

METHODS MATTER: BEATING THE BACKWARD CLOCK

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ABSTRACT: In “Beat the (Backward) Clock,” we argued that John Williams and Neil Sinhababu’s Backward Clock Case fails to be a counterexample to Robert Nozick’s or Fred Dretske’s Theories of Knowledge. Williams’ reply to our paper, “There’s Nothing to Beat a Backward Clock: A Rejoinder to Adams, Barker and Clarke,” is a further attempt to defend their counterexample against a range of objections. In this paper, we argue that, despite the number and length of footnotes, Williams is still wrong.

KEYWORDS: backward clock, Fred Dretske, knowledge, Robert Nozick, Neil Sinhababu, tracking theories, John Williams

In “Beat the (Backward) Clock,”¹ we argued that John Williams and Neil Sinhababu’s Backward Clock Case fails to be a counterexample to Robert Nozick’s or Fred Dretske’s Theories of Knowledge.² Williams’ reply to our paper, “There’s Nothing to Beat a Backward Clock: A Rejoinder to Adams, Barker and Clarke,”³ is a further attempt to defend their counterexample against a range of objections. In this paper, we argue that, despite the number and length of footnotes, Williams is still wrong. As Shakespeare might have opined: “The Man doth protest too much, methinks!” Tracking theories still beat the clock!

The central issue at the heart of our disagreement with Williams and Sinhababu is the role that methods (Nozick) or reasons (Dretske) play in these accounts of knowledge. Tracking the truth crucially depends on the method or reasons employed in the acquisition of belief. So central are such methods or reasons that it makes little sense to talk about beliefs being sensitive or adherent to the truth except in the context of the method or reasons employed to arrive at such beliefs. It is Williams and Sinhababu’s failure to accord method or reasons

¹ Fred Adams, John A. Barker, and Murray Clarke, “Beat the (Backward) Clock,” *Logos & Episteme* VII, 3 (2016): 353-361.

² See John N. Williams and Neil Sinhababu, “The Backward Clock, Truth-Tracking, and Safety,” *Journal of Philosophy* 112, 1 (2015): 46-55. In this article they cite Adams and Clarke’s earlier defence of tracking theories in “Resurrecting the Tracking Theories,” *Australasian Journal of Philosophy* LXXXIII, 2, (2005): 207-221.

³ John N. Williams, “There’s Nothing to Beat a Backward Clock: A Rejoinder to Adams, Barker and Clarke,” *Logos & Episteme* VII, 3 (2016): 363-378.

their proper place in the respective accounts of knowledge that creates the illusion that the Backward Clock Case is a counterexample. It is no such thing. In what follows, we first revisit Nozick's account of knowledge and the role that methods play in his account. Later, we show why Williams' latest response fails to faithfully respect the tenets of Nozick's view. Finally, we discuss Dretske's appeal to reasons and explain how this appeal does the work that methods do for Nozick. The result is that Williams' response also fails to address Dretske's actual theory.

1. Nozick's Analysis of Knowledge

In fact, there are three accounts of knowledge that Nozick provides: a simplified tracking account where he claims method need not be mentioned because it is not relevant for some straightforward cases, a methods account to deal with more complicated cases where single methods are at issue, and an outweighing account that involves two or more methods of arriving at belief. For our purposes, it is the second account that is needed to respond to Williams' response to us. It states that:

S knows, via method (or way of believing) M that p iff:

1. p is true.
2. S believes, via method or way of coming to believe M, that p .
3. If p weren't true and S were to use M to arrive at a belief whether (or not) p , then S wouldn't believe, via M, that p .
4. If p were true and S were to use M to arrive at a belief whether (or not) p , then S would believe, via M, that p .⁴

Notice that the truth-tracking sensitivity and adherence conditions, i.e., 3 and 4, both explicitly refer to the method. Here is what Nozick says about method:

We need to relate this technical locution to our ordinary notion of knowledge. If only one method M is actually or subjunctively relevant to S's belief that p , then, simply S knows that p (according to our ordinary notion) if and only if that method M is such that S knows that p via M. Some situations involve multiple methods, however...⁵

Nozick goes on to discuss the Father/Son Court Case in order to introduce the third, outweighing, account of knowledge where multiple methods are at play. We now turn to Williams' putative counterexample to Nozick's account of knowledge.

⁴ Robert Nozick, *Philosophical Explanations* (Cambridge: Harvard University Press, 1981), 176.

⁵ Nozick, *Philosophical Explanations*, 176.

2. Williams' Response to Our Response to Backward Clock

Williams and Sinhababu describe The Backward Clock Case as follows:

You habitually nap between 4 p.m. and 5 p.m. Your method of ascertaining the time you wake is to look at your clock, one you know has always worked perfectly reliably. Unbeknownst to you, your clock is a special model designed by a cult that regards the hour starting from 4 p.m. today as cursed, and wants clocks not to run forwards during that hour. So your clock is designed to run perfectly reliably backwards during that hour. At 4 p.m. the hands of the clock jumped to 5 p.m., and it has been running reliably backwards since then. This clock is analogue so its hands sweep its face continuously, but it has no second hand so you cannot tell that it is running backward from a quick glance. Awaking, you look at the clock at exactly 4:30 p.m. and observe that its hands point to 4:30 p.m. Accordingly, you form the belief that it is 4:30 p.m.⁶

They argue that all of Nozick's conditions are satisfied concerning this example but that it fails to be a case of knowledge, thus demonstrating that Nozick's conditions are too weak for knowledge. In particular, if the time were not 4:30 p.m. (not *p*) then you would not believe that it was because, for instance, at 4:31 p.m. you would believe that it is 4:29 p.m. and so forth. You would hold a false belief but you would succeed in not believing that it was 4:30 p.m. as required by Nozick's account. Similarly, in other circumstances where it were 4:30, (say, you were closer to the clock) you would believe that it is 4:30 p.m. Hence, the belief is both sensitive to, and adherent to, the truth value of *p*, i.e., 4:30 p.m., and so satisfies Nozick's truth-tracking conditions, 3 and 4. Now Williams is correct to contend that we have challenged the claim by Williams and Sinhababu that Nozick's third condition is satisfied in the Backward Clock Case. We certainly do deny that Nozick's third condition is satisfied here. Why? This is because we think that the method, i.e., 'looking at the clock and determining what it says,'⁷ is too equivocal to yield knowledge. As we pointed out, on the most plausible interpretation of the example the clock was designed by the cult clockmakers to fool people during the cursed hour. In effect, the clock 'lies' by displaying, for instance, 4:35 when the time is 4:25 and vice-versa. But 'Ted,' as we called the clockmaker, wasn't a perfect liar, for when the clock displays 4:30 it is saying that the time is 4:30. Given Ted's deceitful intentions, the clock might have said the time was 4:30 even if it hadn't been 4:30. For instance, as we suggested, Ted might have made the clock run slowly all during the cursed hour. Hence, condition 3 is not satisfied.

⁶ Williams and Sinhababu, "The Backward Clock," p. 48.

⁷ Adams et.al., "Beat the (Backward)," 355.

At all other times during the hour between four and five, however, the clock succeeds in lying successfully. Hence, for any time during the hour, the method of 'reading what the clock displays' will generate false beliefs. As such, the method employed will generate false beliefs and so your beliefs will be insensitive to the truth-value of p for all values of p other than 4:30. But we also think that Nozick's fourth condition, the adherence condition, is not satisfied in the Backward Clock Case. It is true that we accept that the cognizer has a true belief at 4:30 p.m. But the cognizer does not satisfy the adherence condition. Why? This is because satisfying the adherence condition requires something much stronger than mere true belief, it requires that if it were 4:30 (in other circumstances) then one would believe that it was 4:30 p.m. But this is exactly what is not the case with the Backward Clock. As we pointed out: "His belief is that it is 4:30, and it happens to be 4:30. But it is not the case that he believes it is 4:30 because it is 4:30-his believing it to be 4:30 is not explained by the fact that it is 4:30."⁸ The signal is too equivocal to be reliable in other circumstances since the clock might have been made not to read 4:30 even if it was 4:30 and so one would not believe that P though P is true. Suppose, for instance, the clock shuts off at 4:30 for one minute but otherwise reliably runs backwards from 5 until 4. You wake up, look up, see no time on display, and suspend judgement on the time for that minute. In such a possible world, P is true but you don't believe that P and so condition 4 is not satisfied. We deny, therefore, that condition four is satisfied concerning the Backward Clock Case.

That the method generates a true belief at 4:30 is a chronometric accident caused by the mistake that Ted made in the construction of the clock. Now it is here that Williams suggests that the method need not be reliable for all of these other times during the hour as long as the method works for 4:30 then conditions 1-4 will be satisfied and Nozick's account will incorrectly generate the result that one knows that p . Our mistake, on William's view, is mistaking Nozick's sensitivity condition as a constraint on **METHOD** rather than **BELIEF**. But it is Williams who misunderstands Nozick's theory, not us. This is because it is exactly the **method** that ensures that the correct connection between belief and fact obtains when we know some factual belief, that the belief is both sensitive and adherent. That method must be absolutely reliable with respect to a variety of input beliefs in near possible worlds for S to know that p . It cannot be reliable for just one belief in near possible worlds, such an equivocal method would fail to deliver the epistemic goods. Consider Nozick's Grandmother Case: she believes that her Grandson is well by appeal to visual perception, but if he were sick then

⁸ Adams et.al., "Beat the (Backward)," 359.

her daughter would tell her that he is well anyway. But Nozick tells us that that alternative method, i.e., testimony, should not be allowed to undermine the knowledge caused by the method of visual perception that the Grandmother has. It is exactly because the Grandmother's method, i.e., visual perception, is absolutely reliable for close distances to her in near possible worlds, that she can confidently say that her Grandson is well. Nozick was not just saying that this belief was true in the actual world but subjunctively true as well. That subjunctive truth implicitly refers to what the Grandmother would have believed about p , for all p , that are cases of visual perception under such circumstances for that Grandmother. What provides the basis for the tracking of truth in near possible worlds for that belief, i.e., p , is exactly the fact that that method would track the truth for any visual perceptual belief for the Grandmother under those circumstances in near possible worlds. To think otherwise, is to deny the fact that we are talking about tracking accounts of knowledge at all!

Here is what Nozick says about the Grandmother Case:

Recall the grandmother who sees her grandson visit her and so believes he is healthy and ambulatory; yet if he weren't ambulatory, other relatives would tell her he was fine to spare her anxiety and upset. She sees her grandson walking; does she know he is ambulatory? According to condition 3 we must ask what she would believe if he weren't ambulatory. If the method via which she believes is not held fixed, the answer will be wrong. True, if he weren't ambulatory, she would then believe he was (via hearing about him from other relatives). But the relevant question is: what would she believe if he weren't ambulatory and (as before) she saw him and spoke to him. Thus, to reach the correct answer about her knowledge, the method must be held fixed—that is one of the reasons why we introduced explicit reference to the method or way of believing.⁹

Nozick makes it explicit that the Grandmother would generate other beliefs about her Grandson that are veridical in near possible worlds. The whole mechanism of possible worlds is simply a device to talk about other beliefs of the same kind, i.e., visual perception beliefs, and insist that the method must be held fixed: all visual perception beliefs, all beliefs of that type about her Grandson, must be reliably produced by that method for the Grandmother under those circumstances in order for her to know that p . That is what is meant by saying that a belief is not only true, but subjunctively true: one would have arrived at other related visual perception beliefs veridically in near possible worlds, one would have gotten things right in near possible worlds. Hence, the idea that one must track the truth of 'not p ' veridically demonstrates that the method must be

⁹ Nozick, *Philosophical Explanations*, 216.

absolutely reliable for beliefs of that type. After all, the **very idea** of ‘not p ’ includes, among other things, the entire universe of visual perception beliefs other than p ! When Nozick asserts condition three his point is that, given your method, you would track the truth of ‘not p ’ **veridically**, whether the resulting belief be q , r , or s . Hence, the Grandmother might form a different belief about her Grandson, such as q : “My Grandson is ill as evidenced by the fact that he cannot walk.” One must not believe that p and veridically track the truth such that you don’t believe that, say, q falsely. ‘Not p ’ is a label for a universe of possible beliefs that one would reliably get correct in near possible worlds. That is what provides the subjunctive strengthening of the causal condition that Nozick felt was needed. He, like Dretske, felt that the causal condition was correct as far as it went, it just did not go far enough. The subjunctive allowed them to talk not just about getting the particular causal connection between belief and a fact right in the actual world, but getting the belief/fact connection right in near possible worlds as well. It strains credulity beyond the stratosphere to think that Nozick intended ‘not p ’ to include the idea that one might latch on to ‘not p ’ beliefs that were false and still be using a reliable method. Tracking the truth presupposes the **reliability** of the **method** for producing truth. Reading his account in any other way is simply a misreading of Nozick. The sensitivity condition, condition three, builds into it the idea of an absolutely reliable method, in near possible worlds but not all possible worlds, for tracking the truth of ‘not p .’ The reliability of the method concerning p is substantiated by the fact that that method would be reliable, in near possible worlds, for generating true beliefs. This is the correct understanding of what Nozick was arguing for. The Backward Clock Case would have led to a quick death for Nozick’s theory within minutes of his thinking of the theory if he had understood his own theory as Williams does. Why? Because Nozick himself would have understood that the theory, understood in that way, was bankrupt! But, says Williams, mightn’t Nozick not have noticed that the theory has this very odd consequence that even false ‘not p ’ beliefs can serve to confirm condition three of the theory for a particular p ? The correct answer to this objection is: No, only an extremely uncharitable reading of the theory could possibly interpret Nozick as intending, or leaving open, or suggesting, or not noticing, this interpretation of the theory. The principle of charity counsels us to avoid implausible and unlikely interpretations of the words of an author. If ever there was an implausible and unlikely reading of a theory, Williams’ reading of Nozick is it. There is no possible world where this reading of Nozick passes muster!

The ‘Boy who cried Wolf’ Case, which we developed at length in our reply, was expressly devised to make the point that equivocal signals will not generate

knowledge. Conveniently, Williams ignores this argument from our response. As we noted:

For any time other than exactly 4:30, the subject's belief during that hour-long period will be false. Why? Because the clock lies for all but one moment during that hour-long period. And worst of all, there is nothing in the signal sent by the clock to differentiate when it is telling the false time from when it is telling a true time.

This should remind one of the "little boy who cried 'wolf.'" The boy cries 'wolf' over and over when there is no wolf. Then on the one occasion when there is a wolf and he cries 'wolf,' his cry has become to equivocal, no one can tell from his cry that a wolf is actually there on that one occasion. His cry of 'wolf' still means wolf, but it does not carry the information that there is a wolf. Similarly, the clock's face emits false testimony for 59 minutes during that hour from 4:00 to 5:00.¹⁰

The appeal to Shannon's information theory in *Knowledge and the Flow of Information* was the way that Dretske chose to instantiate the subjunctive condition that he imposed from his early Conclusive Reasons Account of knowledge. The role that Dretske's subjunctive conditional played in his Conclusive Reasons Account of knowledge, i.e., Given R and fixed circumstances C, it is not physically possible that not p, in turn, was taken over by Nozick's third condition on knowledge. Nozick's subjunctive conditional is not identical to Dretske's subjunctive conditional but it imposes a similar constraint on knowledge.¹¹ At any rate, our appeal to information in this example was intended to draw out the problem in Williams' Backward Clock Case by appealing to a Dretskean notion of information via the Boy Who Cried Wolf Case. The upshot is that neither the interpreter of the Boy who cried Wolf nor the ordinary person who sees the Backward Clock displaying 4:30 is in a position to know anything about the wolf, or the time, in such cases.

Williams also mentions that: "Nozick introduces methods into his analysis, not as a way of elucidating sensitivity, but in order to avoid a counterexample."¹² While this is one reason to introduce methods, it is hardly Nozick's only reason to do so. As we mentioned in an earlier paper,¹³ how could condition (4) be satisfied by anyone, if methods aren't the means? Truths don't just pop into heads. It often

¹⁰ Adams et.al., "Beat the (Backward)," 358.

¹¹ Nozick, in speaking of Dretske's condition two, says that: "While this condition corresponds to our condition 3, he has nothing corresponding to 4." (Nozick, *Philosophical Explanations*, 689, footnote 53.)

¹² Williams, "There's Nothing," 364.

¹³ Adams and Clarke, "Resurrecting," 214.

takes hard work (science, detectives) to discover them. We take it as an obvious fact about tracking theories (Nozick's or Dretske's) that beliefs only track in virtue of reasons or methods. Otherwise, such theories would make no sense. In fact, we were able to show that that many apparent counterexamples to Tracking Theories founder by overlooking this important feature of such theories (as made explicit by Dretske¹⁴ and Nozick.¹⁵ So it is a significant error to take Nozick's account of tracking to be only about beliefs and not about how one arrives at those beliefs. By proudly announcing his intention to focus only upon beliefs, Williams guarantees non-success at responding to our reply to his Backward Clock Case. In this context, Williams' claim that we are defending a different theory than Nozick's because we talk about **METHOD** fails. Rather, if one overlooks the crucial role that **METHODS** play in Nozick's account of knowledge (or **REASONS** in Dretske's account of knowledge) then one really just does not understand Nozick, Dretske or Tracking Theories. We suspect, in Williams' case, it is all three. This brings us to Dretske's Conclusive Reasons Account of Knowledge.

3. Dretske's Conclusive Reasons Account of Knowledge

Dretske's early Conclusive Reasons Account of Knowledge is, for many of us, his definitive account of knowledge. The account of knowledge contained in his book, *Knowledge and the Flow of Information*, provides a cognitive science, information-theoretic gloss that essentially reproduces the conclusive reasons story about knowledge. Without pretending to defend that claim, let's rehearse the account of knowledge contained in Dretske's Ur-text, "i.e., Conclusive Reasons." As Dretske states it:

S knows that p just in case

- (1) S believes that p (without doubt, reservation or question) on the basis of R.
- (2) R would not be the case unless p were the case.
- (3) Either S knows that R, or R is some experiential state of S.¹⁶

The subjunctive condition, 2, is to be read as saying that: Given R (your reasons or evidence), and fixed circumstances C (all those conditions that are logically and causally independent of the fact that p), then it is not physically possible that not p . Williams makes his first mistake here by construing Dretske's notion of a reason as referring only to a premise in an argument from an

¹⁴ Fred Dretske, "Conclusive Reasons," *Australasian Journal of Philosophy* 49, I (1971): 1-22.

¹⁵ Nozick, *Philosophical Explanations*.

¹⁶ Dretske, "Conclusive Reasons," 12-13.

internalist perspective. Dretske does not restrict the idea of a reason in that way, but includes one's evidence, i.e., facts one knows to obtain, even if one is not aware of what one's evidence is. Dretske is, after all, an externalist about knowledge. Referring to Dretske's account here, Williams misunderstands Dretske in claiming that: "Here R is a reason that S has for believing that *p*. We nowhere talked of a reason."¹⁷ At any rate, Williams goes on to argue that Dretske's sensitivity condition is satisfied because of the conjunctive reason that the

...hands point to 4:30 p.m. and your clock has always worked perfectly reliably. But this conjunction would not be true unless it were 4:30 p.m., because the hands would not point to 4:30 unless it were 4:30 p.m. This is because the circumstances in which you find yourself include those in which the clock runs perfectly reliably backwards from 5:00 p.m. to 4:00 p.m. Finally, we may stipulate that you know the conjunction that the hands point to 4:30 p.m. and your clock has always worked perfectly reliably. (1) to (3) are all true, but you do not know that it is 4:30 p.m. any more than you know this in Stopped Clock. So Dretske's early analysis is also too weak, predicting knowledge where there is ignorance.¹⁸

In this case, the key question for Dretske would be whether given your reasons or evidence R, and fixed circumstances C, it is physically possible that not *p*. That is, given that the clock displays 4:30 p.m. and has always been reliable, and the fixed circumstances surrounding the production of that clock, is it physically possible that it is not 4:30 p.m.? It is important to note here that Dretske intends the notion of what is physically possible to be constrained by natural law and the circumstances at hand. That is, could that clock have read 4:30 when it was not 4:30 p.m.? As we pointed out in our reply to Williams, the answer to this question for Dretske is "Yes, it is physically possible that the clock could have read 4:30 when it was not 4:30 p.m. at all." As we noted: "The clock in the Normal Clock case wouldn't have said that the time was 4:30 by displaying "4:30" if it hadn't been 4:30. Ted's clock, however, might have done this even if it hadn't be 4:30."¹⁹ The cult might have devised the clock to read 4:30 when it was not 4:30 p.m. by making it run perfectly well backwards but more slowly such that it never recorded the correct time at any moment during that hour.²⁰ Hence, Dretske's sensitivity condition is not satisfied. You can learn things from people, Dretske said, but only from people who would not say something unless it were true. Applied to our case, this suggests that the cult clock-makers cannot be trusted

¹⁷ Williams, "There's Nothing," 374.

¹⁸ Williams, "There's Nothing," 375.

¹⁹ Adams et.al., "Beat the (Backward)," 358.

²⁰ Adams et.al., "Beat the (Backward)," 357-358.

Murray Clarke, Fred Adams, and John A. Barker

because they made a clock that, in effect, lies for 59 of 60 minutes from 4:00 p.m. until 5:00 p.m. Anyone that makes a clock like that cannot be trusted, they might easily have made other deceptive clocks that would lie in all sorts of physically possible ways. But Williams responds to the suggestion that the cult clock makers might have made a clock that was slower by countering the final claim about Ted by us, saying:

This last claim is false. We stipulated that in the actual world, the clock runs perfectly reliably backwards from 5:00 p.m. to 4:00 p.m. So the only time at which its hands can point to 4:30 p.m. is when it is 4:30 p.m. Adams et.al.²¹ point out that the cult could design the clock so its hands wouldn't point to the correct time at any time during the hour that you nap (say by making it run backward more slowly). Perhaps they had that possibility in mind. But as we described Backward Clock, worlds close to the actual circumstances in which you look at it cannot include those in which its mechanism differs from that which makes it run perfectly reliably backwards from 5 p.m. to 4:00 p.m. As we said, this is because the truth-adherence of your belief that it is 4:30 in Normal Clock resides in the fact that you would still have that belief in slightly changed circumstances in which the mechanism of the clock continues to work perfectly reliably. Likewise, the worlds close to the actual circumstances of Stopped Clock surely include those in which the mechanism of the clock is stopped.

What is essential to our counterexample then, is that the behaviour of its mechanism gets fixed across close possible worlds. Anything else, including the intentions of its designers, is simply irrelevant. In fact we introduced the story of the cult into the example to ensure that the behaviour of its mechanism gets fixed across close possible worlds, but other stories could be told. Perhaps the cult intended to symbolize the cursed nature of the hour with a seemingly unnatural phenomenon. Indeed we could dispense with the cult entirely and stipulate that a bug in the programming of the microchip circuit of your clock causes it to run perfectly reliably backwards from 5:00 p.m. to 4:00 p.m. during a particular hour.²²

What is crucial then, for Williams, is that the mechanism of the clock is held fixed across close possible worlds when considering subjunctive conditionals of the sort that Nozick imposes on knowledge. Unfortunately for Williams and Sinhababu, what needs to be held fixed across possible worlds is not **mechanisms** but the **method M** for Nozick, or, for Dretske, the **circumstances C** relative to the reasons or evidence R. Methods are determined to be methods from the inside for Nozick. As he notes:

²¹ Adams et.al., "Beat the (Backward)."

²² Williams, "There's Nothing," 372.

A person can use a method (in my sense) without proceeding methodically, and without knowledge or awareness of what method he is using. Usually, a method will have a final upshot in experience on which the belief is based, such as visual experience, and then (a) no method without this upshot is the same method, and (b) any method experientially the same, the same 'from the inside,' will count as the same method. Basing our beliefs on experiences, you and I and the person floating in the tank are using, for these purposes, the same method.²³

So, for instance, the Grandmother uses the method of visual perception in arriving at beliefs in the actual world and it is this method that must be held fixed in near possible worlds when considering whether the Grandmother knows that her Grandson is well in the actual world. Nowhere does Nozick claim that all circumstances must be held fixed, including circumstances that are logically and causally dependent on the fact expressed by p . Dretske, in fact, is explicit about this. The circumstances, C , that are held fixed when considering subjunctive conditionals relating R and p like his (2) are all those circumstances that are logically and causally independent of the state of affairs expressed by p .²⁴ As Dretske notes: "But does C include all the circumstances that prevail on the occasion in question or only some of these? Clearly not all the circumstances since this would trivialize every subjunctive conditional of this sort."²⁵ Dretske's idea here is that it cannot be the case that all circumstances are held fixed or all subjunctive conditionals would be trivially true. But that is not the case.

In the case of the Backward Clock, then, one cannot hold the mechanism of the clock fixed in near possible worlds because that circumstance is something that is dependent on the fact that p : that it is 4:30 p.m. That is, there is a dependency relationship between the fact that it is 4:30 p.m. and that the mechanism works the way that it does. Change the mechanism, and you change the time. We need to ask, therefore, "If it were not the case that the time was 4:30 is it physically possible that you would believe that it was 4:30 p.m. anyway?" The answer is Yes, the cult might have made the clock display 4:30 p.m. when it was not 4:30 p.m. because they might have made it lie in another way. If they can make it lie one way, then there are many ways that they can make the clock lie. If there is one way, then there are many ways. The point is that the clockmakers made the mechanism causally dependent on the time. The clock flips to 5:00 p.m. at 4:00 p.m. Hence, the clock's mechanism is causally dependent on p : "It is 4:30 p.m." As such, the clock's mechanism must be allowed to vary. You cannot hold the mechanism fixed as Williams and Sinhababu wish to do, and must insist on, to

²³ Nozick, *Philosophical Explanations*, 185.

²⁴ Dretske, "Conclusive Reasons."

²⁵ Dretske, "Conclusive Reasons," 48.

make their purported counterexample work, because it is causally dependent on the fact that the time was manipulated at 4:00 p.m. That mechanism must be allowed to vary or the relevant counterfactual conditional, i.e., The clock would not have read 4:30 p.m. unless it were 4:30 p.m., would be trivialized. As Dretske says concerning defective thermometers, in a parallel case, you cannot trust defective thermometers: “If it is that kind of thermometer, then if S’s only basis for thinking his child’s temperature normal is a 98.6 reading on it, then he does not know that his child’s temperature is normal. It might be normal, of course, but if S knows that it is, he must have more to go on than the reading on this (defective) thermometer.”²⁶ Likewise, you cannot trust defective clocks. If Williams and Sinhababu **could insist** on holding the mechanism **fixed** then they **could** have made their case. However, Dretske is explicit that this is not possible and Nozick’s sensitivity condition imposes the same constraint here as Dretske’s does: to allow the mechanism to be fixed across near possible worlds would be to **trivialize** Nozick’s sensitivity condition, a condition that is equivalent to Dretske’s sensitivity condition.

Another important point about method comes out in the claim, from the long quote from Williams a few pages back, that Williams and Sinhababu could have dispensed with talk of the cult entirely and just had a bug in the microchip of the circuit of your clock cause the clock to run perfectly reliably backwards from 5:00 p.m. to 4:00 p.m. Call this the ‘Buggy Clock Case.’ This buggy clock is no longer properly calibrated once the bug kicks in, and it becomes a ‘broken’ or ‘improperly functioning’ clock analogous to a stopped clock, analogous to a clock that happens to stop at noon one day and happens to restart at noon the next day, etc. The design aspect of such clocks is no longer operative, and therefore they don’t really **SAY** anything about the time, even though they continue to **DISPLAY** the time and appear to **SAY** something about it. We want here to underline a crucial point about the nature of method or reasons for Nozick and Dretske. There is a world of difference between what a clock **DISPLAYS** and what it **SAYS**. The first is a pre-reflective matter, the second involves interpretation and method. The design aspect of clocks only becomes clear if they function in the way that they are supposed to, only if what they **SAY** accords with their design. Moreover, in fact, sometimes people have to learn to ‘read’ a clock, i.e., learn to interpret what the display says. Instructions from the designer (or manufacturer) will accompany a watch in such cases. In this respect, what Williams has to say about method is out of step with what externalists like Nozick and Dretske intend. Williams is not sensitive to the distinction between what the clock **DISPLAYS**, i.e., the position of

²⁶ Dretske, “Conclusive Reasons,” 2.

its hands, and what the clock SAYS, i.e., what it designedly indicates about the current time, and how that distinction functions in Nozick's account of method and Dretske's account of reasons (in his broad notion of reason as including evidence). In fact, Williams evidently did not understand how we were using the term 'SAY' in our reply to him. The result is not only a misunderstanding of our view, but of Nozick's view and Dretske's view. It should also be noted that Williams talks about your **knowing** that the clock has always been reliable in the Backward Clock case, but that is the kind of **internalist** talk that externalists eschew. The possession of reasons or evidence, for Nozick and Dretske, does not require any sort of internal awareness or recognition in the epistemic internalist sense. One's having reasons or evidence is crucial to knowing but may involve no occurrent thought or access to a thought about the method at all. As Nozick says: "A person can use a method (in my sense) without proceeding methodically, and without knowledge or awareness of what method he is using."²⁷ All of this is compatible with the idea that what ultimately counts as the method is experiential states that are internal to the cognizer. In Nozick's sense of method: You and I, and a person floating in a tank on Alpha Centauri might be using the same method because methods are individuated from the standpoint of the cognizer. The cognizer, however, need not have any grasp of what that method is.

4. Closing Remarks

The upshot of this is that Williams and Sinhababu have misread both Nozick and Dretske, since what is held fixed when considering Nozick's conditions 3 and 4 or Dretske's 2 is not mechanisms but the method M or reasons R in relation to p (such as that the Grandmother used the method of visual perception when determining the health condition of her Grandson or the person waking up and using visual perception to determine the time). Facts that are logically or causally independent of p are, however, held fixed. Put otherwise, facts that are dependent on p are allowed to vary. The mechanism of the clock is, therefore, dependent on the fact that p , and so that how that mechanism works must be allowed to vary or we would trivialize subjunctives regarding it. By holding the mechanism of the clock fixed in near possible worlds, Williams and Sinhababu have only succeeded in trivializing what are actually the profound implications of the employment of subjunctive conditionals in the articulation of two truth-tracking accounts of knowledge. Only by distorting the fundamental nature of Dretske's and Nozick's accounts of knowledge have Williams and Sinhababu provided the appearance of a

²⁷ Nozick, *Philosophical Explanations*, 185.

Murray Clarke, Fred Adams, and John A. Barker

counterexample to truth-tracking accounts of knowledge. Hence, Williams cannot insist that the mechanism of the clock be held fixed in near possible worlds. We need to consider alternative near possible worlds where that mechanism is, for instance, simply slowed down and where we always get the time wrong to see that the observer could believe that it is 4:30 in such a world and be mistaken because all of the times are wrong. Such mechanisms, such signals, are much too equivocal to deliver knowledge in accordance with Nozick's or Dretske's accounts of knowledge. As such, they fail to track the truth in nearby possible worlds as promised. Dretske and Nozick tie beliefs via the Method M or Reasons R to facts. Those methods M or reasons R must be sensitive for both Dretske and Nozick and additionally adherent for Nozick in order to track the truth. The method M or Reasons R are held fixed but the circumstances that are logically and causally independent of the fact expressed by p are not held fixed on either account. This is the case because Dretske and Nozick wish to avoid the trivialization of the sensitivity subjunctive conditionals that they employ. The upshot is that Williams and Sinhababu have failed to advance a genuine counterexample to tracking-theories of knowledge.