Zalabardo on Closure and Sensitivity

Lars Bo Gundersen and Jesper Kallestrup

Nozick (1981) famously advocated a tracking theory of knowledge according to which S knows that p only if S would not believe p if p were false and S would believe p if p were true. These two modal conditions on knowledge, sensitivity and adherence respectively, seem initially to provide a neat solution to the Gettier problem and the problem about skepticism. For instance, the reason you fail to know there's a barn in fake barn county despite having a justified true belief is that you would still believe there's a barn if instead you were looking at one of the many barn façades. And while both conditions are met when it comes to your belief that you have hands, your belief that you are not a handless brain in a vat (BIV) is insensitive, which means you cannot know that you are not a BIV. So, your lack of knowledge of the negation of skeptical hypotheses seems to inflict no damage on your putative knowledge of everyday propositions. So far, so good. The problem with the requirement that sensitivity be a necessary condition on knowledge is twofold. First off, given your knowledge that having hands entails not being a BIV, Nozick's anti-skeptical strategy implies that knowledge is not invariably closed under known entailment. Secondly, there are intuitive cases of insensitive knowledge. Some of these, including Nozick's own grandmother case, can be handled by insisting that S sensitively believes p just in case S would not believe p using the same method that S uses in the actual world if p were false. But, as Zalabardo notes, method-relativization of sensitivity fails to deal with all such cases, including Sosa's (1999) rubbish chute. You drop a rubbish bag down the chute in a high-rise condo. Intuitively, moments later you know that it has reached the basement, but your belief is method-insensitive: were the bag to have somehow snagged on the way down, you would still believe via the same method that you actually use that the rubbish is now in the basement.

Zalabardo's project is in a nutshell an attempt to develop a tracking account of knowledge which is immune to counterexamples and can withstand at least some of the most pressing skeptical challenges without compromising the closure principle. The distinction between inferential and non-inferential

knowledge is key. Sensitivity without method-relativity, indeed without adherence, is a sufficient but not necessary condition on non-inferential knowledge. Nozick's account of method-relativity does not work for so-called one-sided methods, which cannot recommend belief in ¬p, because it forces us to look at too distant worlds for determining whether a true belief has the status of knowledge. The idea of relativizing sensitivity to a method must thus be abandoned. But what, then, about apparent instances of insensitive knowledge, such as the grandmother case, which motivated Nozick's idea of method-relativization in the first instance? Zalabardo thinks these cases can be fixed by introducing an additional sufficiency condition for knowledge, namely evidence. In the grandmother case, for instance, the grandmother has a sensitive true belief, and thus knowledge, that the grandson behaves in a certain manner, p. She *then* infers that the grandson is well, q, from this known p and does thereby come to know q too although her belief in q is insensitive. This means that intuitive instances of insensitive knowledge are harmless as these pertain to inferential knowledge, where evidence understood in probabilistic terms overcomes the epistemic shortfall posed by insensitivity. Roughly, a true belief that p counts as inferential knowledge when S knows a proposition e which S knows adequately supports p. Any piece of inferential knowledge that p can be traced back to some non-inferentially known proposition e that provides adequate support for p. Adequate support is basically a question about high values for prob($e \mid p$) / prob($e \mid \neg p$) and prob($p \mid e$). Importantly, such evidence can confer on insensitive belief the status of knowledge without that belief thereby being rendered sensitive. In contrast, there are instances of non-inferential knowledge where S's belief lacks adequate evidential support, but only because her belief is sensitive. So, one might think that if sensitivity and evidential support are individually sufficient for knowledge, at least their disjunction is necessary for knowledge. But that holds only for non-standing beliefs. On Zalabardo's view, any true standing belief automatically constitutes a kind of default knowledge regardless of whether that belief is sensitive or evidentially supported.

Equipped with this sophisticated, tripartite account of knowledge, Zalabardo then proceeds to argue first that various counterexamples to existing tracking theories pose no difficulty for his account, and secondly that he can handle Gettier cases, lottery propositions, bootstrapping arguments, and some types of skeptical challenges. Here are two examples: (i) On the basis of looking at a dachshund, you form the belief that there is a dog before you, but if there had not been a dog in front of you, there would have been a hyena which you always mistake for a dog. You can know inferentially that there is a dog before you on the basis of evidence provided by the proposition that there is a dachshund-like animal before you, which you know by truth-tracking. (ii) You can know non-inferentially that you have hands, because your corresponding belief is sensitive. Your belief that you are not a BIV is

neither sensitive, nor can you know that proposition inferentially on the basis of evidence provided by the proposition that you have hands. You are no less likely to believe the latter if the former is false than if it's true. Still, you can know that you are not a BIV in virtue of having a standing belief in that anti-skeptical proposition. This means that while closure may fail when restricted to either evidential knowledge or knowledge by truth-tracking, closure argu-ably holds in skeptical arguments if formulated disjunctively to include de-fault knowledge alongside evidential knowledge or knowledge by truth-tracking as separate disjuncts.

We found Zalabardo's carefully articulated picture an appealing one, especially the mixture of non-inferential knowledge by truth-tracking and ev-identially supported, inferential knowledge, where both are understood prob-abilistically. The way this tripartite account of knowledge is put to work in explaining putative counterexamples to more standard tracking theories and in dealing with much-debated cases involving, for instance, lottery proposi-tions, epistemic bootstrapping or higher-order beliefs, is impressive. Instead of attempting to develop a counterexample to Zalabardo's account, we shall make an observation regarding the overall dialectics of the book. The intro-duction of competent inference as a new sufficiency condition for knowledge and the detailed explanations of how focus on competent inference may solve otherwise tricky problem cases are surely a promising and fruitful avenue to explore. However, adoption of these ideas appears to completely undermine Zalabardo's motivation for introducing competent inference as an additional sufficiency condition for knowledge in the first place! Zalabardo needs infer-ence as an independent source for knowledge as an alternative to method-relativizing which he abandons due to problems concerning one-sidedness. But these problems seem to evaporate once we follow Zalabardo in paying attention to the crucial role played by inference in knowledge acquisition. Take for instance Zalabardo's paradigm case of a troublesome one-sided method: a medical test with no or very few false positives but numerous false negatives. Analyzed after the same guidelines as those he proposes for the grandmother case, this case turns out to be entirely unproblematic: one *first* sees that the test in question gives some particular upshot, POSITIVE, say. One thereby comes to sensitively believe – and know – that the test gave this re-sult. One *then* competently infers from *this* fact that the condition is present. The resulting belief is surely sensitive relative to that method (competent in-ference from the test result). According to Nozick's own account of inferen-tial knowledge[1], one gains a sensitive belief in the conclusion of an inference just in case one sensitively believes the premise, competently deduces – and thereby comes to believe – the conclusion and wouldn't have believed the *premise*, if the conclusion had been false. Hence, the principal difficulty with one-sided methods – that had not-*p* been the case and one formed a belief as to whether or not p on the basis of such a method, one would (trivially) have

believed *p* (since a one-sided method *only* can lead one to believe *p*) – vanishes once we focus on competent inference as a method since this method merely demands that the belief in the *premise* – not the belief in the conclusion itself – is sensitive to the truth of the conclusion. In general, it seems that once we pay sufficient attention to the role played by inference in our cognitive economy – in the manner Zalabardo proposes – we can easily handle cases involving one-sided methods and the prima facie pressure Zalabardo feels to give up method-relativization is therefore merely apparent. Indeed, Zalabardo's introduction of an *additional* sufficiency condition, competent deduction, seems on reflection to be completely superfluous. Relativizing knowledge acquisition to this method of competent inference will ensure that the pertinent beliefs are sensitive, at least in the examples discussed in the book where competent inference is seen as the best remedy for those otherwise incurable diseases that affect the tracking theory. And this is so regardless of whether one prefers to work with Nozick's original account of competent inference or with Zalarbado's reinterpretation of that account in terms of probability.

One may also worry about the conflicting intuitions in play in the cases that are discussed throughout the book. Most of the discussed cases revolves around instances of the closure principle: one has intuitions that one knows *p*, that one cannot know *q*, but that one ought to be in a position to know *q* given that one also knows that if *p* then *q*. Something has got to go. Moreover, whichever knowledge claim is rejected, one better provide an explanation of why that claim seemed so intuitive in the first place. Zalabardo suggests his closure-preserving response to the BIV argument is superior to views which either violate closure or maintain the possibility of inferentially knowing the negation of the BIV hypothesis on the basis of evidence provided by an everyday proposition. But we are also faced with similar clashes in our intuitions in other cases where Zalabardo is happy to resolve this conflict by rejecting closure:

> (i) It seem intuitively plausible that you cannot know that the lottery ticket you have just bought is a loser, even though (you know that) the probability for that proposition is very high. After all, it would seem practically irrational for you to buy a ticket if you had such knowledge. We also have the intuition that you can know that you won't go on an expensive safari next year. Trouble is nobody disputes your knowledge of the conditional that you will lose the lottery if you won't go on an expensive safari next year. In this case Zalabardo resolves the conflict between our intuitions about knowledge by denying closure, rather than, as in the BIV argument, by appealing to default knowledge of the consequent. The reason for this diagnosis seems to be simply that standard tracking theory yields the result that your belief that you won't

go on an expensive safari next year is sensitive, whereas your belief that your ticket is a looser is insensitive. The pressing question is: given that such theory yields identical predictions about the two cases, what's the more principled reason for treating them differently?

(ii) Surely, you can know that the petrol gauge reads 'full' by reliably looking at the gauge, and there is no question that you can also know that the petrol tank is full in virtue of the reliability of the petrol gauge, but it seems odd that you should come to know the gauge is reading correctly on this occasion by competently deducing that proposition from those other two propositions. Instead you will need to insert a dipstick into the tank to ascertain the level of petrol, or perhaps rely on other peoples' say-so. In the case of such alleged easy knowledge, Zalabardo's recommendation is that (a two-premise version of) closure is to blame. Again, belief in the two propositions that make up the antecedent is sensitive, whereas belief in the consequent is insensitive. In particular, if the gauge were reading incorrectly, you would still believe that it was reading correctly. We need an explanation of why you couldn't have inferential knowledge or perhaps default knowledge of the consequent.

(iii) There is no question that you know snow is white. You certainly also know that your belief that snow is white is true, and therefore not false, if snow is white. If closure holds, it follows that you also know that your belief that snow is white is not false.[2] It this case, there doesn't seem to be anything intuitively untoward about having knowledge of the consequent. Hence, there is no intuitive pull towards rejecting closure. Nevertheless, that is exactly what Zalabardo recommends due to the sensitivity of your belief that snow is white and the insensitivity of your belief that your belief that snow is white is not false. In particular, if it were false that your belief that snow is white is not false, then you would still believe that your belief that snow is white is not false. We need to know more about why beliefs that are so-called cognitive self-approvals cannot have the status of – inferential or default – knowledge.

Against the backdrop of (i) – (iii), one wonders what independent considerations could motivate the rejection of closure in these cases but not in the BIV argument, when this principle seems intuitively plausible across the board. It would surely be theoretically unsatisfactory if failure of closure were simply a brute, inexplicable consequence of a certain view about the nature of knowledge. At least, the closure intuition needs to be explained away

in some principled way in those three cases. Otherwise, a worry about ad hoc-ness in the way these conflicts of intuitions are resolved will linger.

This suspicion gets enforced by comparing Zalabardo's treatment of the following two similarly structured cases: Henry looks at a red barn in a Kripkean fake barn county where almost all barn appearances are illusionary; they are caused by fake barn façades which Henry cannot distinguish from real barns. However, all the red barns are genuine. On the face of it, Henry's belief that there is a red barn in front of him is sensitive and qualifies as knowledge; but he doesn't know what follows – that there is a real barn in front of him – since *this* belief is insensitive. Zalabardo's verdict in this case is that Henry knows neither that there is a red barn in front of him nor that there is a barn in front of him. But consider now Oskar looking at a dachshund in a Goldmanian fake dog county where almost all dog appearances are illusionary, they are caused, not by fake dog façades, but rather by other dog-looking animals, hyenas and wolfs, which Oskar mistakenly takes for dogs. However, all the dachshund appearances are veridical. Again, on the face of it, Oskar's belief that there is a dachshund in front of him is sensitive and qualifies as knowledge. But Oskar does not know what follows – that there is a dog in front of him – since his belief to that effect is insensitive. But, somehow surprisingly, Zalabardo's verdict in this case is that Oskar *does* know that there is a dachshund in front of him and that he also can gain knowledge that there is a dog in front of him by competently inferring this from what he already knows, namely that there is a dachshund in front of him.

Department of Philosophy   *Department of Philosophy*
Aarhus University   *Edinburgh University*
Jens Chr. Skous Vej 7   *Old College, South Bridge*
8000 Aarhus C, Denmark   *Edinburgh EH8 9YL, UK*
E-Mail: fillg@cas.au.dk   *E-Mail: jkallest@staffmail.ed.ac.uk*

NOTES

[1] See his (1981: 131-135).

[2] As Vogel (2012) and others have shown, the problem that now ensues from closure and sensitivity arises only for instances of '¬(B(*p*) & ¬*p*)', and not also, as Zalabardo (155, 162-163) seems to think, for instances of 'B(*p*) & *p*'.

REFERENCES

NOZICK, R. (1981), *Philosophical Explanations*, Cambridge, Mass., Harvard University Press.

Sosa, E. (1999), 'How Must Knowledge Be Modally Related To What Is Known?', *Philosophical Topics* 26, pp. 373-384.

Vogel, J. (2012), 'The Enduring Trouble With Tracking', in *Modal Epistemology: New Essays on Sensitivity and its Descendants*, (eds.) Kelly Becker and Tim Black, Cambridge: Cambridge University Press, pp. 122-151.

Zalabardo, J. (2012), *Scepticism and Reliable Belief*, Oxford: Oxford University Press.

RESUMEN

Zalabardo desarrolla una nueva explicación del conocimiento en términos del rastreo de la verdad que parece ser inmune a los contraejemplos y que puede hacer frente a al menos a algunos de los desafíos escépticos más acuciantes sin comprometer el principio de clausura. De acuerdo con su concepción, la sensitividad sin relatividad metódica es una condición suficiente pero no necesaria del conocimiento no inferencial. Las creencias que no son sensitivas pueden constituir sin embargo conocimiento inferencial cuando están respaldadas evidencialmente de manera adecuada. Zalabardo necesita la inferencia como una fuente independiente de conocimiento en tanto que alternativa a la relatividad metódica, pero nosotros argumentamos que los problemas sobre las proposiciones sobre la lotería, *bootstraping* epistémico y creencias de orden superior parecen evaporarse una vez que seguimos a Zalabardo al restar atención al papel que desempeña la inferencia en la adquisición de conocimiento. La motivación de Zalabardo para introducir la inferencia competente como una condición suficiente adicional del conocimiento queda entonces socavada.

PALABRAS CLAVE: *Zalabardo, teorías del conocimiento en términos de rastreo, conocimiento no inferencial, evidencia, principio de clausura*.

ABSTRACT

Zalabardo develops a novel tracking account of knowledge which appears to be immune to counterexamples and can withstand at least some of the most pressing skeptical challenges without compromising the closure principle. On his view, sensitivity without method-relativity is a sufficient but not necessary condition on non-inferential knowledge. Beliefs that are insensitive can nevertheless amount to inferential knowledge when adequately evidentially supported. Zalabardo needs inference as an independent source of knowledge as an alternative to method-relativizing, but we argue that problems about lottery propositions, epistemic bootstrapping and higher-order beliefs seem to evaporate once we follow Zalabardo in paying attention to the role played by inference in knowledge acquisition. Zalabardo's motivation for introducing competent inference as an additional sufficient condition on knowledge is thus undermined.

KEYWORDS: *Zalabardo, Tracking Theories of Knowledge, Non-Inferential Knowledge, Evidence, Closure Principle*.