17

Modes of knowledge and vagueness

PIERRE LIVET

1. Introduction

In *Va Savoir!* (Hermann, 2007), Pascal Engel claims that we can know a proposition without necessarily knowing that we know this proposition. This implies that we can know something without being able to give strong inferential and reflexive justifications of our knowledge. In this conception, knowledge is based upon external foundations and not only upon internal reasons. Nevertheless, this externalist conception can give place to justifications, because external justifications are possible, mainly the prima facie justifications given by perception and its non-conceptual contents. This kind of modest dogmatism about knowledge allows Engel to share with Williamson not only the conclusion of his argument on vagueness, the thesis that knowing p does not ensure knowing that one knows p, but also the idea that knowledge cannot be reduced to a kind of belief and that our concept of belief depends on our concept of knowledge.

I agree with all these propositions, except the last one that I find disputable, because it seems difficult to give primacy either to the concept of belief or to the one of knowledge. I will address this question only at the very end of this paper. I will first concentrate on the articulation between the perceptual and the inferential foundations of knowledge and their relation to the problem of vagueness. I will begin by some considerations upon Williamson's argument. Then I will propose a formulation of the problem of vagueness that makes us able to treat the problem of generalized vagueness (vagueness of any procedure used to solve a vagueness problem). This leads to examine more carefully the relation between the perceptive discrimination of a form or a quality and perceptual comparison. This relation will give us a basis for anchoring a conceptual content (on a perceptive identification and linking the difference between the two content to a move from the perceptual discrimination of a form, a quality or an object towards an inquiry on the reliability of our epistemic access to their identification, a move that I will call an "epistemic ascent". My conclusion will be that our cognition can only reach epistemic states *compatible* with knowledge – and, when we are able to build new methods of inquiry, with knowledge of higher order. Belief, in this perspective, is compatible with a single step of this process, while knowledge (as in Peirce's conception) is compatible with new steps of inquiry.

2. Williamson's argument

Let us briefly recall how Williamson's argument works. In order to be reliable, knowledge requires that the cases in which we are in position to know that p cannot be too close to cases in which p is false. This implies that between cases in which we know that p is true and cases in which we know that p is false, there is an area in which we do not know whether p is true without knowing that p is false, because, would have one a direct access to facts, p is still true in this area[1]. This buffer zone ensures us the safety of our knowledge. In cases very close to the considered case in which p is true, we would still tell without error that p is true. We have a margin of safety, but such margin implies a zone of vagueness.

Now consider M. Magoo. He knows that his visual powers of discrimination are bad. Suppose for example that, if a tree is x cm tall, M. Magoo does not know whether it is x cm or $x + 1$ cm or $x - 1$ cm tall. In this case his margin of error is at least 2 cm wide. When the tree is in reality $x + 1$ cm tall, M. Magoo knows that he cannot exclude, just by using his bad visual powers, that the tree is x cm, because x cm is still inside his margin of error. We can claim: (1) "M. Magoo knows that, if the tree is $x + 1$ cm tall, he does *not* know that the tree is *not* x cm tall". It is a general proposition, relating a hypothesis ("if the tree is $x + 1$ cm tall") and a negative epistemic consequence. It can be true even if "the tree is $x + 1$ cm tall" is not the case.

Suppose that (2) "Magoo knows that the tree is *not* x cm tall". Let us assume (*KK*): "everybody who knows p knows that he knows p" (Kp implies

[1] If it was not the case, a case of the first kind (p known true) could be adjacent to a case of the second one (p known false).

KKp). By *KK* we go from (2) to (3): "he knows that he knows that the tree is not x cm tall".

Notice that if Magoo's margin of error is 2 cm, (2) would imply that the height of the tree is equal to or more than $x + 2$ cm if we go up, or than $x - 2$ cm if we go down. In either case, the tree cannot be $x + 1$ cm tall. We would know by (2) and the margin of error that proposition $q =$"the tree is $x + 1$ cm tall" is false[2].

(2) implies also that "Magoo does *not* know that the tree is *not x cm* tall" is false. Can be (1) still valid? Yes. The antecedent and the consequent of its implication are assumed both to be false, and the only case in which an implication is false is when the antecedent is true and the consequent false. Therefore by (1), q implies not (2). But by the validity of (3), we obtain again (2).

From "q implies not (2)" and (2), we infer by contraposition that not q. As Magoo is supposed to know a consequence of the set of propositions that he knows, and he knows the content of (1), *KK*, (2) and (3), he knows not q: "Magoo knows that the tree is *not* $x + 1$ *cm* tall".

This one more step than knowing that the tree is *not x cm* tall, a step in the direction of the tree being taller than x cm and $x + 1$ cm. The same reasoning can be repeated, leading to the conclusion of an immense tree, a tree that even the myopic Magoo can distinguish from the tree that he is seeing at the beginning of this reasoning. Williamson (p. 115-116, Oxford U. Press, 2000) concludes that the only sensible thing to do in order to avoid the disastrous conclusion of this sorites is to reject *KK*[3]. We can know something without knowing that we know it.

I agree with the conclusion, but at first sight something in step (2) looks strange with respect to Mister Magoo's epistemic abilities. On one hand he is able to know by (1) that something is under the threshold of his discriminative power: it is a *general* property of his visual abilities that he cannot distinguish x cm and $x + 1$ cm. On the other hand, there are *particular* cases in which he is supposed by (2) to be able to know that *not x c*m is true, while not knowing that $x + 1$ *cm* is true. Why is M. Magoo unable to use his knowledge of the existence of a margin error and the contrast between knowing and not knowing

[2] This conclusion depends on knowing what margin of error is the one of M. Magoo.

[3] In this case we cannot obtain again (2), and cannot conclude not q (not $x + 1$ cm tall) by contraposition.

in order to conclude that $x + 1$ cm is inside his margin of error, and is in this respect a plausible measure?

I think that the oddity here is only apparent. But some elaboration is needed to clear it away.

3. Breaking the symmetry of uncertainty

The difference between x cm and $x + 1$ cm is a particular case of a general problem of categorization: has item i to be put in category A or in category B (supposedly disjoint)? Our ancestors, the gatherer-hunters, have to solve this kind of problem. Is this forked form in the bush a sign of the horns of an antelope (category h) or the fork of a stump, to be put in the not h category? There is an epistemic state in which the hunter is uncertain: neither he knows h, nor he knows not h. In this state, there is an epistemic symmetry between the two possible propositions h and not h, and the uncertainty state can be written: (not Kh and not K not h). When the form seems to move, the hunter gets a clue that breaks the symmetry in favour of h — if he has no other clue in favour of not h. Now, his epistemic state includes that he knows that he does not know not h: (K not K not h). Does he know that he knows h? He has a sign in favour of h, but he has no proof that this sign is decisive, because he has noticed in the past that he could believe to see a move of an object, while in fact this impression was due to a move of his head or to one of his visual saccades. Therefore he does not know that he knows h : not $KK\ h$. But (not KKh) is still compatible with Kh. By contrast, (K not K not h) is not compatible with K not h. The symmetry that characterizes the two parts of the epistemic state of uncertainty is broken.

Breaking symmetry opens the possibility of another epistemic move, an inquiry about a second order knowledge. Does the hunter know that he knows h? Remember that even a hunter may have to answer to this apparently sophisticated question: if he tries to run and hunt down every thing that seems to move and discovers that in a lot of the cases it was a misperception, he will waste a lot time and effort in unsuccessful attempts. But notice that by asking this new question, he shifts from a question about in which category to put the form or the thing towards a question about the reliability of his perception and interpretation of the move. Was it a real move or an apparent move due to a move of his head or to his visual saccades? The question is now about his epistemic access and not about the category of the thing the form of which he was seeing. We can call this shift an "epistemic ascent". Notice that it becomes reasonable to make this epistemic ascent in an inquiry about of the second order knowledge of h only when there is a dissymmetry in favour of *h*, that is, when the epistemic state of the hunter becomes compatible with knowing *h*.

Suppose that in his second order inquiry, the hunter finds new clues that break the symmetry between the conclusion: "the previous epistemic access is reliable" and "it is not reliable" access. These new clues do not yet imply that *KKKh*, because our hunter has not yet tested his methods to assess reliability. We are still in the state not *KKKh*. But since these new clues are not compatible with (*K* not *KKh*) they are compatible with *KKh*.

Our hunter has no need to go further, but scientists may have: they may not only require, for example, that a proposition is demonstrated, but that the theoretical framework in which it is demonstrated is the right one for the considered topic. For example, Euclidian geometry is not the right framework for the theory of relativity.

We can generalize: at each step of the epistemic ascent, we are in an epistemic state that is guaranteed to be compatible with an order of knowledge that is lower than the level of the present step in the ascent. This compatibility state is not just a knowledge "by default" (knowledge in the absence of a demonstrated contradiction). Knowledge by default requires only that the epistemic state is compatible with *Kh*. In our third step of ascent, for example, the epistemic state is not only compatible with *Kh*, but also with *KKh*. This is more robust than the basic knowledge by default.

After some of these steps, our epistemic situation is the following: it is neither compatible with (*K* not *h*), nor with any degree of ($K.(n).K$ not *h*). Therefore, it implies (not $K.(n).K$ not *h*). It is compatible with *Kh* and with some degree of $K.(n).Kh$, but a higher degree $K.(n+1).Kh$ is not guaranteed. Are the lower degrees of $K.(n-m).Kh$ guaranteed? We can notice that in counterexamples like the one of the Euclidian geometry which is not relevant for relativity, we have a proof of the discrepancy between the theory of relativity and the Euclidian geometry: we know that we do not know the validity of the postulate of parallels in the theory of relativity. As we climb higher in our epistemic ascent, our positive knowledge is more selective, and we accumulate negative knowledge of higher and higher degree. It is the conjunction of these dual positive and negative movements that ensures us a more and more robust guarantee, even if we cannot get a guarantee that at a higher step, we would not have to restrict againour positive knowledge.

Can we claim that this conjunction justifies the first order assertion *Kh*? If for such a justification we require to have at our disposal the infinite serie of $K \ldots \infty \ldots . Kh$, the answer is surely no. But this requirement seems to be itself an unjustified demand, because we can have cases of Kh without $K \ldots \infty \ldots . Kh$ — if it was not possible, why to distinguish the levels of knowledge? The other approach, a more modest and sensible one, leads to say that our first step, in which we have both (not KKh) and (K not K not h), is compatible with Kh, and that our second step, in which we have (not $KKKh$) and (KK not K not h) is compatible with KKh and then can imply Kh, and so on and so forth.

In this approach, we cannot consider questions about positive knowledge without taking into account the side of negative knowledge. This holds even if knowledge, as a modality, does not ensure the simple management of negation that would allow us to conclude from "I not know not p" that "I know p". The root of these troubles seems that knowledge, as factive, is related to simple truth, leading us to be satisfied by Kp without taking care of KKp, but as epistemic, is related to methods of justification, leading us to a quest for higher levels of knowledge. Whatever aspect you put the accent on, the common fact is that in any actual conditions of knowledge, Kp does not imply KKp.

This conclusion is the one endorsed by Williamson and Engel. Our approach adds a particular flavour to this proposition. We can use it to give solutions to vagueness problems. As soon as we have asymmetric clues (clues in favour of h, and no corresponding clues in favour of not h) and can go a step further by testing the robustness of our epistemic access to the clues for h while not noticing any clue for not h, we are justified to break the chain of the sorites reasoning. Similar solutions can be applied to higher order vagueness – when the results of higher order tests are vague at a first examination. This kind of solution does not require crisp data: the asymmetry between the clues for h and the clues for not h can be itself a vague asymmetry. This situation just leads us to a higher order inquiry about the clues in favour of a real asymmetry and the clues in favour of a fake asymmetry, and so on and so forth. As our modest and sensible approach does not require to get the whole stack of higher justifications, but just to build the following higher level in order to assert a knowledge of lower degree, this solution of vagueness does not lead us to an infinite regress.

4. Is perceptive knowledge based on comparisons?

This approach has been centred on examples in which knowledge consists in knowing to which of two categories a phenomenon belongs. It relates knowledge with an operation of comparison: comparing clues in favour of a category and clues in favour of the other one. Is every knowledge grounded on such comparison operations between bases for Kp and bases for K not p? The basic source of our knowledge, perception, seems to give us a simple knowledge of p, without any comparison. For example, we see this red spot and know that it is red, full point. According to Engel, such a knowledge Kr is given. Engel acknowledges that this is a dogmatic stance, but claims that this kind of modest dogmatism is inescapable. It is only when we ask for the justifications of this basic knowledge that we have to acknowledge that it has only *prima facie* justifications, which are defeasible ones, as they can be defeated if our inquiry goes further. Comparison, could Engel say, implies relations and the concept of difference, and perceptual knowledge is mainly non-conceptual.

I agree that perceptive knowledge is mainly non-conceptual, but argue that nevertheless it implies relation and comparisons. It is well known, for example, that given a tessellation of squares of different colours, the colour of a square located in the centre of the tessellation is perceived differently in relation with changes of the colours of squares that can be located far from the centre. The relation between a form and its background is central for perception, and focussing on different elements in the same picture can exchange their roles (for example in the Necker's cube). We perceive the same part of a landscape (grass with a few trees) as wooded or as a meadow when it is surrounded by fields without any tree or bush or by a dense forest.

Taking one element or another as the focussed clue gives rise to a content of perception that is in a sense the opposite of the other. These clues are not explicit parts of the perceptive content, but they are decisive for shifting from one content to the other. In the same way, in Peacocke example, the same form is perceived as a square or as a diamond, even when they are presented together. The discriminatory clue here is the parallelism with the vertical or the horizontal of either the sides (for the square) or the diagonals (for the diamond). It is not explicit in the perceptive content of each form, but it is decisive for the discrimination of one form as a square and the other as a diamond.

The difference between perception and judgment is neither the absence of relation and comparison (for perception), nor the presence of a balancing process of taking into account a clue in favour of A and a clue in favour of not A- in judgements made in the uncertainty related to vagueness. The difference is that the process leading to the judgment can be made explicit, while we are most of the time unaware of the process leading to the content of perception and unable to explicit it. In both cases, the main operation is a process of discriminating data by using clues. But the clues can be made explicit in the conceptual judgment, while in perception the decisive clues are so intimately integrated in the perceptual content that they cannot be isolated. For example, in the Muller-Lyer illusion (lines with arrows directed towards the line or away from it) we can judge that the illusion is caused by this inversion of the direction of the arrows without being able to avoid to perceive one line longer than the other. The clues given by the arrows are compared, but the result of this comparison is integrated at very basic cognitive levels in the perceptual content and at a very higher speed that the one of the process of explicit judgment.

The difference underlying the distinction between conceptual and non-conceptual content seems to be the following: perception is a discrimination process using signs and clues. The relations between these clues give rise to the formation of the perceptive content, and by the way to a perceptive identification. In this identification, the clues are non-explicit and already integrated. This identification gives a basis for concepts. The process of judgement presupposes that several such identifications are possible. When the process of judgment works on clues, it has not only to integrate them in a unique identification, but also to take into account the clues that are in favour of an identification or in favour of another one. The one that the judgment selects has by this very selection process a conceptual content. A concept makes sense in a network of other concepts, while a perceptual identification makes sense in a network of clues. The judgment process may require the possibility of making explicit some of the clues that are used in order to discriminate two conceptual contents. To take again the example of the square and the diamond, the perceptual identification does not make explicit the clues given by the relation of the sides or the diagonal with the vertical and the horizontal, while the concepts of a form as a square and as a diamond (the same form in the example) require to make them explicit. If by "comparison" we refer to the explicit discrimination of two conceptual contents, there is no "comparison" in this sense in our basic perception. Nevertheless a perceptual content can also be said to imply comparisons in a non conceptual sense, as the process of integrating clues includes comparisons -but non explicit ones.

To say that the perceptual content has a *prima facie* justification is just to say that the clues that justify the identification that gives this content are already integrated in the identification. In the case of a judgment, the notion of *prima facie* justification is slightly different; it refers to a specific stage of the process of evaluating the strength of the different clues: the stage in which a dissymmetry appears between the pro- and the contra-clues. As we have seen, at this stage an epistemic shift is possible: we can no longer focus on the category of the object of the judgment, but on the robustness or reliability of our access to the clues that entitle us to put it in this category, or on the validity of the relation between the clues and the categorization; we can make the first move of the epistemic ascent. By doing so, we start a (virtually endless) process of justification that goes beyond the *prima facie* justification, which appears now as an end in the perceptual process and a beginning in the conceptual and judgmental process. The perceptive *prima facie* justification is compatible with Kp and incompatible with (KK not p), but it is still not compatible with KKp. The judgmental *prima facie* justification is compatible with Kp and KKp, but still not with $KKKp$.

The dissymmetry of the perceptive clues between the ones that are pro-p and the ones that are contra-p ensures the identification of the item i as a p-object. On the basis of this identification, the inquiry about the validity of our epistemic access to this p-property of i can be triggered – it would have no sense to trigger such inquiry without any previous identification. This inquiry implies also to keep watching out for possible clues contra-p. But our watching is dissymmetric: regarding p, we are testing the robustness of our epistemic access to the contra-p clues; regarding not p we are just keeping watching out for possible contra p-clues. Regarding not p, we are still in the process that can result in identification, while regarding p we are involved in a higher level process.

5. Scepticism, belief and knowledge

As Engel says, we are entitled to take our knowledge as valid, even if our justification is a prima facie justification. The sceptic can attack this knowledge as defeasible, of course, and is tempted to extend this attack to every level of conceptual knowledge. But his attack wins only against the dogmatic that claims that knowing p implies an absolute knowledge, given by the infinite chain of $K \ldots \infty \ldots Kp$. His attack is not relevant against a theory of knowledge in which levels of knowledge are distinguished and "knowledge of p" is taken as a summary for " is valid for p the epistemic modality based on the dissymmetry between (not *KKp*) and (*K* not *K* not *p*) and compatible with *KKp*, even if for the present time not compatible with *KKKp* (no inquiry has been made at this higher level, so not *K KKp* holds) while no longer compatible with (*KK* not *p*) – any of these formulas being possibly extended to similar expressions of higher levels of the epistemic ascent". In this approach, *Kp* can be true at its level even if *KKKp* will prove not to hold.

We have to be more precise about justification, since *prima facie* justification is slightly different at the non-conceptual perceptive level and at the conceptual level. The sceptic may believe that he can attack perceptive knowledge by showing that the information given by the clues is an incomplete and insufficient one for concluding p. But his attack is irrelevant: this information and the dissymmetry between the clues is sufficient to identify the perceptive quality, form or object, even it is not sufficient to assign one conceptual category and not another one to them. Any attack on this conceptual assignment needs to presuppose a previous identification, and the sceptic has no power on the perceptive processes of integrating the clues, as he is, like us, unaware of them.

The sceptic's attack is relevant at the higher level of the conceptual judgment, when he tries to defeat the *prima facie* conceptual justification. But as we have seen, his attack cannot be valid once for all levels of knowledge, because the higher levels of the epistemic ascent cannot be built all together at the same time. In order to build a new level of epistemic inquiry, we have first to be given the evidence of an asymmetry between the pro- and contra-clues at our disposal at the previous level. This condition blocks the infinite ascent of the sceptical argument. As attacking the higher level of justification requires to presuppose the asymmetry at the previous level, the status of *prima facie* justification that rests on this asymmetry is enforced by the very move of epistemic ascent that the attack requires.

The sceptic can make a more general objection: what you describe in this dynamic of epistemic ascent is not a real knowledge, but only a belief. Belief that p is compatible with the truth of p and not compatible with the truth of not p, but does not ensure the truth of p, and this is all that you have got by your comparisons between clues for p and clues for not p. Our answer is that belief does not require and does not imply the possibility for any epistemic level to trigger a higher level inquiry about the robustness of our epistemic access. This possibility is present for knowledge from the first step, from the first asymmetry between pro-*p* clues and contra-*p* clues. Actualizing this possibility once the asymmetry has be recognized is a requirement of knowledge, is it not a requirement of belief.

Noticing this situation is an argument for Engel's claim that knowledge involves a normative aspect. But does it support Williamson's and Engel's claim that knowledge is more basic than belief? The answer is yes if we have a minimalist conception of belief, in which belief is reduced to the recognition of the asymmetry between the pro-and contra-clues, without any mention of a possibility to trigger an epistemic ascent. In order to understand conceptual cognition, we need to go further than this minimal belief. The answer is no if we define belief as a conjunction of the asymmetry and the possibility of triggering the following step, the epistemic ascent, but do not include in this conjunction the actualization of this possibility. In this conception, believing p implies the possibility of an inquiry for deeper justifications, but only knowledge requires that this following step of the cognitive process have been actualized. One given degree of knowledge shares a similarity with belief since it does not actualize levels of epistemic inquiry that are higher than the immediately following one. Our epistemic state is compatible with Kp if we have actualized an inquiry about our epistemic access to p rather than not p, leading to a conclusion that excludes (KK not p). Regarding the inquiry about higher levels, this epistemic state requires only its possibility. But it differs from belief since it involves the actualization of an inquiry of higher order than the previous step.

If we take two real epistemic states and want to justify to call one of them a belief that p and the other a knowledge that p, what will be their difference? Each of them is of course compatible with p, each of them implies the possibility of an epistemic ascent to the immediately higher level. Each of them can even pretend to be compatible with the knowledge of p! But this compatibility is only based on a pure possibility in the case of the belief, and is confirmed by the actualization of the epistemic inquiry at the higher order in the case of knowledge. When we take the same given level of epistemic state as a common reference for belief and knowledge, knowledge requires at least one step further than a belief, but can be considered as an improved stage of belief from the point of view of a higher level of knowledge.