Why Critical Realists Ought to be Transcendental Idealists Guus Duindam

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1. Introduction

In *A Realist Theory of Science* Roy Bhaskar (1975) provides several transcendental arguments for critical realism – a position Bhaskar himself characterized as **transcendental realism** (1975, 25; 1998, 2, 5). The validity and success of these transcendental arguments have recently been the topic of a lively debate (*see, e.g.*, Kaidesoja 2017; McWherter 2015, 2013; Clarke 2010; Kaidesoja 2005). Bhaskar's concomitant critique of Kantian transcendental idealism has, in contrast, received less attention in the literature, perhaps because transcendental idealism is still frequently misconstrued as an antiquated and unviable philosophical position. Bhaskar's arguments stand or fall with the success of that critique, however; an evaluation of Bhaskar's transcendental realism must therefore also be an evaluation of his attack on Kant's transcendental idealism.

It is the primary aim of this paper to show that Bhaskar's transcendental arguments in favor of critical realism fail. According to Bhaskar, transcendental realism is a necessary condition for (i) the intelligibility of sense-perception, and (ii) the possibility of scientific experimentation. I discuss both arguments and contend that neither is successful. Transcendental realism is not necessary for either (i) or (ii), for transcendental *idealism* can account for both. Thus, transcendental realism is not, as Bhaskar claims, "the only theory at present known to us

that is consistent with [the possibility of science]" (Bhaskar 2008, 252). Bhaskar's own criticisms of transcendental idealism fail because they misrepresent the Kantian position.

In the first section of this paper, I will present briefly the Kantian position and provide some disambiguation that will assist the enquiry into the success of Bhaskar's transcendental realism. In the second, I will evaluate Bhaskar's transcendental arguments for critical realism, and argue that they misuse Kantian terminology and fail to provide a transcendental grounding for Bhaskar's philosophical position. I conclude that those who wish to defend the intelligibility of scientific practice and retain Bhaskar's rejection of laws as constant conjunctions ought to adopt transcendental idealism.

2. Transcendental Idealism

At the core of transcendental idealism lies the epistemological 'Copernican revolution': the idea that the proper objects of knowledge are in important ways *determined by* their knowers. For the purposes of this paper, the Kantian transcendental idealist upshot of this 'revolution' consists of two key components: (1) the claim that space and time are the forms of (human) intuition, (where 'intuition' is a technical term indicating the raw sensory data afforded us by our faculty of sensibility, *see* Kant 1998, A19/B33) and (2) the claim that there are *pure* concepts of the understanding (viz. the twelve Categories, amongst which is that of causation).

Take **common-sense scientific-realism** to be the position that the properties of the objects studied by science are wholly independent of human beings, and can be known as such. According to common-sense scientific-realism, we can know things 'as they really are inthemselves.' The key components of transcendental idealism as sketched above are clearly in opposition to this 'common-sense' view. If space and time are the forms of intuition, then

spatiotemporal properties of objects are not 'real' in the sense in which the common-sense view takes them to be 'real', that is, they do not exist independently of the human forms of intuition. Similarly, if causation is a *pure* concept of the understanding, then, contrary to the common-sense view, causal judgments are not derived exclusively from experience but rather instances of the understanding applying a-priori rules to a-posteriori intuitions.

On the common-sense view, then, the objects of knowledge are entirely mind-independent and entirely epistemically accessible. According to **straightforward** (Berkeleyan) **idealism**, in contrast, there are no objects of knowledge other than the objects of perception (hence Berkeley's adage, *esse est percipi*); the idealist denies that anything at all is mind-independent. Transcendental idealism is not idealist in this straightforward sense, for it does not deny that anything is mind-independent. Rather, it denies that we have epistemic access to mind-independent objects – things-in-themselves, or noumena. For to have such access would be to transcend the conditions of our own cognitive faculties – to erase the distinction between the knower and the objects of knowledge. This mystical feat is evidently one of which we are incapable. If there are any conditions on human cognition, they must influence what the proper objects of human knowledge are.

If the only mind-independent objects are the noumena, the objects of human knowledge are phenomena. There is some disagreement among Kant's interpreters on what the precise relationship between noumena and phenomena is. According to two-world (or two-object) interpretations, noumena and phenomena are metaphysically distinct classes of objects, and only the former are epistemically accessible (*see*, *e.g.*, Guyer 1987). According to two-aspect interpretations of Kant, the phenomena *are* the noumena *given* the conditions of human cognition (for a convincing defense of this view, *see* Alisson 2004). Thus on the two-aspect view,

phenomena are not metaphysically distinct from noumena, but rather the way in which the noumena appear to human beings. I take the two-world view to be both independently implausible and inaccurate as a matter of interpretation. The two-world view requires an unnecessarily complicated dualist ontology and leaves entirely unclear how the noumenal underlies the phenomenal (*see also* Kaidesoja 2005, 34). It is, however, not necessary to resolve this debate here; having flagged the dispute, I will assume the two-aspect view for the remainder of this paper. If Bhaskar's arguments succeed in rebutting the independently more plausible two-aspect view of transcendental idealism, then they will have succeeded *a fortiori* in rebutting the two-world view. Conversely, if they fail to rebut the two-aspect view, they must fail as transcendental arguments for their conclusion.

On a rather rough analogy, I take the possible objects of scientific inquiry – and human knowledge generally – to be the noumena seen through 'human' glasses, i.e., through glasses which impose space and time upon the objects of experience. Phenomena are not mindindependent, for some of their properties are derived from human cognition rather than observed in experience. But this is not to say that we cannot come to know them, or that they are not real – to the contrary, they are the only things which we can come to know, and the closest we can get to the 'out-there' reality craved by the common-sense view.

A final point of disambiguation. To say that some property is **transcendentally real** is to say that it exists independently of the conditions on human cognition: for transcendental idealists, such properties are unknowable. Something is transcendentally real if and only if it is entirely mind-independent. Since, according to the Kantian, the conditions on human condition affect *all* our observations, we cannot ever come to know the transcendentally real: what we observe is always to some extent mind-dependent. To say that some property is **empirically real**, in

contrast, is to say that it is real *given* the conditions on human cognition, thus, for the Kantian, all the properties studied by science (and knowable through perception) are empirically real. Hence Kant's claim that space and time are transcendentally ideal but empirically real (Kant 1998, B44/A28). They are not mind-independent (thus, they are transcendentally ideal) but derive from the conditions on human condition (thus, they are empirically real). Since phenomena are not separate objects, but rather the noumena as knowable to us given the conditions on our cognitive faculties, it is more consistent with transcendental idealism to speak of transcendentally real and ideal properties than objects. Following Bhaskar, I will use both locutions in the remainder of the paper, but it should be clear that to predicate "empirically real" of an *object* is merely to say that *some of its properties* (e.g. its spatiotemporality) are mind-dependent.

The Kantian position entails important revisions to common-sense versions of scientific-realism. But without downplaying their importance, it is worthwhile to note that it does not directly entail *methodological* revisionism. Accepting the Copernican revolution in epistemology does not require one to reject current scientific practices; indeed, Kantian transcendental idealism defends such practices from the Humean skeptic. Kantian transcendental idealism is essentially a *vindicatory* account of the claims of science.

3. Bhaskar's Transcendental Arguments

Bhaskar distinguishes between *intransitive* and *transitive* objects, the former being objects of knowledge which do not depend on human activity, while the latter are "the artificial objects fashioned into items of knowledge by the science of the day," and thus dependent on human activity (Bhaskar 1975, 21). The central aim of *A Realist Theory of Science* is to establish the existence and structured nature of intransitive objects by transcendental argument.

Some argument is transcendental insofar as it establishes its conclusion, y, by showing that it is *necessarily presupposed* by an undisputed claim, x. If successful, such an argument shows that if one accepts x, one must also accept y. Thus, a transcendental argument claims that its conclusion is the only possible way to account for the commonly accepted phenomenon which it takes as its premise. Now Bhaskar argues that the existence of an intransitive, structured reality (y) is necessary, given the occurrence of perception and scientific experimentation (x). In other words, Bhaskar claims that the *transcendental* reality of the objects of knowledge is the only way to account for the very possibility of perception and experimentation. That he means to defend the *transcendental* reality of the objects of knowledge is explicitly confirmed in *The Possibility of Naturalism* (1998,6).

It should be noted that in the postscript to the second edition of *A Realist Theory of Science*, Bhaskar concedes that transcendental arguments are fallible, and argues that his arguments provide the only *known* explanation of the intelligibility of scientific practice, rather than the only *possible* one (Bhaskar 2008, 252). For the purposes of this paper, the distinction between the apodictic necessity suggested in Bhaskar's earliest formulations and the weakened necessity of his later works is irrelevant. After all, I maintain that Bhaskar fails to rebut transcendental idealism. If true, that means the arguments fail to establish both that critical realism is the only currently known explanation of the intelligibility of science, and *a fortiori* that it is the only *possible* explanation.

3.1 The Argument from Perception

In his analysis of perception, Bhaskar provides his first transcendental argument for realism with respect to intransitive objects. It has roughly the following form: multiple agents can, at the same time, perceive the same object in different ways (x). This could be possible only given the

mind-independence of the object (*y*). Therefore, given the occurrence of differential perception, the objects of perception must be transcendentally real.

It is not clear whether Bhaskar's argument is aimed to explain merely the intelligibility of changing experience in science, the intelligibility of changing experience in general, or even the intelligibility of perception *simpliciter*. For instance, he claims that:

The *intelligibility of sense-perception* presupposes the intransitivity of the object perceived. For it is in the independent occurrence or existence of such objects that the meaning of 'perception', and the epistemic significance of *perception*, lies [emphases mine] (Bhaskar 1975, 31).

But continues:

[B]oth the *possibility of scientific change* (or criticism) and the necessity for a scientific training presuppose the intransitivity of some real objects; which, for the empirical realist at least, can only be objects of perception. If *changing experience of objects* is to be possible, objects must have a distinct being in space and time from the experience of which they are the objects. For Kepler to see the rim of the earth drop away, while Tycho Brahe watches the sun rise, we must suppose that there is something they both see... [emphases mine] (31).

I will take Bhaskar's argument to involve the weaker claim: that differential experience by different scientists necessarily presupposes the intransitive nature of the object perceived. If the argument from perception fails to ground that claim, we know *a fortiori* that it fails to ground either of the stronger conclusions.

As we have seen, Kant and Bhaskar agree that some intransitive objects exist but disagree on what these objects are and whether they are knowable. Bhaskar's transcendental argument, if it is to succeed, must establish not merely that *some intransitive object* exists – for this his Kantian opponent readily grants in the form of the noumenon. Rather, it must show that the objects of perception are intransitive objects, i.e. that the objects of perception are transcendentally real. It does not show this, however. Brahe and Kepler, being human, both view the sun from the human perspective – in other words, they impose space and time upon the manifold of their intuitions. There is nothing puzzling about changing experience of empirically real objects by multiple human agents. For these agents *share* space and time as the forms of their intuition – and they interact with the same mind-independent reality. The transcendental reality of the same objects, far from being presupposed, is therefore an unwarranted assumption.

To be clear, there *is*, for the Kantian, something which Brahe and Kepler both see: they both see the sun. The sun, like all other objects of perception, is empirically real. By calling it intransitive, Bhaskar assumes the sun is also transcendentally real – i.e. that Bhrahe and Kepler see the sun 'as it is in-itself' – but his argument does nothing to establish this. It therefore fails as an argument for transcendental realism.

3.2 The Argument from Experimentation

A more detailed argument, situated at the heart of the critical realist endeavor, is presented in Bhaskar's analysis of experimental activity. For Bhaskar, there are "two essential functions" involved in an experiment:

First, [the experimental scientist] must trigger the mechanism under study to ensure that it is active; and secondly he must prevent any interference with the operation of the

mechanism. [...] Both involve changing or being prepared to change the 'course of nature', i.e. the sequence of events that would otherwise have occurred. [...] Only if the mechanism is active and the system in which it operates is closed can scientists in general record a unique relationship between the antecedent and consequent of a lawlike statement (Bhaskar 1975, 53).

Several conclusions are drawn from this description of experimentation. First, the experimenter sets in motion a sequence of events in order to discover an underlying causal mechanism. The experimenter, who sets up a causally closed system, is thereby causally responsible for a constant conjunction of events, but not for the underlying causal mechanism. Therefore, *contra* Humean accounts of law, there must be an ontological distinction between the constant conjunction and the causal mechanism.

For Bhaskar, the intelligibility of experimental activity thus characterized can also be used to transcendentally establish the reality of intransitive objects. "As a piece of philosophy," he claims "we can say (given that science occurs) that some real things and generative mechanisms must exist (and act)," where by 'real' Bhaskar means 'intransitive' (1975, 52), a conclusion he reiterates in later works (*e.g.*, 1998, 6). Stephen Clarke (2010, 302) provides the following gloss on the argument:

Premise 1: Scientific explanatory practice (in particular the practice of exporting explanations from laboratory circumstances to general circumstances) is experienced by us as intelligible.

Premise 2: Scientific explanatory practice could not be experienced by us as intelligible unless causal powers exist and those causal powers are governed by universal laws of nature.

Conclusion: causal powers exist and are governed by universal laws of nature.

This formalization of the argument is helpful but partly inaccurate: Bhaskar does not think causal powers are governed by universal laws of nature. To the contrary, he argues that universal laws are ontologically grounded in causal powers, which, as McWherter (2012, 210) points out, are themselves the "transcendentally real tendencies of generative mechanisms." So the argument can be better formalized as follows:

Premise 1: Scientific explanatory practice (in particular the practice of exporting explanations from laboratory circumstances to general circumstances) is experienced by us as intelligible.

Premise 2*: Scientific explanatory practice could not be experienced by us as intelligible unless causal powers exist as the transcendentally real tendencies of generative mechanisms.

Conclusion*: causal powers exist and are the transcendentally real tendencies of generative mechanisms.

Now it is clear that this is an argument against Humean empirical realism, and I find McWherter's (2012) defense of the argument as an attack on that view quite convincing. But it is telling that Clarke, in his analysis, calls it an "attack on idealism" (2010, 303) while Bhaskar explicitly characterizes his arguments as an attack on "transcendental idealism" (1975, 27). For it is entirely unclear how it works as an attack on the latter, Kantian view.

As we have seen, Bhaskar maintains that the aim of experimentation is to discover real generative mechanisms. To suppose that the causal mechanism discovered in a replicable scientific experiment generalizes to open causal systems is to suppose that the same laws operate in open causal systems, even if they are there sometimes obscured by other generative mechanisms. And to suppose that generative causal mechanisms operate in closed and open causal systems alike *just is* to presuppose that all experience is ordered. In short, the ordered nature of experience is a necessary presupposition for experimentation.

Now what does it mean for experience to be ordered? For the transcendental idealist, it means that certain truths about all possible experience are knowable a-priori. If space and time are imposed in cognitive activity, it is an a-priori, apodictic necessity that all possible experience will be spatiotemporally ordered. Similarly, if there are synthetic a-priori scientific truths, then it is apodictically necessary that all experience will conform to them. For the transcendental realist, in contrast, it means that generative mechanisms are both epistemically accessible and entirely mind-independent. On that view, it is necessary that experience will be ordered because the world as it is in-itself is ordered, and our experience gives us epistemic access to that order.

There are thus at least two ways in which experience could have the order which Bhaskar deems necessary for the intelligibility of experimentation: because order is imposed on it in cognitive activity, or because the order is intransitive, i.e., mind-independent. Bhaskar supposes the former – order imposed by cognitive activity – would render experimentation superfluous (*see also* Clarke 2010, 303). This is a flummoxing claim to make. Surely Bhaskar does not mean to accuse the transcendental idealist of the view that the projection of order onto the world is somehow a *conscious* cognitive activity – that we *already know* all the synthetic a-priori scientific truths there are to know. In that case experimentation would indeed be superfluous, but

so far as I know this view has not been defended by anyone. For the transcendental idealist, science is as much a process of gradual discovery as it is for everyone else.

It may be that confusion arises from the fact that for Kantians genuinely universal scientific laws must be synthetic a-priori. Perhaps Bhaskar supposes that if what it is to posit a universal scientific law is to make a claim to synthetic a-priori knowledge, then we should be able to derive the laws of nature by a-priori deduction, rendering experimentation superfluous. But this would again be to misunderstand transcendental idealism. Suppose that because my perceptions of sparks and wood are frequently followed by perceptions of conflagration, I come to associate sparks and wood with fire. I can now ask the question whether this association is a subjective or an objective one. To claim that it is an objective one is, for the Kantian, to apply one of the Categories. For instance, what it means to take my association of sparks and dry wood with fire to be objective is to make a claim like "sparks and wood cause fire," applying the Category of causation. This claim is a-priori insofar as it involves the application of an a-priori (pure) concept, a-posteriori insofar as it is *about* the objects of experience. It is a claim which I am *entitled* to make (what Kant calls the *quid juris*), but that entitlement leaves open the empirical question whether my judgment is true (the quid facti) (Kant 1998, A84/B117-A86/B118). Experimentation with sparks and wood may lead me to modify my claim. For instance, I may discover that sparks and wet wood do not jointly give rise to fire, and adjust my claim to "sparks and dry wood cause fire." Further experimentation may lead me to draw additional conclusions. I could not have deduced any of these conclusions about sparks and

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¹ Compare this to the Humaan view, on which we are never even entitled to claim that some x caused y.

wood a-priori. The mere fact that, for the Kantian, scientific claims have an a-priori component does not render experimentation either superfluous or unintelligible.²

Bhaskar's odd claims about the consequences of transcendental idealism for scientific experimentation become more comprehensible when we discover that he supposes that, for the Kantian, causal mechanisms are mere "figment[s] of the imagination" (Bhaskar 1975, 45). If this were true, it would provide an independent argument against the intelligibility of experimentation on a transcendentally idealist account. But, as should by now be clear, this is an incorrect characterization of the Kantian doctrine. It is only for skeptics and solipsistic idealists that causal mechanisms are figments of the imagination. The disagreement between Kantians and transcendental realists on causal mechanisms is not about whether they exist, but rather about whether they operate at the empirical or transcendental level.

Bhaskar frequently conflates transcendental and straightforward idealism, while his target is explicitly the former. He maintains that the transcendental reality of objects (viz., their intransitivity) is a necessary condition for differential perception and scientific experimentation, but, as we have seen, the arguments he provides establish at most the empirical reality of such objects.

4. Why Critical Realists Ought to Be Transcendental Idealists

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² My example of scientific "experimentation" on the Kantian framework here is deliberately basic. My aim here is merely to show that Bhaskar's arguments rest on a misunderstanding of transcendental idealism, not to provide an independent account of the nature of experimentation under transcendental idealism. For an example of a Kantian treatment of experimentation and empirical laws, see (McNulty 2015). For an account involving unobservable entities, see also (Palmquist 2013).

Bhaskar's aim, he repeatedly emphasizes, is to answer "the transcendental question 'what must the world be like for science to be possible" (1975, 23). He argues that transcendental realism is necessary for the intelligibility of scientific practice, but, as we have seen, his arguments for this position fail. Given their theoretical commitments in the philosophy of science, critical realists ought not be transcendental realists. Instead, I submit, they ought to adopt transcendental idealism.

Let us attempt to answer Bhaskar's transcendental question given the central claims of critical realism. First, critical realism defends the existence of universal natural laws (Bhaskar 1975, 34; Elder-Vass 2010). Second, it rejects the (neo-)Humean characterization of such laws as constant conjunction – it denies that constant conjunction is either a necessary or a sufficient condition for lawhood (Bhaskar 1975, 1998, 10; Elder-Vass 2004, 7). Third, it rejects solipsism and characterizes scientific experimentation as both intelligible and justified (Bhaskar 1975, 26–27, 1998, 8). If critical realism is to remain a plausible alternative to neo-positivist philosophies of science, these claims must be vindicated. But, as I have tried to show, Bhaskar's arguments cannot do so. Therefore, the critical realist needs another vindication of her key theoretical commitments; Kantian transcendental idealism can provide such a vindication.

We have seen that experimental activity, as necessarily involving the export of explanations from closed and controlled causal environments to open and uncontrolled causal environments, must presuppose that the objects of experience are ordered. The presumption of this order is crucial to Bhaskar's arguments for transcendental realism, and against transcendental idealism. Recall that the universal order required for the assumption of the critical realist's *universal* laws of nature can be either transcendentally realist or transcendentally idealist in nature. For the

transcendental idealist, we are justified in supposing that our experiences will be ordered, because (a spatiotemporal) order is imposed on them by our cognitive faculties.

Assume for the moment the truth of transcendental idealism. A big assumption, to be sure, but no more problematic than the transcendental realism Bhaskar advocated. After all, the transcendental arguments for the latter view fail, while the transcendental idealist view remains grounded in important Kantian arguments – e.g., according to Kant, it explains the possibility of synthetic a-priori knowledge, is a necessary condition for sense-perception (Kant 1998, A19/B33-A49/B73), and denying it would result in self-contradiction (viz., the antinomy of pure reason) (Kant 1998, A426/B454-A462/B490). Can the Kantian vindicate the assumptions of the critical realist?

Clearly, transcendental idealism can vindicate the assumption that there exist universal laws. For if space and time are the forms of intuition, then there are no observations that are not spatiotemporally ordered; thus, synthetic a-priori knowledge about the nature of space and time will necessarily be applicable to all the objects of perception. What is more, the putative synthetic a-priori truth 'all events have causes' is importantly presupposed by much of scientific practice and vindicated by the Kantian framework.

Transcendental idealism maintains synthetic a-priori knowledge exists in the realm of science and it provides an account of how such knowledge could be justified.³ It is therefore a vindicatory account of the universal laws of nature to which critical realists are committed. We have further seen that transcendental idealism shares the critical realist's rejection of solipsism,

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³ Indeed, in the *Critique of the Power of Judgment*, Kant provides several arguments for supposing experience is not only transcendentally, but also empirically ordered. For instance, in the introductions he claims that we must suppose the *systematizability* of nature (2000, 3–83).

and that (in contrast to Humean empiricism) it accepts scientific experimentation as intelligible and justified. So, while the critical realist cannot rely on Bhaskar's transcendental realism, she can by accepting Kantian transcendental *idealism* retain all her theoretical commitments. A Kantian critical idealism is therefore the logical choice for a consistent alternative to neo-Humean positivism.

5. So What? Methodology and the Transcendental Question

Let's take stock. Bhaskar's arguments for transcendental realism fail. I have argued that critical realists ought instead to adopt transcendental idealism, thus enabling a continued commitment to their primary theoretical aims. "So what?" the reader may well wonder. What, if anything, does this highfalutin transcendental debate have to do with the actual enterprise of science?

This concern is entirely justified: I think that transcendental philosophy in the end has only limited methodological implications. There is of course one crucial exception. Our conception of the nature and existence of universal laws of nature stands and falls with our answer to the transcendental question: (how) is synthetic a-priori knowledge possible? If, with Kant, we suppose that transcendental idealism makes such knowledge possible, we have grounds for an anti-Humean, anti-positivist, account of universal laws. Otherwise, we must content ourselves with 'laws' as constant conjunctions. This purely philosophical decision thus has some clear methodological consequences — as Bhaskar himself points out, a constant-conjunction model of laws cannot vindicate explanatory export from closed to open causal systems. Beyond this, however, the methodological importance of transcendental epistemology and ontology for the sciences is limited. And, I should note, this is a theoretical *virtue*, for the Kantian aim is to vindicate scientific practice, not rewrite its rules.

Practical questions which critical realists sometimes relate to Bhaskar's transcendentalism are in fact often answerable independent of transcendental philosophy. For instance, casting the debate about the ontology of the social world in a transcendental mold (as in, *e.g.*, Bhaskar 1998) is misleading and unproductive. When we ask whether social groups and institutions have an independent ontological status, we ask a question that is unrelated to transcendental philosophy. The debate is *not* about whether social groups are transcendentally or empirically real. Rather, we ask whether social groups have an *empirical* reality over and above their individual members. To answer this question, we do not need to consider whether the building blocks of empirical reality are themselves intransitive or dependent on human cognition. Whether social structures have an ontological status distinct from the individuals who make them up is answerable entirely at the level of the empirically real.

Appeals to intransitive or transcendental objects in such debates miss their point because the answer we give to the transcendental question – whether the objects of experience are independent of humanity – will not change the answer to scientific questions about the *relationships between* the objects of our experience.

Science asks questions about the nature of the world and the relationships between the objects of possible human experience. *Transcendental philosophy* instead asks what kinds of knowledge-claims we are entitled to make. For every question of empirical truth there is a concomitant question of epistemic entitlement. Both are crucially important endeavors, but we should take care not to confuse one with the other.

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