

Being Pessimistic about the Objective Present

Abstract

Some philosophers argue that non-presentist A-theories (i.e. the views that the tenses — past, present, and future — are objective features and that not only present things exist) problematically imply that we cannot know that this moment is present. The problem is usually presented as arising from the combination of the A-theoretic ideology of a privileged presentness and a non-presentist ontology. The goal of this essay is to show that the epistemic problem can be rephrased as a pessimistic induction. By doing so, I will show that the epistemic problem, in fact, stems from the A-theoretic ideology alone. Hence, once it is properly presented, the epistemic problem presents a serious threat to all A-theories.

Keywords: Metaphysics of Time; Privileged Present; Pessimistic Induction

1 The Epistemological Question

There were many people before us; they all believed that their moment, instead of ours, *is* the present (they didn't believe that their moment *was* present). This observation has led philosophers to believe that there is an epistemic tension in non-presentist A-theories, namely, those theories that say that the tenses are real *and at least* the past still exists.¹ Suppose “present” isn't an indexical like “here” but denotes an objective feature of a special moment. Then, the overwhelming majority in the history of mankind had beliefs about the location of presentness that are false (even though those beliefs *were true at that time*). An epistemological question arises: if all those beliefs about the location of presentness are false, doesn't that give us a reason to think the same about our beliefs on

¹ Theoretically, to be a non-presentist A-theorist, one just has to be an A-theorist who accepts the reality of the tenses and also think that some moments other than the present one exists. So, a non-presentist A-theorist can defend the view that only the future and the present moments exist and *not the past*. I define non-presentist A-theory in the way I do here because the growing block view and the moving spotlight view are the only two non-presentist A-theories being taken seriously in the literature. I want to focus on them and set aside other theoretical possibilities.

the same topic? For some philosophers, this questions the plausibility of the attempts to combine an A-theoretic commitment to an objective presentness and a non-presentist temporal ontology (namely, the non-presentist A-theories).

The primary goal of this essay is to argue that, contrary to traditional wisdom, this epistemic tension resides solely in the A-theoretic ideological commitment to an objectively privileged present.² The tension has nothing to do with our temporal ontology. Hence, it's a mistake to think that there is an epistemic problem only for the non-presentist A-theories. There is a serious epistemic problem for all A-theories.

Here is how I'll proceed. After introducing the epistemic problem that is typically presented as a problem for the non-presentist A-theories in section 2, I'll argue, in section 3, that Ross Cameron's attempt to generalize the problem for all A-theories fails. In section 4 - 6, I'll offer a new argument to show that the epistemic problem challenges all A-theories. To do that, I'll introduce a novel way to flesh out the epistemic problem in terms of a pessimistic induction, which renders the ontology of time irrelevant. Finally, in section 7 - 8, I'll address two apparent answers to the pessimistic induction against the A-theory.

2 A Skeptical Problem

It has long been pointed out that there is an epistemic tension in the non-presentist A-theories. The tension has been developed in different ways, but it has almost always been understood as a

² Here I'm using Quine's (1951) distinction between a theory's ontological and ideological commitment. The ontological commitments of a theory are the objects it posits; the ideological commitments are the basic unanalyzable notions the theory introduces. The A-theories are committed to a primitive notion "present" that represents an objective presentness.

skeptical problem. That is, the problem is taken to be that, based on the fact about past people's beliefs, if one accepts non-presentist A-theory, then one has to accept that "nobody ever knows which time is absolutely present." (Russell 2015: 3) — in particular, we don't know that this moment is present.

The problem has been fleshed out in two ways. Often, the skeptical problem is articulated in terms of the evidential indistinguishability of people before us and ourselves (Braddon-Mitchell 2004, Heathwood 2005, Merricks 2006). If the non-presentist A-theory is true, there are people before us who believe that, say, 1985 is the present year. Those beliefs *are* false. But those people are in a similar epistemic situation as I am from the first person's perspective as far as the location of the privileged presentness is concerned. So, from what I have access to, I cannot tell the difference between those people before me and myself. As a result, I'm not justified in believing that I'm right and those people are wrong when I believe that this moment is present — that is, I have no epistemic resources to rule out the possibility that I'm one of those people who are stuck in the past and that this moment is in fact not present. Justification is necessary for knowledge. Thus, I don't know that this moment is present if non-presentist A-theory is true.

Others try to develop the epistemic tension in terms of the *safety* requirement for knowledge instead (Cameron 2015; Russell 2015). The idea is that if a person knows that p, that person would still know that p at all close enough possible worlds. Assuming that all the past people still exist and are "preserved" in the past, a world at which this moment is a bit earlier than the objectively present moment with everything else remaining the same *is a close enough possible world* at which I believe but don't *know* that this moment is present (because that belief wouldn't be true). Therefore, *if* both the non-presentist A-theory and the safety principle for knowledge are true, we don't know that this moment is present.

Here's a fact: we certainly know that this moment is present. But, if non-presentist A-theory is true, we don't have knowledge that this moment is present. Hence, we have a *reductio*.

3 Cameron's Generalization of the Skeptical Problem

A non-presentist A-theory has an ideological component and an ontological component. The ideological component is about accepting a privileged presentness as an objective feature of reality. The ontological component is the claim that not only the present moment but at least the past moments also exist. As we have seen, the traditional presentations of the skeptical problem capitalize on the idea that this particular blend of ideology and ontology implies that people before us still exist and have very different beliefs about the location of the privileged presentness. Presented as such, the problem is meant to target the non-presentist A-theorists specifically.

Cameron (2015) questions this orthodoxy. He argues that, if there is a skeptical problem, it's at best a dialectically weak problem for all A-theories, presentism and non-presentism alike (ibid 24). He thinks so because of the similarity he sees between the epistemic problem and the problem of external world skepticism.

In the case of external world skepticism, the issue is that we have no evidence that allows us to rule out the *epistemic possibility* that we are brains-in-vats. Cameron thinks that we should understand the epistemic problem against non-presentist A-theories in the same way. If some form of non-presentist A-theory is true, we don't have evidential resources to rule out the epistemic possibility that we are in the past and hence we don't know that we are in the present. Since the problem is about epistemic possibility, that presentism is true (or even metaphysically necessary) wouldn't help, for such metaphysical truth alone wouldn't rule out unwanted *epistemic* possibilities (ibid: 25). Understood this way, the problem applies to all A-theories, whether or not one has a presentist

ontology. (Yet, it's overly demanding to require us to be able to rule out all alternate epistemic possibilities in order to claim knowledge. Hence, this presents at best a dialectically weak objection.)

I don't think this is a good reason for thinking that the epistemic problem applies to all A-theories. Suppose I have dinner with some friends. When the check arrives, we all take a quick look at it. I think each of us has to pay \$22. But it turns out that everyone else thinks that it's \$26 per person. Given that so many people actually come to a different conclusion based on the same evidence, I don't *know* that each of us has to pay \$22.

If we were to apply what Cameron says about the epistemic problem to the dinner case, he would be saying: surely I shouldn't claim that I know that each of us has to pay \$22; but whether or not many people *actually* think that it's \$26 per person isn't the point, what's crucial is merely the fact that, given the evidence of a quick glance at the check, it remains *epistemically possible* for one to conclude that it was \$26 per person.³

This isn't an accurate description of the epistemic aspect of the dinner case. Surely *if* I were a radical skeptic who requires knowledge to be based on evidence that rules out all competing epistemic possibilities, I *would* have reason to deny knowing that the meal costs \$22 per person even if no one *actually* thinks otherwise. But radical skepticism isn't the reason behind the self-doubt in the dinner case. The fact that people who *actually* think that the meal costs \$26 per person exist is *crucial* to my self-doubt. I wouldn't have doubted myself had I not thought that some people actually think that the meal costs \$26 per person. In short, it would be a distortion of the case to insist that

³ See Miller (2018) for an in-depth discussion of how to understand the epistemic problem without any radically skeptical principle about justification. In the end, her version of the problem targets non-presentist A-theories alone. I'll show that there is a way to present the problem to target all A-theories.

what's really going on is that a glance at the check fails to rule out the epistemic possibility that the meal costs \$26 per person.⁴

If we choose to understand the epistemic problem for the non-presentist A-theories as a radically skeptical one, then it's indeed a challenge to all A-theories. Cameron is right about that.

⁴ I'm certainly simplifying matter for the sake of getting my point across more efficiently. Here, I write as if only *actual* disagreements can lead to reasonable doubt. But, strictly speaking, that isn't true. As Kelly puts it:

[I]t is extremely implausible that actual disagreement is always more epistemically significant than certain kinds of merely possible disagreement. After all, whether there is any actual disagreement with respect to some question as opposed to merely possible disagreement might, in a particular case, be an extremely contingent and fragile matter. (2005: 181)

In other words, if the fact that a disagreement is merely possible instead of actual is due to some fragile accident, i.e. that the disagreement could have very easily been actual, then the merely possible disagreement may have (almost) as much epistemic force as actual disagreement. In the dinner case, I set aside the issue of *nearby* possible disagreements and worked with the simple dichotomy between actual and merely possible disagreements. I consider such simplification to be harmless in this context because, first of all, the epistemic problem for the non-presentist A-theories is indeed primarily about *actual* people having *actual* beliefs about the present being elsewhere. Furthermore, the kind of epistemic possibilities Cameron targets are *meant to be* remote: the epistemic possibility that we are *currently in the past or future* while there is another moment that is the present instead. That plays a key part in his claim that the epistemic problem is a dialectically weak one because it assumes that one needs to have evidence to rule out even the most remote possibilities. Even though it's strictly speaking right that some merely possible disagreement is epistemic significant, it isn't significant in this particular dialectical context.

And the challenge would indeed be dialectically weak. But Cameron fails to make a convincing case for interpreting the epistemic problem this way. Like the dinner case, the epistemic problem is meant to be based on the fact that people in the past *actually* believed that this moment that we are isn't present. Fleshing out the epistemic problem as if it's a matter of ruling out epistemic possibilities, as if these actual, past beliefs play no genuine role in the problem distorts it.

I agree with Cameron that the epistemic problem is a problem for all A-theories. But his argument for this conclusion is flawed. In the next section, I'll offer a new argument. But, whereas he aims to defend non-presentist A-theories by showing that, if there is an epistemic problem, it's at best a weak problem for all A-theories, I aim to raise a genuine epistemic challenge to all forms of A-theory.

4 Epistemic Problem Redo: A Pessimistic Induction

Here are four assumptions that I find independently plausible.

(1) *Naming past beliefs is possible.* People before us held beliefs about the location of presentness, e.g., my grandfather once believed that 1967 *is* the present year. From now on, let's name these beliefs B_1, B_2, B_3, \dots . I take it that it's unproblematic to name things before us, regardless of one's ontology of time. After all, we should be able to name Gödel or Napoleon (I just did!) even if we were all presentists who think that Gödel and Napoleon are no more.

(2) *There are present tense truths about past objects.* No matter what ontology of time one ends up endorsing, we should be able to make sensible **present tense** claims about things before us. For example, not only can I name Napoleon "Napoleon", I can say that Napoleon is dead. This present tense claim is even truth-apt; even a presentist *should* say it's true.

Of course, for a presentist, "Napoleon" is an empty name. We already have independent reasons to think that there are meaningful and true claims with empty names. It's a task of

philosophy of language to theorize about them. For the presentists, “Napoleon is dead” happens to be an instance of that task. I leave it to our presentist to pick her favorite philosophy of language to make sense of the truth that Napoleon is still dead.

(3) *There are present tense truths about the truth-values of past beliefs.* This comes as a natural package with the assumptions (1) and (2). For the past belief B_1 and any predicate F , unless one doesn't accept assumption (1) and (2), there is no non-ad-hoc reason for denying that *that B_1 is F* is at least a meaningful present tense claim which may be true or false. Specifically, F can be a predicate about B_1 's truth value. For example, it's sensible to ask whether it's true that *that B_1 is false*. The same goes for B_2, B_3, \dots

(4) *If we accept the non-presentist A-theory, we should accept that past beliefs about which moment is present are false.* For any objective property F and an object o , the truth value of the belief *that Fo* changes when o changes regarding F . Suppose the non-presentist A-theorists are right that “present” isn't an indexical and that it denotes an objective property and that there is only one privileged present. Then, B_1, B_2, B_3, \dots **are** almost all false, even though they **were** once true. E.g., my grandfather's belief *that 1967 is the present year* **is** no longer true. (We focus on the *non-presentist* A-theories right now. But just like we don't need to think that Napoleon exists to think that the present tense claim “Napoleon no longer exists” is true, saying that “ B_1, B_2, B_3, \dots are almost all false” is true doesn't require that B_1, B_2, B_3, \dots presently exist. This point will play a big role in section 6.)⁵

⁵ “ B_1 ”, “ B_2 ”, “ B_3 ”... refer to beliefs before us. I say that “ B_1 is false” *is* true. There has been a standing problem for presentism with respect to apparently true claims that refer to past objects. Presentists deal with the problem in various ways. I don't want to go into the details; but the bottom line is, however the presentists choose to handle the issue, I believe their solution *should not* end up saying that there are no

What do these four assumptions get us? Since the beliefs B_1, B_2, B_3, \dots , which are all false, aren't randomly grouped together (they are beliefs on the same topic), we have an inductive reason to think that *my belief* on the same subject matter, namely, my belief that this moment is present (let's name this belief B_0), **is also false**. This is analogous to the pessimistic induction in the philosophy of science: when we look at the history of science, most of the theories that were once accepted turn out to be false; so, by induction, it seems that we should think that our current theories, which we come to accept based on similar procedures, are also false. Let's call this inductive reasoning about the falsity of B_0 the **pessimistic induction**.

Whereas B_1, B_2, B_3, \dots **are** almost all false, they ***used to be*** true. The location of presentness changes. Embracing that is part the point of being an A-theorist. My grandfather's belief that 1967 is present *is false* but it *was true* when it was held in 1967. So, there is another induction in the neighborhood. The past beliefs B_1, B_2, B_3, \dots *were* all true. Hence, by a different induction, my belief B_0 is true: this moment is present. Let's call this the **optimistic induction**.

The pessimistic induction is based on how most of those beliefs (B_1, B_2, B_3, \dots) **are**. (They are false.) And the optimistic induction is about how most of those beliefs **were**. (They were true.) When we want to figure out how things are, an induction based on how things are simpliciter overrides an induction based on how things were. Here's an example to illustrate why this is true. I've eaten oranges my entire life. Oranges used to be sweet. But things have changed. Oranges these days are mostly sour. I'm wondering whether the slice of orange I'm about to put in my mouth is sweet or sour. There are at least two inductions to be had here. Based on the fact that oranges have almost always been sweet, I have an inductive reason to believe that this orange is sweet. This is an

present tense truths about past objects. It has to be true, for example, that Napoleon *is* no longer alive. So, I'm setting aside Markosian's (2004) suggestion that claims about past objects are all false.

optimistic induction. But knowing that oranges are typically sour, I also have an inductive reason for believing that this orange is sour. This is a pessimistic induction. When I'm interested in finding out whether this orange *is* sweet or sour, it seems obvious that the pessimistic induction based on how oranges typically are overrides the optimistic induction based on how oranges typically were.

Similarly, when we are interested in finding out whether my belief B_0 is true, the pessimistic induction overrides the optimistic induction and the fact that almost all of B_1, B_2, B_3, \dots used to be true wouldn't help undermine the pessimistic induction which concludes that my belief that this moment is present is false, i.e., that this moment isn't present.⁶

Let me be clear: of course, I *don't* endorse the pessimistic induction. (You'd be surprised how often I'm presented with pushback as if I do.) Obviously, we know that this moment is present. More specifically, to doubt that this moment is present based on the pessimistic induction is absurd. Since drawing conclusions about objective features of things by induction is legitimate, the non-presentist A-theory leaves us no choice but to accept the pessimistic induction and accept that we

⁶ The pessimistic induction I've just introduced sounds similar to the reasoning based on a principle Cameron calls *Statistical Knowledge*: "If you believe p on basis E then, if most of the people who believe p on basis E believe falsely, you do not know p on basis E ". (2015: 43) The crucial difference, however, lies in this. For Cameron, the principle Statistical Knowledge is just another way to capture the safety requirement for knowledge: "I think [Statistical Knowledge] only sounds appealing because [the safety requirement] is appealing". (ibid: 43) On the contrary, the rational pull of my pessimistic induction doesn't rely on the *modal* character of knowledge, e.g., the safety requirement. All I need for the pessimistic induction about the objective presentness to work is the innocent idea of the legitimacy of induction about the *objective* features of things. The rational appeal of induction doesn't stem from the safety principle; even a modal skeptic can find induction reasonable.

don't know that this moment is present. This consequence is absurd. By *reductio*, we should conclude that the non-presentist A-theories are false.

On the contrary, if the B-theory were true instead, B_1, B_2, B_3, \dots are *all true* because "present" would be an indexical instead of a word denoting an objective property that passes from moment to moment. There won't be a legitimate pessimistic induction by the light of the B-theory. Unlike the B-theory, the non-presentist A-theories lack the theoretical resources to explain in a principled manner why this pessimistic induction is no good.

5. Pessimistic Induction is Bad Induction?

The pessimistic induction I have just presented is sometimes dismissed based on the analogy that one can't inductively conclude that one's friend is dead just because most people are. That's a mistake. There is a reason why this induction about death doesn't work under *normal* circumstances. And that reason doesn't apply to the induction about the objective present.

Given the non-monotonicity of induction, additional information can lead us to reject the conclusion of an otherwise legitimate inductive inference. For example, I see my friend in front of me and all the graves of the past people. This perceptual information undercuts the induction. In the case of my pessimistic induction, however, nothing separates my belief about the location of the objective present (i.e. B_0) from B_1, B_2, B_3, \dots . For one thing, $B_0, B_1, B_2, B_3, \dots$ are all produced in the same way. I come to believe that this moment is present in the same way my grandfather formed the belief that 1967 is the present. It's not as if I've come to believe that this moment is present via some novel epistemic strategy.⁷ That's what makes my pessimistic induction click: if we are working

⁷ See Miller (2018) for an argument against those who reject this claim.

within a non-presentist A-theoretic framework, no extra information about my belief undermines the inductive inference.

My pessimistic induction relies heavily on the premise that B_1, B_2, B_3, \dots are mostly false. Perhaps our non-presentist A-theorist can pushback on that. Perhaps she would say that, although the word “present” is not an indexical, belief contents are all implicitly time-indexed. She might propose that, when a person, say earlier in the day at 8 am, held the present tense belief *that there is a goat in the backyard*, the content of that person’s belief in fact contains a hidden temporal index: *that there is a goat in the backyard at 8 am*. Due to this hidden time-index, his belief that there is a goat in the backyard is evaluated at the world when it was 8 am, regardless of what time it is when the evaluation is done. Suppose a goat indeed showed up at 8 am. The belief *is* true. In other words, we evaluate a belief that p by going all the way back in the moment when the belief was entertained and evaluate the belief by *treating that indexed moment as the present*. If we apply this proposal to beliefs about the location of presentness, the content of my grandfather’s belief *that 1967 is present* contains a hidden time-index: *that 1967 is present at that moment* (presumably a moment in 1967). If so, my grandfather’s belief remains true because 1967 is indeed present in that moment. For the same reason, B_1, B_2, B_3, \dots were true and **remain true**. There is no pessimistic induction.

Our A-theorist cannot knock down the pessimistic induction this way. If belief contents are all time-indexed in this way, all our beliefs will turn out to be about unchangeable facts. For example: *That there is a goat in the backyard* can change but *that there is a goat in the backyard at t* can’t. Time-indexing our beliefs implies that we are incapable of entertaining beliefs about changeable events. A major motivation for the A-theories (and hence for the non-presentist A-theories as well) is the intuition that there are real changes in reality and having different eternal time-indexed events alone is not real change — by the light of the A-theorists. It’s definitely possible that reality contains changes but, somehow, we can only entertain beliefs about eternal (time-indexed) events. But the

latter comes in stark tension with the claim that we have an intuition – whatever that is – that there are real changes. One cannot plausibly claim to have an intuition about real changes while denying that we can even entertain a belief about events that can change. Hence, time-indexing beliefs undermines a major motivation of A-theories. The (non-presentist) A-theorists should accept that most of B_1, B_2, B_3, \dots used to be true, but are false.

Alternatively, instead of adding implicit temporal indexes in the content of B_1, B_2, B_3, \dots , our non-presentist A-theorist might suggest that B_1, B_2, B_3, \dots are true simply because the truth-values of belief-contents (and hence the beliefs themselves) are supposed to be evaluated at the **context of utterance/entertainment**. For example, in 1967, my grandfather believed *that 1967 is the present*. Say there is no implicit temporal index in the content of this belief. The belief is nonetheless now true if, as a semantic rule, a belief's truth-value is obtained not in the context in which the evaluation is done (i.e., right now) but in the context in which the belief was entertained (i.e., 1967, when my grandfather had the belief). Evaluated this way, my grandfather's belief **is true**. The same applies to B_1, B_2, B_3, \dots , making them mostly true even though belief contents don't contain implicit temporal indexes. My pessimistic induction cannot get off the ground.

That doesn't work. My grandfather believed that 1967 is present. There is no true belief about something false. What exactly did my grandfather believe? *That 1967 is present*. We should think that *that* remains true if we think that true beliefs stay true eternally. Generally, if we accept that beliefs have their truth-values eternally, for anything that we have ever believed, we should believe that they remain true. This forces us to accept that we don't have beliefs about anything we consider changeable. Again, this undercuts the major motivation to be an A-theorist. An A-theorist shouldn't think that beliefs have eternal truth-values even though it's consistent with their view to think so.

On the contrary, if I believe *that 1967 is present* to be now **false**, which seems to be the more reasonable thing to say, then *what my grandfather believed* is false. But then I no longer accept that

beliefs have fixed truth-values. B_1, B_2, B_3, \dots were once true, but *are* false. The pessimistic induction is back in business.

6 Induction & Temporal Ontology

In response to the standard epistemic problem, Forrest (2004) argues that, although there are past moments and past people, people in the past are no longer conscious and no longer have beliefs.

Technically, this is a legitimate response to the epistemic problem as it has been standardly presented.

But the non-presentist A-theorists *cannot* block my pessimistic induction by saying that B_1, B_2, B_3, \dots don't exist anymore.

No matter what one's considered metaphysics of time is, one has to allow induction about things simultaneous with us to be based on things before us. That's how we learn from induction. So, *regardless of our ontology* about past beliefs, we have to allow inductive reasoning about our presentness locating beliefs *at this moment* to be based on the presentness locating beliefs *before this moment* (i.e., B_1, B_2, B_3, \dots). It's true *that* B_1, B_2, B_3, \dots *are false*. Thus, I conclude inductively that our presentness locating beliefs *are also false*. The fact that we want induction to reach out to things located at times before us regardless of temporal ontology makes the pessimistic induction immune to responses that are legitimate answers to the epistemic problem traditionally formulated.

It's for exactly the same reason that *a presentist ontology* wouldn't help an A-theorist circumvent the pessimistic induction. The pessimistic induction doesn't depend on the *existence* of past moments, past people, and past beliefs at all. It doesn't even rely on their existence's being possible. The pessimistic induction stems from certain present tense *truths* about the past, not *existence* of the past. The following claim is *true* regardless of our ontology of time: Napoleon is dead. This is also true regardless of our ontology of time: B_1, B_2, B_3, \dots are false. As long as we have truths/falsehoods about the past, the pessimistic induction works even if presentism is necessarily true.

Here let me borrow something from Peter van Inwagen's argument for incompatibilism. Van Inwagen (1986) presents three versions of his argument for incompatibilism in his essay on free will. The reason for presenting three versions of the same argument is so that he would be in a position to show that, if an objection against his argument works for only some but not all three ways of presenting his argument, that objection only challenges something contingent on certain way in which his incompatibilist argument is presented, not the argument itself.

Back to our case: by showing that we can unwrap the epistemic tension in terms of a pessimistic induction, I show that the epistemic tension can be understood in a way that has no bearing on the ontology of time. I grant that presentism is technically a legitimate response to the epistemic problem when it's presented in the standard way. But what I have shown is that such a response works only under some but not all articulations of the epistemic problem. Thus, attempts to deal with the epistemic problem by appealing to an ontology of time, even if they succeed technically, are solving the problem in the wrong way. They aren't solving the problem by addressing the epistemic tension itself but simply by targeting something peripheral to the problem.

Finally, presentists may be tempted to challenge the pessimistic induction's conclusion by appealing to presentism and *cogito ergo sum*. But appealing to presentism wouldn't help. The epistemic problem — as I present it — says: if some form of A-theory is true, we don't know that this moment is present. Since we know that this moment is present, no A-theory is true. Notice that the *reductio* begins with "if some form of A-theory is true", not "if some form of A-theory is *known* to be true". From the fact that I *know* that I exist and the *assumption* that presentism is true, I cannot conclude that I *know* that this moment is present. Analogy: from the fact that I know that I exist and the *assumption* that I am a dinosaur, I cannot conclude that I *know* that some dinosaur exists. The knowledge that I exist can only help challenge the pessimistic induction if we also assume that I *know* that presentism is true. But no one in this context should assume that.

What is the point of presenting the epistemic problem? So, we *know* that non-presentist A-theories can't be true. In fact, if I'm right about the pessimistic induction, the epistemic problem is presented *so we know* that A-theories simpliciter cannot be true. If that's the goal of the challenge and the point of contention, surely it's dialectically misguided to try to defuse the epistemic problem by relying on the *assumption* that we already know that presentism (and hence some form of A-theory) is true.

Quite the contrary, say the epistemic problem shows that we cannot know that this moment is present if there is a privileged present, and say we know that we exist at this moment. That should lead us to conclude that we cannot know that presentism is true. So, if presentism is true, we cannot know that presentism is true.

7 About Time?

I mentioned that my argument is analogous to the pessimistic induction against scientific realism. One might then wonder whether the standard responses to the pessimistic induction against scientific realism apply directly to the pessimistic induction against A-theories. If they do, one can't help but suspect that the pessimistic induction against the A-theories isn't really a problem about time. If it isn't really about time, one might argue that it isn't a proper way to flesh out the epistemic problem against non-presentist A-theories after all. And I fail to offer a novel way to present the epistemic problem *about time* to show that temporal ontology is irrelevant.

A cheap response — but not entirely without merit — is that that a single answer *may* address both problems doesn't mean they aren't distinct problems. An analogy: supervaluationist semantics is used by some to address problems about future truths and problems about vagueness. But there is a more satisfying answer to the objection, by showing that there are importantly different factors at play in the two pessimistic induction.

There are three general strategies to address the pessimistic induction about science for scientific realists in the literature. (1) We may say that the pessimistic induction isn't cogent by questioning its premise about the history of science; perhaps genuine science doesn't get things wrong as frequently as the anti-realists have us believe. (2) We may say that the induction is weak because, *even if* the historical claim about the history of science is true, it doesn't offer good logical support for the anti-realist conclusion. (3) We may bite part of the bullet and do damage control by admitting that the pessimistic induction is successful against a part, but *only a part*, of what our scientific theories say; thus, we can rationally remain realists about a part of our scientific theories. In the following, I'll explain why none of the typical way of pursuing these three approaches in philosophy of science obviously applies to the pessimistic induction about time.

Let's start with approach (3). Some scientific realists argue that what our scientific theories say are complex, with different aspects. Only some aspects of our previous scientific theories have been repeatedly shown to be false. If so, the pessimistic induction simply requires us to be more selective in our realism, not to give it up entirely. Hacking (1983), for example, suggests that our scientific theories tell us what entities there are and how those entities behave. What has gone wrong *persistently* in the history of science isn't about what entities exist — not that we don't make mistakes there — but how those entities behave. This remark, if true, allows the realists to do damage control. The pessimistic induction still allows us to be scientific realists as long as we are modest about our realism. We can accept realism about what entities exist but not about how these entities behave. This view is called entity realism.⁸ Worrall (1989) and Ladyman (1998), by contrast, seek damage control elsewhere. They think that the content of our scientific theories has two aspects: the mathematical equations and the interpretation of such equations that tells us the intrinsic nature of

⁸ See also Charkravartty 1998.

the things behind those equations. As science progresses, they argue, the mathematical equations tend to persist while everything else falls apart. If so, we can still be scientific realists as long as we contain our realism to the structure described by those mathematical equations instead of the interpretations of what's behind those structural behaviors described by the equations. The view is called structural realism.⁹

The debate about scientific realism isn't my concern. My concern is the simple belief that this moment is present. Unlike our scientific theories, this belief is as simple as a belief can be. It's so simple that it's unclear how to isolate aspects of its content like entities vs. behaviors of those entities or mathematical equations vs. interpretation of those mathematical equations. So, even if the damage control strategy works for the pessimistic induction about science, it's unclear that it's applicable to the pessimistic induction about time without compromising the idea that the belief that this moment is present is about presentness as an objective feature.

How about approach (1)? Scientific realists may argue that the things we say are usually a mixed bag in terms of *how much we mean it*; not everything we say expresses our *considered* beliefs. Scientists are no exceptions. Even scientists would acknowledge that some of the things they say are mature and considered science, while some other things they say, not that they are random, are more speculative. The scientific realists may argue that the pessimistic induction gets the history of science wrong. Although the immature and speculative claims the scientists make have been constantly replaced, those aren't *genuinely* scientific statements. Once the scientific research on a topic has reached maturity, it gives us genuinely scientific claims that are rarely replaced. Scientific realism

⁹ The distinction between the structural and non-structural aspect of scientific theories isn't easy to flesh out rigorously. In fact, as Psillos (1999) argues, doing so without compromising the view's claim of being a realist position is a difficult task for the structural realists. I don't *know* whether that can be done.

should be understood as a realism about mature scientific theories (e.g. Psillos 1999: 105-108). Whether this describes the history of science accurately is an empirical question I don't intend to settle. Even if this approach works for the scientific realists who want to resist the pessimistic induction, it clearly doesn't apply to the pessimistic induction about time. When I believe that this moment is present, my belief is in no way more mature than my grandfather's belief.

Finally, let's consider approach (2). A good example is Peter Lewis's (2001) response to the pessimistic induction.¹⁰ Roughly put, he thinks that the pessimistic induction in science commits a statistical fallacy. *Even if* the historical premise were true, it doesn't lend support to even a partially anti-realist conclusion about science. Here's the statistic fallacy he has in mind, which is also known as the *base rate fallacy*.¹¹

The pessimistic induction in science aims to show that success isn't a reliable indicator of truth by pointing out that, for all the theories that enjoy success, a substantive portion of them are false. Lewis argues that this is bad reasoning. Imagine that there is a new test for the x-gene (as in the X-men comics). Say out of the 10 positive tests it produces, 9 turn out to be false positives — the person who tested positive actually doesn't have the gene. That sounds bad. The false positive to true positive ratio is high — 9 to 1. One might be tempted to conclude that the test is unreliable. And this is basically what the anti-realists do when they notice that scientific success, used as an indication of truth, produces a huge number of false positives. The false positive to true positive ratio is high. Thus, they are tempted to say success is an unreliable indicator of truth.

But we shouldn't give in to this temptation, Lewis argues. The 9 to 1 ratio *alone* tells us nothing about reliability of the x-gene test. Suppose that 9991 people, who don't carry the x-gene,

¹⁰ See also Lange 2002.

¹¹ Lewis labels it the *false positives paradox* instead (2001: 376).

are also tested and are correctly tested negatively. Let's put the 9 false positives into perspective: there are 10000 test subjects who don't carry the x-gene and the test only mistakenly marks 9 of them positively — only 0.09 percent. That is a pretty impressive number.

The initial temptation to say that the test is unreliable is due to the fact that we forget to consider the base rate: how likely it is for people to carry the x-gene. It's very unlikely. Most people don't have it. With an extremely large number of negative cases out there (i.e., people who don't have the gene), the *ratio* of false positive cases to true positive cases is naturally going to be high even if the *percentage* of overall false positive mistakes is just 0.09%. 9 false positives seem like a big number if we compare it only with the 1 true positive. But that isn't the right comparison to make if we want to learn about reliability of the test. 9 is a negligibly small number when we consider the 9991 cases of the **true negatives**. With that information in mind to help us put numbers into perspective, the illusion of unreliability would be washed off.

Lewis thinks that the same mistake occurs in the pessimistic induction about science. Given all the false positives — i.e. successful theories that are false, it appears that success is unreliable indicator of truth. But we also need to ask how many true negative cases there are: theories that are false and unsuccessful. It seems plausible to suppose that the number is enormous. Hence, even though successful false theories outnumber successful true theories, that *alone* shouldn't give us a good reason to think that success is an unreliable indicator of truth.

There are philosophers who questions Lewis's response to the pessimistic induction (see Saatsi 2005). I remain neutral about that. To me, *even if* Lewis is right about the pessimistic induction of science, it doesn't seem to be applicable to the pessimistic induction about time. Lewis's argument rests on one observation: with a large number of true negatives, false positives would fail to indicate unreliability. In the science case, such true negatives are cases of unsuccessful false theories — “negative” as in the theories' being false and “true” as in these theories' falsehood is correctly

indicated by their lack of success. Lewis's argument doesn't apply because I don't think there are many true negatives in the case of time.

People form beliefs about their moment being the present one in the same way. My grandpa, in 1967, formed the belief that 1967 is the present in the same way I, in 2020, form the belief that 2020 is the present. This belief forming mechanism reveals that a moment is the present one while operating in that moment (and that, in turn, allows us to infer that all other moments aren't present.) The pessimistic induction casts doubt on the reliability of this belief forming mechanism because the absolute majority of $\{B_0, B_1, B_2, B_3, \dots\}$ — products of this mechanism — are false.

To apply Lewis's comment about base rate fallacy to this pessimistic induction, we need to ask: what would be a true negative? A true negative case would be a case like the following. There is a moment t that isn't the present (a negative case). Someone at t uses the same belief forming mechanism as we do; the mechanism operates at the moment t and generates the accurate belief that t is *not* present (true negative case).

Are there many cases like that — a person, at a non-present moment t , forming a true belief that that moment *isn't* present? I seriously doubt it. If so, unlike the pessimistic induction about science, where one might say the appearance of unreliability is misleading because there are an enormous number of true negatives, we don't have many truth negatives in the pessimistic induction about time. Lewis's response wouldn't apply in this context even if it works for the scientific realists.

So, whereas there are ways to be a scientific realist in the face of the pessimistic induction, those ways at least aren't obviously available to the A-theorists. Although the pessimistic induction against A-theories and the pessimistic induction against scientific realism are similar in many ways, the epistemic problem as I articulate it is a *relatively* unique problem for the A-theories, which arises once we treat presentness as an objective feature of reality.

8 Is the Induction Admissible Evidence?

There is another way one might try to solve the problem of pessimistic induction. One might say that the pessimistic induction I rely on, if made explicit, is something like the following:

Premise 1. B_1 is false.

Premise 2. B_2 is false.

Premise 3. B_3 is false.

...

Conclusion. B_0 is false.

Now consider this question: Why do I think that my grandfather's belief that 1976 is the present is false? Because I believe that 2016 is present. Why do I think that, say, B_1 is false? Because I believe that this moment is present (i.e., that B_0 is *true*). So, the A-theorists might say, it seems that the only reason we have for accepting each of the premises in this inductive argument is that we *reject* the conclusion of this very argument. If we can only reasonably accept the premises of an argument by rejecting its conclusion, then of course we cannot accept that argument as evidence for the conclusion.¹²

This isn't a good response for two reasons. First of all, it isn't obvious to me that the pessimistic induction needs premises as specific as " B_1 is false". These premises are specific in the sense that each of them *names* a specific sample from the induction base (i.e., B_1, B_2, B_3, \dots). According to the received view, it's part of the quantum entities' metaphysical nature that they (e.g.,

¹² Presumably, the same can be said about the optimistic induction.

electrons) cannot be individually picked out and named.¹³ But, presumably, inductive reasoning about quantum entities is legit. Hence, an inductive argument shouldn't *need* premises that pick out specific samples from the induction base one by one. The pessimistic induction can do with a *nonspecific* premise that says that the absolute majority of $\{B_0, B_1, B_2, B_3, \dots\}$ are false. Accepting this nonspecific premise doesn't require the rejection or acceptance of B_0 beforehand.

Secondly, the response fails *even if* I grant that \langle Premise 1, Premise 2, Premise 3, ..., Conclusion \rangle is a proper way to flesh out the relevant pessimistic induction. Our A-theorist is right to point out that it's reasonable for us to accept those premises only if we reject the argument's conclusion (i.e., accepting that this moment is present). But that just means that *our* epistemic access to presentness *happens to be* such that it's reasonable for us to judge that a moment t is *not* present *only if* we have already accepted that another moment *is* present. There is nothing in the *concept* of objective presentness that rules out the possibility that an epistemic agent can tell that t is not present even though she has no idea which moment is. So, our A-theorist's remark basically amounts to the following: although there is a pessimistic induction \langle Premise 1, Premise 2, Premise 3, ..., Conclusion \rangle for the conclusion that this moment is not present, *our peculiar epistemic predicament* doesn't allow us to endorse that induction as *our* evidence for the claim that this moment isn't present. This doesn't help the A-theorists.

Suppose there is a mathematical proof for the theorem M . But I'm so mathematically incompetent that there is no way I can ever understand the proof. Nonetheless, I'm told by the relevant experts that such a proof exists. Although my epistemic predicament prevents me from accepting the proof as my evidence for M (for I cannot accept something that I don't understand), being justified in believing that there is a proof out there gives me justification for accepting M . The

¹³ E.g., see Lowe (1994); Pesic (2002); French & Krause (2006); Huggett (2010).

fact that one has evidence for the presence of evidence for p (i.e., higher-order evidence) implies that one has evidence for p .¹⁴

We have reason to think that there is a pessimistic inductive argument out there — I have just written it out <Premise 1, Premise 2, Premise 3, ..., Conclusion>! That is, we have evidence for thinking that there is a piece of evidence out there that supports Conclusion. That remains to be the case even though we happen to be in an epistemically unfortunate position that prevents us from taking this argument itself to be our evidence (analogous to the case about mathematical proof). Given that higher-order evidence entails evidence, even though our epistemic predicament prohibits us from endorsing the pessimistic induction itself as our evidence, we have evidence for believing that this moment isn't present simply in virtue of having evidence for thinking that there is such an inductive argument out there. So, our A-theorist's remark doesn't help.

8 Conclusion

It has been argued that the non-presentist A-theories' attempt to combine an objective presentness and a non-presentist ontology leads to an epistemic problem. I argue that the epistemic problem can be formulated in terms of a pessimistic induction, which renders temporal ontology irrelevant. I

¹⁴ This principle about higher-order evidence has been under much discussion. For defenders of the principle, see Feldman (2007), and Christensen (2010; 2013). For those who are against it, see Kelly (2005) and Fitelson (2012). Fitelson (2012) offered an alleged counter-example that challenges various *interpretations* of the principle. For the debate about Fitelson's counter-example and the subsequent attempts to formulate the principle in a more rigorous manner, see Feldman (2014), Roche (2014), and Tal & Comesana (2015). My impression is that the consensus is now leaning towards accepting the evidential value of higher-order evidence.

hence conclude that the epistemic problem is, in fact, a threat to the A-theoretic commitment to an objective presentness alone. And I've shown that the problem of the pessimistic induction is a hard problem by addressing two potential responses. Whereas Cameron tries to generalize the epistemic problem into a dialectically weak challenge for all A-theories in order to defend the non-presentist A-theories, I use the pessimistic induction to generalize the epistemic problem into a substantive threat to all A-theories. If we know that this moment is present, there is no objective presentness.¹⁵

¹⁵ This paper has benefited substantively from the feedback and advice from so many people. All I had was a vague hunch that something isn't right about how the epistemic problem has been handled. Discussion with so many patient and incredibly smart people over the past 4 years helped me put the idea on paper in its current shape. I'd like to thank Ross Cameron for introducing me to the philosophy of time in his incredible metaphysics of time graduate seminar in 2015. He taught me everything I know about philosophy of time. I owe Nick Rimell my deepest gratitude both for the numerous thought-provoking discussions on the topic while we were on the road together and for his generous help in going through my writing line by line to clean up my English. Besides Nick, Stacie Thyron also helped me with the language. I'm grateful to the audience of the OZWS Conference 2015 in Amsterdam, the Joint Meeting of North & South Carolina Philosophical Society 2016 in Boone, the Society of Exact Philosophy Annual Meeting 2016 in Miami, and the Philosophy of Time Society conference 2016 in Winston-Salem. I also want to thank Louis Doulas, who emailed me for a copy of the paper. I felt uncertain about the quality of the paper and had given up the paper for a while at that point. Louis's email prompted me to go back to work on the paper again. And finally, this paper is improved by the thoughtful comments and objections from the anonymous reviewers of this journal, and the reviewers of the other journals where earlier versions of this paper were submitted.

Reference

- Braddon-Mitchell, D. 2004. "How Do We Know It Is Now Now?" *Analysis* 64(3): 199-203.
- Cameron, R. 2015. *The Moving Spotlight*. OUP.
- Charkravartty, A. 1998. "Semirealism." *Studies in History and Philosophy of Science* 29: 391– 408.
- Christensen, D. 2013. "Epistemic Modesty Defended." In David Christensen and Jennifer Lackey (eds.), *The Epistemology of Disagreement: New Essays*. OUP: 77-97.
- . 2010. "Higher-Order Evidence." *Philosophy and Phenomenological Research* vol. LXXXI no. 1: 185-215.
- Feldman, R. 2014. "Evidence of evidence is evidence". In *The Ethics of Belief*, ed. John Mattheson and Rico Vitz: 284-99.
- . 2007. "Reasonable Religious Disagreement." In Louise Antony (ed.), *Philosophers Without Gods: Meditations on Atheism and the Secular*. OUP: 194-214.
- Fitelson, B. 2012. "Evidence of evidence is not (necessarily) evidence". *Analysis* Vol. 72, N.1: 85-88.
- Forrest, P. 2004. "The Real But Dead Past: A Reply to Braddon-Mitchell." *Analysis* 64(4): 358-362.
- French, E. & Krause, D. 2006. *Identity in Physics: A Historical, Philosophical, and Formal Analysis*. OUP.
- Hacking, I. 1982. "Experimentation and Scientific Realism". *Philosophical Topics* 13(1): 71-87.
- Heathwood, C. 2005. "The Real Price of the Dead Past: A Reply to Forrest and to Braddon-Mitchell." *Analysis* 65(3): 249-251.
- Huggett, N. 2010. *Everywhere and Everywhen*. OUP.
- Kelly, T. 2005. "The Epistemic Significance of Disagreement". *Oxford Studies in Epistemology*, vol. 1. OUP: 167-196.
- Ladyman, J. 1998. "What is Structural Realism?" *Studies in History and Philosophy of Science* 29: 409–424.
- Lange, M. 2002. "Baseball, Pessimistic Inductions, and the Turnover Fallacy". *Analysis* 62(4): 281-285.

- Lewis, P. 2001. "Why the Pessimistic Induction is a Fallacy". *Synthese* 129(3): 371-380.
- Lowe, E. J. 1994. "Vague Identity and Quantum Indeterminacy". *Analysis* 54: 110-14.
- Markosian, N. 2004. "A Defense of Presentism". In Zimmerman, D. (2004) (ed) *Oxford Studies in Metaphysics vol.1*: 47-82.
- Merricks, T. 2006. "Good-Bye Growing Block". *Oxford Studies in Metaphysics*, vol. 2. OUP.
- Miller, K. 2018. "The New Growing Block Theory vs. Presentism". *Inquiry: An Interdisciplinary Journal of Philosophy* 61(3): 223-251.
- Pesic, P. 2002. *Seeing Double: Shared Identities in Physics*. MIT Press.
- Psillos, S. 1999. *Scientific Realism: How Science Tracks Truth*. Routledge.
- Quine, W. V. O. 1951. "Ontology and Ideology". *Philosophical Studies* 2: 11–15.
- Roche, W. 2014. 'Evidence of evidence is evidence under screening-off'. In *Episteme* 11(1): 119-24.
- Russell, J. S. 2015. "Temporary Safety Hazards". *Nous*. doi:10.1111/nous.12104
- Saatsi, J. 2005. "On the Pessimistic Induction and Two Fallacies". *Philosophy of Science* 72(5): 1088-1098.
- Tal, E. & Comesana, J. 2015. "Evidence of evidence is evidence (trivially)". *Analysis* 75 (4): 557-559.
- Van Inwagen, P. 1986. *An Essay on Free Will*. OUP.
- Worrall, J. 1989. "Structural Realism: The Best of Both Worlds?" *Dialectica* 43: 99–124.