the goal when seeking true belief related to that goal?

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