TRUMPING NATURALISM REVISITED

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Abstract. Whenever science returns a confident and univocal answer to a question, Trumping Naturalism enjoins us to accept it. The majority of contemporary philosophers are sympathetic to this sort of position. Indeed, several have endorsed it or something very close to it. Arguments for Trumping Naturalism, however, are scant, the principal one being the Track Record Argument. The argument is based on the fact that in cases of conflict, science has a better track record than non-scientific forms of inquiry such as philosophy. My chapter investigates this argument. I enumerate and assess several objections to the argument, from footling objections to stronger ones. My conclusion is that the Track Record Argument is not as strong as imagined.

Prologue

It is as much a pleasure as an honour to contribute to a Festschrift for Penelope Maddy. Her work's influence on my thinking in the philosophy of mathematics, as well as my conception of how it is best done, is immeasurable. Upon encountering *Naturalism in Mathematics* as a tyro graduate student, I felt compelled to work on 'Maddian themes' in general and on naturalism in particular. The present chapter is in this vein, even if it shies away from forging explicit connections with Maddy's more recent 'second philosophy', mainly for reasons of space. It is, however, un-Maddian in its willingness to try to pin down the precise content of naturalism; to assess the grounds for it when thus made precise; and in its negative conclusion. But it is inspired by Maddy's work, informed by it and more generally indebted to it at every turn.

1. Beyond the Platitude

Science is, generally speaking, more credible than other forms of inquiry. Though the expression is a little crude, the sentiment is widely shared. Champions of a naturalist trend in philosophy go further, by advocating[1]

[1] The word 'trumping' expresses the idea very clearly and accords with the terminology in Paseau (2008), which predates Donald Trump's political rise. I am loath to change it for these reasons, and because hopefully this essay will be read after Trump's political demise.

Trumping Naturalism (TN)

If science endorses *p* then one should believe *p*

We illustrate TN with an example. Take the statement that life on Earth arose about 3.7 billion years ago, which is supported by well-confirmed scientific techniques (carbon dating, analysis of the fossil record, etc.) and theories (geology, evolutionary theory, etc.). Despite its scientific backing, biblical literalists might disbelieve it. They might shrug off the scientific evidence and argue that we have no more reason to believe that life on Earth emerged billions of years ago than that it emerged a few millennia ago with the deceptive appearance of pre-existence. As the naturalist Philip Gosse put it, in an attempt to reconcile 19th-century advances in geology with the Bible, we might read the evidential record in a way that 'disturbs the conclusions of geologists respecting the antiquity of the earth'.[2] According to TN, the biblical account cannot cast doubt on the existing scientific consensus; it must yield to it.

In the past thirty-odd years, philosophers have endorsed TN or something like it in droves.[3] Yet arguments for TN are thin on the ground, notwithstanding the generally

[2] Gosse (1857, p. iii). See also the more recent 'scientific creationist' movement typified by Henry Madison Morris.

[3] John Burgess and Gideon Rosen write: 'The naturalists' commitment is…to the comparatively modest proposition that when science speaks with a firm and unified voice, the philosopher is either obliged to accept its conclusions or to offer what are recognizably scientific reasons for resisting them' (1997, p. 65). Many other philosophers have backed TN, and several more have endorsed versions of it for conflicts between philosophy and disciplines other than science. In particular, Mark Colyvan (2001, p. 13), Penelope Maddy (1997, p. 161), John Burgess (2004), Thomas Hofweber (2009, p. 263), Jonathan Schaffer (2009, p. 537 n.8) and Kit Fine (2009, p. 158) all endorse or are very sympathetic to the trumping claim that philosophy cannot overturn mathematics. Michael Blome-Tillmann (2009, p. 307) believes that philosophy cannot overrule linguistics, as do many others (see the references in Daly & Liggins 2011, p. 333). Many others draw conclusions along similar lines, e.g. Ladyman & Ross (2007, p. 16). The trend of the past few decades has deeper roots, some of the more proximate ones being Quine's naturalism (1981, p. 21), or the view that the philosophy of science should be descriptive rather than prescriptive (e.g. Holton 1988). Prior to his later denunciation of naturalism (1983), Putnam endorsed TN (1971, p. 356). Critical discussions of Trumping Naturalism and related versions which inform this chapter include my (2005) & (2008) as well as Daly & Liggins (2011).

acknowledged need for naturalism in its various guises to justify itself.[4] The principal argument for TN is based on disciplinary track records. In a nutshell, the argument is that recent science has been very successful whereas, time and again, philosophy and other non-scientific disciplines have failed. And in cases of conflict, science has a better track record than other forms of inquiry. This argument can be regimented into premise-conclusion form, as follows: Science has an excellent (recent) track record; non-science has a much inferior track record; so: TN.

There is a much-quoted passage in which David Lewis sets outs his credo and articulates the Track Record Argument. I shall quote it once more, in full, the better to engage with Lewis's individual examples later.

> Mathematics is an established, going concern. Philosophy is as shaky as can be. To reject mathematics for philosophical reasons would be absurd. If we philosophers are sorely puzzled by the classes that constitute mathematical reality, that's our problem. We shouldn't expect mathematics to go away to make our life easier. Even if we reject mathematics gently—explaining how it can be a most useful fiction, 'good without being true'—we still reject it, and that's still absurd. Even if we hold onto some mutilated fragments of mathematics that can be reconstructed without classes, if we reject the bulk of mathematics, that's still absurd.
>
> That's not an argument, I know. Rather, I'm moved to laughter at the thought of how *presumptuous* it would be to reject mathematics for philosophical reasons. How would *you* like the job of telling the mathematicians that they must change their ways, and abjure countless errors, now that *philosophy* has discovered that there are no classes? Can you tell them, with a straight face, to follow philosophical argument wherever it may lead? If they challenge your credentials, will you boast of philosophy's other great discoveries: that motion is impossible, that a Being than which no greater can be conceived cannot be conceived not to exist, that it is unthinkable that anything exists outside the mind, that time is unreal, that no theory has ever been made at all probable by evidence (but on the other hand that an empirically ideal theory cannot possibly be false), that it is a wide-open scientific question whether anyone has ever believed anything, and so on, and on, *ad nauseam*? Not me! (Lewis 1991 pp. 58–9).

Evidently, Lewis is aiming for comic effect here, and achieves it. He denied his examples the status of an argument, but that was a rhetorical ploy, since in the book the passage is

[4] For which, see for example my (2008) or Rosenberg (2012, pp. 248–9).

from (*Parts of Classes*), he put them to use to rule out a structuralist interpretation of set theory which, as he saw it, clashes with mathematics. In our terminology, the examples are used to justify TN.[5]

The Track Record Argument seems to offer a direct and convincing route to TN. In this chapter, a sequel to my (2005), I shall argue that it is not quite as powerful as it might initially seem. The conclusion I reach is very similar to my earlier one, but my reasons this time are slightly different.

2. Preliminaries

The term of art 'science endorses *p*' stands in need of clarification. One could read it as the claim that *p* follows from some core tenets of a particular science via a scientifically acceptable process of inference (which could include deduction, induction and abduction).[6] This is a helpful first-pass elucidation, though it needs to be further sharpened. Since conceptual analysis is not our game here, we can rest content with an understanding of 'science endorses *p*' at a fairly intuitive level along these lines. It is important to appreciate, however, that (a) science could endorse *p* even if scientists do not personally believe *p*, e.g. if *p* is a consequence of an established scientific theory that scientists happen not to have considered; (b) science might endorse *p* even if scientists wrongly disbelieve *p* on scientific grounds, e.g. they have misjudged the balance of scientific evidence; (c) science might not endorse *p* even if all scientists believe *p*, e.g. all scientists might happen to believe that chocolate ice cream is tastier than vanilla or that God exists, but believe neither *qua* scientists; and (d) scientific confirmation comes in degrees, and endorsement implies a relatively high degree of confirmation. As an illustration of the last point, TN enjoins us to accept the core tenets of evolutionary theory, which are fairly settled, but has no implications for unsettled questions such as those fought over by phyletic gradualists and punctuated equilibrium theorists.

[5] A similar argument is offered in Burgess (2004, p. 13). Along the same lines, Vargas (2009, p. 145) writes: 'armchair philosophical speculation about the construction of the brain has an uninspiring track record'. See also Ladyman & Ross (2007, p. 16).
[6] As suggested to me by Tushar Menon.

We may construe 'science' as including the traditional natural sciences: physics, chemistry, biology. A broader definition that includes, say, the established behavioural and social sciences, is possible, but would not significantly alter what follows. Since the argument is from apparent epistemic authority, we should also build mathematics into the definition of science. Mathematics is akin to the natural sciences in its manifest epistemic authority, even if its apparent ontology is different from that of the natural sciences. Indeed, mathematics plausibly has the most successful track record of all forms of inquiry. For this reason, most Trumping Naturalists (see fn. 3) count mathematics as a trumping discipline.

For the purposes of assessing the argument, we must assume that a boundary exists between science and non-science along the lines just given, even if it's fuzzy.[7] Our aim is to offer an 'internal' critique of the argument, which takes this distinction as given. This is not to close off the possibility of a critique that challenges the distinction's very existence. At any rate, the conventional line is that a clear distinction between science and non-science exists and that it emerged during the Scientific Revolution. This period stretches roughly from the mid-16th century to the late 17th century. Some historians of science play down the significance of the Scientific Revolution—and write books beginning 'There was no such thing as the Scientific Revolution, and this is a book about it'[8]—but it is the historian's stock in trade to emphasise continuities. Rhetoric aside, it is usually thought that a significant, albeit gradual, change in the way natural science was practised took place during this period, which set it off more sharply from other areas of

[7] Burgess & Rosen (1997, p. 206) have claimed that there is a simple operational test for whether something is a scientific argument or a scientifically acceptable theory. They urge that a 'true test' would be to submit the theory to a scientific journal and see whether it is accepted and well-received by the scientific community. Elsewhere, I have criticised this proposal for being simplistic (2007, pp. 138–40). More promising would be a mildly idealised version of the test that prescinds from editorial limitations, editors' and readers' preconceptions about the kinds of discussions appropriate to journals, and so on.

[8] Shapin (1996, p. 1).

inquiry.[9] This is not to deny the monumental achievements of earlier times.[10] But even on such views, experimentation in its most mature form—'constructing artificial physical situations for the purpose of making specific observations and measurements' (Rovelli 2011, p. 35)—had to wait until much later. In any case, the later we date the birth of science in the strict sense, the stronger the Track Record Argument. Going along with the conventional 17th-century demarcation gives the argument its most charitable reading.

To be a Trumping Naturalist, must you explicitly express your allegiance to TN? No. If in practice you always side with the scientific consensus against an appeal to non-science when the two clash, you are *ipso facto* a Trumping Naturalist—irrespective of whether you embrace or disavow the label, accept or reject the science/non-science distinction, think that scientific standards are set in stone or instead evolve over time, are explicitly guided by TN or not, and so on. A Trumping Naturalist, in my book, is anyone who always judges in conformity with TN, whether they realise it or not, whether they avow it or not, whether it corresponds to their self-image or not, etc.

TN is plausibly an acceptable injunction only for someone with an antecedent desire to acquire many true beliefs even at the expense of acquiring a good number of false beliefs. To give the Track Record Argument a charitable hearing, we have to assume something like this background attitude. The reason is that current science surely furnishes us with a sizeable number of false claims, at least some of which are not even

[9] Not coincidentally, it is to the thinkers who inaugurated this period—Francis Bacon, William Gilbert, Galileo and others—that we owe the scientific method's first proper articulation, and its definitive divorce from teleology and natural theology. Of course, many branches of science date the beginning of their 'modern era' to later than the 17th century. 'Modern' chemistry is marked by the passage from phlogiston theories to Lavoisier's theories of reduction and oxidation. The publication of Darwin's *On the Origin of Species* in 1859 irreversibly detached biology from philosophy and theology. The beginning of truly 'modern' biology is often dated, with remarkable precision, to the 25th of April 1953, the day on which the famous trio of publications on the structure of DNA (by Crick and Watson, Wilkins, and Franklin) appeared in *Nature*.

[10] For example, that of Alexandrian science and its practitioners such as Ptolemy (2nd century AD) and Hipparchus (2nd century BC). There is an argument to be had about whether some of these ancient Greek philosophers and mathematicians were scientists *sensu stricto*. Perhaps Anaximander, who flourished in the first half of the 6th century BC, was the first scientist (see Rovelli 2011 for an assessment); or perhaps science was born during the Hellenistic period, in about 300 BC (Russo 2004).

approximately true. As a result, TN would be unacceptable to anyone with a Cartesian terror of false beliefs.

I use the term of art 'norm' to mean a principle of scientific method, that is, an epistemic norm guiding or accurately describing belief-formation. Scientific norms are the norms currently underlying theory choice in the natural sciences.[11] For the sake of simplicity, we may assume that some norms operate throughout science.[12] The paradigm of a scientific norm is empirical adequacy, i.e. agreement with empirical data.[13] Some form of the principle of simplicity, which in its most general version states that the simpler of two theories enjoys a theoretical advantage over the less simple one (in this respect), is also a scientific norm.[14] But not all epistemic norms are scientific; those stemming from religion, for example, tend to be non-scientific. Thus, compatibility with the sayings of some sacred person or text is not a scientific norm, nor is consistency with non-reproducible religious experience, and nor is consistency with various creeds and confessions of faith. Some philosophers also espouse norms that are neither scientific nor religious. In their 1947 manifesto, for instance, Nelson Goodman and W.V.O. Quine famously declared that nominalism is founded on a 'philosophical intuition' irreducible to scientific grounds.[15] The human sciences, it has been argued, also rely on different

[11] Feyerabend (1975) is one of the few to deny the stable existence of such norms. Even while registering important caveats, Kuhn does not dispute that 'accuracy, consistency, scope, simplicity, and fruitfulness…are all standard criteria for evaluating the adequacy of a theory' (1977, p. 322). How much leeway the scientific method allows in interpreting or weighting such norms remains a vexed question.

[12] If not, the Track Record Argument fragments into, say, the Track Record Argument from Physics, the Track Record Argument from Biology, etc.

[13] In practice, of course, most actual theories fail to mesh with all the empirical data: they contain 'anomalies', even from their inception. 'All theories, in this sense, are born refuted and die refuted', wrote Lakatos, because they contain 'unsolved problems' and 'undigested anomalies' (1978, p. 5). The better confirmed the theory, the fewer these anomalies and the easier they are to explain away.

[14] For Newton's attachment to the principle of simplicity, see the first of the *Regulae Philosophandi* in the third edition of his *Principia*. Paul Dirac later put it even more strongly: 'A theory that has some mathematical beauty is more likely to be correct than an ugly one that gives a detailed fit to some experiments' (cited in Holton 1988, p. 15).

[15] 'We do not believe in abstract entities…We renounce them altogether…Fundamentally this refusal is based on a philosophical intuition that cannot be justified by appeal to anything more ultimate' (Goodman & Quine 1947, p. 105). Goodman and Quine added

epistemic norms from the natural sciences: to make sense of other people, one must rely on *Verstehen*, a capacity to understand others from within. If that is right, these sciences are normatively different from the science of leptons or leptides or lepidoptera.

Scientific norms are a subset of all epistemic norms. So if they are a proper subset of all such norms, there is potential for divergence: scientific norms may endorse *p* yet other norms might endorse ¬*p*. In the hands of philosophers, the Track Record Argument typically pits scientific considerations against philosophical ones. The argument is more general, though, since it exalts science above any other forms of inquiry. It has implications not just for the contest between science and philosophy, but also for the contest between science and theology, common sense, and so-called pseudo-sciences such as astrology and parapsychology. That said, since this chapter is responding to a literature that concentrates on the clash between science and philosophy, a good deal of the critical discussion will focus on TN's anti-philosophical implications.

The tactic employed by the Track Record Argument may be illustrated by comparing two methods for predicting tomorrow's temperature.[16] The *roulette method* involves spinning a normal (not meteorologically sensitive) roulette wheel and predicting that tomorrow's temperature is the number the ball lands on. The *same-as-today method* predicts that tomorrow's temperature will be the same as today's. The roulette method has a poor track record. The same-as-today method in contrast has a good track record, so good that even sophisticated meteorological techniques do not significantly improve upon it. The idea behind the Track Record Argument is that, in cases of conflict, scientific norms' track record is more akin to the same-as-today method's track record whereas unscientific norms' track record is more akin to that of the roulette method. The Track Record Argument is thus a meta-empirical argument for TN.

The locution 'getting things mostly right' is admittedly vague. However, further precision is not really necessary for our purposes, save to add that getting things mostly right is better understood as returning approximately true rather than unqualifiedly true

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that this fundamental rejection is fortified by certain a posteriori considerations. In his later and better-known incarnation, Quine repudiated this 'intuition' altogether.

[16] Say that the prediction applies to some specified location on Earth at noon local time, and that it is accurate if it is to within two degrees Celsius of the actual temperature at that time and place.

answers to past questions. Judgements of past success rates are of course relative to some background beliefs; one cannot judge a method's success rate from a theoretically neutral perspective. In the temperature case, for example, one needs to take a view about past temperatures to judge that the same-as-today method has proved historically superior to the roulette method. This point will be very relevant later.

With these preliminaries behind us, we consider a series of objections to the Track Record Argument, broadly moving from less to more powerful. In roughly increasing order of strength:

The No Clash Objection (§3);

The Definitional Failure Objection (§4);

The Failure of Science Objection (§5);

The Good Philosophy is Scientific Objection (§6);

The Idle Wheel Objection (§7);

The No Dogmatism Objection (§8);

The Schools Objection (§9).

The last section—about the Schools Objection—in particular will show that the Track Record Argument depends on other anti-philosophical arguments for its plausibility. Our overall conclusion will be that the Track Record Argument is weaker than imagined.

3. First Objection: No Clash

This first objection to the Track Record Argument is that science and non-science cannot clash because they address different questions. The objection targets the Track Record Argument's premise by affirming that there are no clashes between science and non-science properly understood. From which it follows that there are no relevant cases over which to establish any sort of track record, superior or otherwise.

The idea that science is not in competition with other forms of inquiry has been around for a long time, as testified by Robert Hooke's draft preamble to the Royal Society statutes in the 17th century: 'The business of the Royal Society is: To improve the knowledge of natural things…(not meddling with Divinity, Metaphysics, Morals, Politics, Grammar, Rhetorick, or Logicks)' (cited in Holton 1988, p. 7); note the parenthetical remark. More recently, the objection typically takes the form of denying

that science and a particular non-science can clash. Some philosophers, for example, are fond of saying that science is in the business of making empirical claims about the world, whereas philosophy is not. Thus Wittgenstein:

> I am not interested in constructing a building, so much as in having a perspicuous view of the foundations of possible buildings. So I am not aiming at the same target as the scientists and my way of thinking is different from theirs. (1980, p. 7)

Wittgensteinian 'quietists' think of philosophy as not in competition with science, because it dissolves rather than resolves problems.[17]

Perhaps a more common move is to contrast religion and science. Stephen Jay Gould was a great champion of what he called 'the principle of Non-Overlapping Magisteria':

> I…do not understand why the two enterprises should experience any conflict. Science tries to document the factual character of the natural world, and to develop theories that coordinate and explain these facts. Religion, on the other hand, operates in the equally important, but utterly different, realm of human purposes, meanings and values—subjects that the factual domain of science might illuminate, but can never resolve…I propose that we encapsulate this central principle of respectful non-interference…by enunciating the principle of NOMA, or Non-Overlapping Magisteria. (2001, pp. 4–5)

The 'magisterium of science' is the empirical realm, whereas the 'magisterium of religion' deals with ultimate questions. Similar claims may be found in the writings of Karl Barth and some other theologians.

Despite these impressive testimonials, the No Clash Objection is mistaken. Take common sense, religious claims, and philosophy as examples of non-science. Common sense is affected by science and, in particular, by improvements in general scientific literacy. Nonetheless, common sense is distinct from science, and as history reveals, the two can clash. For instance, the special theory of relativity teaches that whether event *A* occurs before, simultaneously with, or after event *B* is not an absolute fact but depends on one's frame of reference. This conclusion is stubbornly at odds with common sense.

[17] Compare Leiter (2004, p. 2).

Likewise for dozens of other instances that defied common sense at the time they were proposed or currently do so (or both). Examples include: wave-particle duality, the Copernican theory, Darwin's hypothesis that mankind is descended from 'lower' creatures, Newton's hypothesis of action at a distance—or indeed his first law of motion, which runs counter to common-sense impetus theory.[18]

Religion can also clash with science. Anyone who believes in the Bible's literal truth cannot reconcile their religious epistemic norms with current scientific ones. The example of the origins of life and the Earth's formation is a case in point. Traditional Christians, who base their belief system on some weighted combination of scripture, tradition, reason and religious experience,[19] similarly find their views in tension with science, be it regarding the doctrine of creation, original sin, Christ's nature, divine intervention in the form of miracles or otherwise, eschatology, and so on. Admittedly, Christian theology is more metaphysically loaded than the theology of other religions; but all that is required to see off the No Clash Objection is a single example.

As for philosophy, suppose for the sake of argument that a scientifically convincing quantum-mechanical argument can be developed to the effect that the external world is mind-dependent; see Part III of Wigner (1970) for one such attempt. Even so, philosophers might maintain that the external world is mind-independent, perhaps on the basis of a relatively a priori argument concerning the nature of language or mental content. If such a conflict arose, Trumping Naturalists would recommend that we side with science and accept that the world is mind-dependent. In such an event, we would have a clear-cut clash between philosophy and science—and a Trumping-Naturalist recommendation to follow the latter.

In general, the 'separate domains' conception of philosophy, according to which philosophy and science cannot clash because they are concerned with different domains, is belied by much philosophy. Relatively few philosophers maintain that philosophy is in the business of unempirical conceptual analysis, exploration, clarification of language, or

[18] According to which a constant force must be applied to an object if is to continue moving at the same velocity.
[19] The so-called Wesleyan Quadrilateral—but here without any Methodist overtones.

intellectual therapy. On some conceptions of philosophy, science and philosophy may not clash; but on most recognisable ones, they can and do clash.

4. Second Objection: Definitional Failure

This next objection aims to deflate the Track Record Argument's significance by claiming that non-science must by definition fail. Most of the central theoretical disciplines have historically been intermingled with philosophy. As soon as they became more successful, they broke off from philosophy and emerged as their own subjects. A relatively recent example is the separation of psychology from philosophy at the end of the 19th century. If past non-scientific norms are simply those that turned out to be unsuccessful by our lights, then the Track Record Argument's premises and conclusion are true—but merely by definition. Sir John Harrington observed that

> Treason doth never prosper, what's the reason?
> For if it prosper, none dare call it treason.

The idea behind the present objection is that Harrington's ditty applies just as much to treason as to non-science. Neither ever prospers, *ex vi terminorum*—by dint of meaning.

This objection should be given short shrift. We do not hesitate to label norms as non-scientific even if we lack evidence for their untrustworthiness. In particular, if the objection were sound, no one engaged in the search for truth would call herself a philosopher as opposed to a scientist. Besides, the objection does not achieve what it thinks it does. The point of the pessimistic induction's conclusion is *not* that those of today's norms that will later be deemed unscientific cannot overrule those of today's norms that will later be deemed scientific. Otherwise, its cash value would be unclear: how can we tell which of today's norms will be considered scientific, and which not? It is of little interest to be told that non-science is untrustworthy if non-science is defined as whatever will come to be seen as untrustworthy. The thrust of TN is rather that the subset of norms we currently think of as non-scientific cannot overrule norms we currently think of as scientific. The Definitional Failure Objection therefore itself fails.

5. Third Objection: The Failure of Science

Another predictable objection to the Track Record Argument is that science itself has a poor track record. The items on Larry Laudan's (1981) familiar laundry list—the humoral theory of medicine, the hypothesis of the electromagnetic ether, the caloric theory of heat, and others—were all well-regarded in their time. Yet each of these theories turned out to be wrong. In a nutshell, Laudan's point was that observational success historically goes hand in hand with theoretical failure, that is, falsehood of the underlying theoretical assumptions. This supposedly defuses the realist argument that takes observational success as a reliable indicator of theoretical truth.

A familiar rejoinder to Laudan's argument, in a nutshell once more, is that its conclusion is blocked if we restrict attention to mature scientific theories that have accrued extensive experimental verification or to parts of theories that are truly pulling their weight in observational predictions. In fact, given the demographics of our planet, the great majority of scientists who have ever existed were born after 1950, and most of the science of the past century or so is remarkably stable. To take just one example, the physics of all but the very large and the very small and the way they fit together is generally held to be so secure that any conceivable final theory is bound to vindicate at least its approximate truth. This sort of response is compatible with a wide range of philosophical views about science, from various forms of structural realism to more traditional forms of realism.[20] In any case, Laudan's pessimistic meta-induction is really an argument that successful reference of theoretical terms is not necessary for successful science, however one construes 'success'. But since nothing about the Track Record Argument requires successful reference of theoretical terms, the two arguments are orthogonal to one another.

For our purposes, an even more direct reply to the pessimistic meta-induction is also available. The clashes between science and philosophy from which the Track Record Argument draws inspiration involve claims not questioned by the pessimistic meta-induction. In order to get off the ground, Laudan-inspired anti-realism must insist that science has been highly successful in its more observational claims. Yet some of the alleged cases of conflict—e.g. Lewis's example that motion is impossible—are

[20] For a review of some of these positions, see. e.g. chapter 2 of Ladyman & Ross (2007).

straightforwardly observational. That science has a good track record at this relatively observational level is pretty much beyond dispute. (It is common ground, for example, in the debate between constructive empiricists such as van Fraassen and scientific realists.)[21] Another category consists of tenets central to all science, e.g. the claim that theories are made probable by evidence. Questioning such tenets is not necessarily beyond the scientific pale. But the tenets are evidently different from the theoretical hypotheses beloved by Laudan and other proponents of the pessimistic induction. It seems, then, that the alleged examples of observationally successful scientific theories eventually deemed to be false and the kinds of examples invoked by Trumping Naturalists do not overlap significantly, if at all.

Finally, even if we believe that parts of our current best scientific theories are unlikely to turn out to be approximately true, this thought is tempered by the knowledge that other parts are likely to be approximately preserved. Moreover, by assumption it is impossible to currently identify which is which. The overall credence reduction in currently successful science enjoined by a balanced assessment of Laudan's argument is therefore fairly low.

In sum, the Scientific Failure Objection does provide an opening against the Track Record Argument. But its effect is largely mitigated by the considerations mentioned. Of course, the more radical a view one takes of Laudan's and similar examples, the more askance one will look upon the Track Record Argument's premise. But it is hard to take so radical a view as to disarm the argument entirely.

6. Fourth Objection: Good Philosophy is Scientific

The No Clash Objection (§3) conceived of science and philosophy as distinct in kind, and thence incapable of clashing. A diametrically opposed objection takes science and philosophy to be so similar that they *never* clash. Some philosophers take philosophy to

[21] Witness the experimental success of quantum electrodynamics, in Richard Feynman's words: 'To give you a feeling for the accuracy of these numbers, it comes out something like this: If you were to measure the distance from Los Angeles to New York to this accuracy, it would be exact to the thickness of a human hair. That's how delicately quantum electrodynamics has, in the past fifty years, been checked—both theoretically and experimentally' (1985, p. 7).

be entirely scientific, in the sense that exactly the same standards (or canons or norms) of reasoning apply in philosophy as in science. Since for them philosophical standards cannot diverge from scientific ones, philosophy and science can never disagree. From this perspective, TN is true but has no anti-philosophical bite: if science endorses *p* then so does philosophy, so the two cannot clash.[22]

One may of course question the conception of philosophy this objection presupposes. Does philosophy really have no proprietary norms over and above the scientific? The most naturalist-friendly response, however, is to reformulate the argument in terms that are closer to the original intention behind it. We might let *p* be the sort of claim that contemporary natural science takes a direct and proprietorial interest in, or presupposes, rather than the sort of proposition contemporary philosophers argue over and publish papers respectively attacking or defending. For example, recalling Lewis's examples, science assumes that motion is possible, that things exist outside the mind, that time is real, that theory is made probable by evidence, and that people have beliefs. The revised version of TN is simply that if science endorses *p*, restricted to this sort of *p*, we should believe *p*. The anti-philosophical effect is exactly the same as the original argument, whilst acknowledging (for the sake of argument) that philosophy applies the same norms as science, only in the pursuit of answers to somewhat different questions—at least typically.

As we have seen, none of the first four objections to the Track Record Argument is particularly successful. Let's now turn to more threatening ones.

7. Fifth Objection: The Idle Wheel

There are propositions implied by current scientific theory that do not make a significant contribution to the theory in question. These 'idle wheels', though they seem to be part of the scientific theory in question, are not in fact spinning. As an illustration, take the

[22] An example of authors who seem to adopt such a view of science is Ladyman & Ross (2007, p. 28): '…there is no such thing as "scientific method", by which we mean: a particular set of positive rules for reasoning that all and only scientists do or should follow. There are of course many observed prohibitions (for example, "Do not induct on samples known to be selected in unrepresentative ways" and "Do not invent data"), but these apply to all sound reasoning, not to distinctively "scientific" reasoning'.

debate between realists and idealists (Lewis's third example). Realists maintain that the universe and its constituents are mind-independent;[23] idealists maintain that they are mind-dependent. The Trumping Naturalist might simply read off realism from science, claiming that current science endorses realism. The idealist might respond that although science is in fact couched in realist terms, it need not be. Conceding that most current science adopts a realist language and conception, she—the idealist—denies that it endorses realism. For as she sees it, realism is an idle wheel in current science: science with a mind-dependent construal of the universe, call it *science*^{MD}, is not scientifically inferior to *science*^{MI} (science with a mind-independent gloss). Of course, if scientific norms do not favour science^{MD} over science^{MI}, adopting TN does not resolve the realism-idealism debate.

We should be clear that this is really an objection to how TN is used rather than an objection to TN *per se*. Realists who wish to invoke TN to argue for realism must show that realism contributes to science's success more than idealism ever could. They must examine whether various scientific theories are compatible with an idealist interpretation, or more generally whether idealism is in tension with any parts of science. Although not exactly the same as traditional philosophical debates regarding realism and idealism, reflections of this sort—which one finds in contemporary philosophy of science or scientifically-minded metaphysics—have many affinities with them. The moral is that philosophical reflection on, and interpretation of, science is required in order to clarify what exactly it is that TN enjoins us to accept.[24]

Some idle wheels are easy to spot. When conservation of energy was posited as a distinct principle in the mid-19th century, some scientists (notably Lord Kelvin) propped it up with a theological explanation: energy is God's gift to the world, which is why it can neither be increased nor decreased by non-divine activity. The scientific principle has

[23] With the usual caveat about the specifically mental constituents of the universe—our thoughts, feelings, etc.

[24] Compare Daly & Liggins (2011, p. 323): 'Resolving those [philosophical] debates involves weighing up many kinds of data and many methodological considerations by means of a protracted and often difficult cost-benefit analysis'. The debate might also lead to the broader question of what constitute the aims of science.

survived into the 21st century, though Kelvin's theological scholium has not. Similar scholia—e.g. that laws of nature are God's handiwork—were prevalent in older science (Boyle and Bacon come to mind), and still occasionally surface. Today, however, almost everyone thinks of such claims as detachable from the science—hence 'scholia'.

The idleness or industry of a particular wheel may not, however, always be easily detectable. Take Lewis's invocation of TN in *Parts of Classes*, for simplicity adapting his example from set theory to arithmetic. Contrast two interpretations of the statement that 1 + 2 = 3. On an eliminative structuralist reading, '1 + 2 = 3' is interpreted as (roughly) 'in any structure instantiating the Dedekind-Peano axioms, the function representing addition takes the second element and the third element to the fourth element'. (The first element represents zero.) On a platonist reading, '1 + 2 = 3' is instead interpreted as 'the abstract entities 1 and 2 stand in the abstract addition relation to the abstract entity 3'. Now suppose that the platonist interpretation of '1 + 2 = 3' in fact correctly reflects how mathematicians understand the sentence. In combination with TN, does this entail that platonism is true? Not necessarily. Perhaps mathematical norms do not endorse the platonist interpretation of arithmetic any more than they endorse its structuralist interpretation. Careful scrutiny might even show that they endorse the latter. In other words, platonism *might* be an idle wheel in mathematics. There are no short cuts here of the type Lewis was hoping for.[25] What is clear is that espousing TN does not in itself give us much purchase on such philosophical questions. The hard work lies in showing which of various philosophically rival views is scientifically privileged.

[25] The Idle Wheel Objection is related to what in my (2005) & (2008) I called the reinterpretation objection. I argued there that philosophy does not have a comparatively worse track record than science when it comes to questions of interpretation. I had in mind questions such as whether science^{MI} is scientifically preferable to science^{MD} or whether the platonist interpretation of arithmetic is mathematically preferable to its structuralist interpretation, or whether realism or instrumentalism is the correct conception of a particular scientific theory. If the interpretation inherits the scientific confirmation accrued by the theory, then it is beyond dispute according to TN. But if the interpretation is an idle wheel, it is not scientifically endorsed and may therefore be overturned (by philosophy say) compatibly with TN. Thus the reinterpretation objection to TN in my (2005) succeeds if and only if the interpretation of a domain is integral to its associated scientific theory. In other words, the reinterpretation objection is a special case of the Idle Wheel Objection.

It should be fairly clear, then, that the Track Record Argument does not offer a shortcut in the philosophical debate. In particular, the scientific merits and demerits of realism on the one hand and those of idealism on the other must be carefully weighed before TN can do the work asked of it. As stressed earlier, this is not an objection to TN itself. It is a criticism of TN's ability to move the dial philosophically.

8. Sixth Objection: No Dogmatism

The next objection is based on the fact that the Track Record Argument is not deductively valid. Past failures cannot logically compel one to reject a belief-acquisition method: one can insist with perfect logical consistency that a predictive method with a past success rate of 0% will get it right next time, or that a method with a past success rate of 100% will get it wrong next time. It is not even a symptom of illogicality *per se* to be 100% convinced that a method with a 0% past success rate will get it right next time, past evidence to the contrary. Nevertheless, its proponents will say that, despite its logical invalidity, the Track Record Argument's conclusion is warranted, since rationality goes beyond mere logical consistency. A comparatively poor track record should decrease one's confidence in the method if one is rational; in fact, other things being equal, it should lead one to bestow no confidence in the method if pitted against a historically superior one.

The Trumping Naturalist's response assumes that it is rational to assign a historically unreliable method no probability of success. Yet must there always come a point at which one's confidence diminishes to 0? Consider cautious Kath, who never assigns credence 0 or 1 to any proposition that is not a logical truth or falsehood.[26] Kath starts off with some initial credences (distinct from either 0 or 1) about the soundness of the same-as-today method and the roulette method for predicting the next day's temperature. Time goes by and Kath notices that the same-as-today method has a good track record whereas the roulette method has a poor one. Her confidence in the former's soundness goes up to 0.7 say and her confidence in the latter's soundness goes down to

[26] Though there does not appear to be anything special about logical truths in this regard. If you agree, replace cautious Kath by supercautious Susan, who never assigns credence 0 or 1 to *any* proposition.

0.2 say. The trend continues and Kath adjusts her credences accordingly, repeatedly raising her credence in the reliability of the same-as-today method and repeatedly lowering her credence in the reliability of the roulette method. Yet Kath, being a cautious sort by name and nature, never lets these credences actually reach 1 or 0, however much evidence comes in. She always leaves room for the possibility that the roulette method might get it right and that the same-as-today method might fail. There is always a sliver of doubt in her mind about extending past trends into the future.

Kath is clearly not irrational. In fact, many would laud her as a paragon of rationality. Surely her response is at least rationally permissible, if not rationally compulsory or optimally rational. A credential principle congenial to Kath, if she is naturalistically minded, might take the form:

> For any p, give p credence $s \times d_1 + (1- s) \times d_2$ in p if scientific norms endorse p to degree d_1 and non-scientific norms endorse p to degree d_2,

where s might be 0.9 say or some other number close—but not equal—to 1.

A principle along these lines, in which $s < 1$, cannot be an expression of TN on pain of abandoning science's trumping role. Although a threshold credence account of belief—according to which a subject believes p iff only her credence in p is greater than some threshold—is not generally correct, it does reflect the difference between the subject believing p and not believing p in some cases. Suppose Kath is in such a case with threshold t, and that science's endorsement of p is to degree d_1 with $d_1 > t$. She might nevertheless disbelieve p if her non-scientific norms endorse p to a sufficiently low degree d_2. The simple arithmetical point is that $s \times d_1 + (1- s) \times d_2$ may be lower than t even if d_1 is greater than t as long as s is smaller than 1. In such cases, philosophy may overturn science's recommendation regarding p. Kath's rule therefore captures a form of naturalism that falls short of giving science a trumping role, even for high values of s, so long as $s < 1$.

There is a twist in the tale. Cautious Kath is in fact behaving just as scientific norms recommend. For it is part of science that no proposition should be believed with utter certainty and that no method should be trusted entirely. Indeed, ask a scientist for

the principal characteristic of science, and the chances are that this is what she will mention first: science enjoins that no proposition is beyond doubt. From an anthropological point of view, modern science differs from previous 'knowledge traditions' precisely in its willingness to admit our ignorance and fallibility.[27] The Track Record Argument's conclusion only follows on the basis of a dogmatism that science itself rejects. Cautious Kath's stance is an alternative naturalism more in line with science's anti-dogmatism than TN is.

In reaching this conclusion, we have followed a strict line about what qualifies as an expression of TN. Any argument that succeeds in establishing some version of our opening platitude—e.g. something along the lines of 'In assessing whether *p*, give most emphasis to what science says about *p*'—but falls short of underwriting a trumping role for science is not an argument for TN. This high standard, it should be stressed, is *self-imposed* by Trumping Naturalists.[28] In the next section, we develop an objection that threatens a looser version of naturalism.

You may ask why so many good philosophers have endorsed a thesis susceptible to relatively straightforward refutation. One explanation is that TN lies at the end of a road along which philosophers are generally willing to travel very far. Overstatement can then be hard to resist. Perhaps another reason is that, as a philosopher, there is a certain transgressive thrill to be had in doing down your own discipline. In any case, as we have seen, TN is too strong to be plausible.

9. Seventh Objection: Schools

This section focuses on the clash between philosophy and science. In part, this is because it is the main case discussed in the literature, and in part because a single counterexample is enough to falsify a generalisation.

The Track Record Argument is less compelling to philosophers who break with the past. If you spearhead a philosophical enterprise radically different from anything that has come before, you stand outside the Track Record Argument's range. Most

[27] Harari (2011, p. 279).
[28] See the references in footnote 3. This point is also stressed by other critics of (what I have called) Trumping Naturalism, such as Daly & Liggins (2011, p. 322).

philosophers, however, are part of a historical tradition, whether they like it or not. As Trotsky is said to have remarked: though you may repudiate history, history will not repudiate you. There are of course many traditions in philosophy (most obviously Western and Eastern), many sub-traditions within them (e.g. empiricism or rationalism), species of these (e.g. logical empiricism), subspecies, and so on. Notoriously, consensus on major philosophical questions is hard to achieve and philosophers tend to divide into different camps or schools when it comes to their answers. Bourget & Chalmers's (2014) survey of c. 2,000 philosophers in 2009 revealed wide disagreement among them. Such sociological data opens up the possibility that, for many philosophers, past and present norms do not significantly diverge on whether *p* is true, for any given *p*. The thought, then, is that from the perspective of any given philosopher, there is broad historical agreement over what philosophical norms endorse.

The existence of philosophical schools—groups of thinkers with different views on different questions, without the usual implication that the differences are particularly systematic—weakens the Track Record Argument. The reason is that failure within any given school, *from the perspective of that very school*, is historically limited. Contrast this with science, in which today, broadly speaking, there are no schools.[29] Within each school, a philosopher regards her take on the question as roughly consistent with her particular tradition's history. Thus philosophers of any given school tend *not* to see the history of philosophy of their school as a history of failure—at least following some historical watershed, often the school's formation or the moment it reached maturity. The data of historical failure upon which the Track Record Argument is supposedly founded are therefore missing.

To illustrate the Schools Objection, let's run it on a few of Lewis's examples of alleged philosophical failure. These, you will recall, were that: (i) motion is impossible;

[29] I'm well aware that scientists disagree. My point is that these disagreements are more local than in the case of philosophy. Some scientific traditions reject theories for entire generations; but eventually there is convergence. The importance of scientific 'schools' is also relatively diminished today. These days, differences in 'schools' tend to reflect differences of interest, focus and approach more than *major* doctrinal disagreement, of which there is a relative paucity. These differences tend to be exaggerated by scientists themselves for professional gain, e.g. to enlarge one's circle of influence, increase grant capture, and the like.

(ii) the ontological argument is sound; (iii) nothing can be thought to exist outside the mind; (iv) time is unreal; (v) no theory has been made at all probable by evidence; (vi) an empirically ideal theory cannot possibly be false; (vii) it is a wide-open scientific question whether anyone has ever believed anything. The response to (i) is that any philosopher who thinks that Zeno's little piece of reasoning is not sound by today's standards is unlikely to think it was sound by the standards of Zeno's time. In fact, Zeno's argument was at the time—and always has been—understood by the great majority of philosophers as issuing in a paradox, not a true conclusion. Whatever Zeno himself may have thought, philosophy itself never included the impossibility of motion as one of its official theorems. In fact, it is not even clear whether in Zeno's time (the 5th century BC), his argument would have been considered philosophical, mathematical, or scientific, or some combination of the three.[30]

In response to (ii), any philosopher who thinks the ontological argument is unsound by today's standards is unlikely to think it was sound by earlier ones, e.g. those of St Anselm's time. Indeed, many of the classic replies to the argument appeared not long after Anselm's 11th-century formulation in the *Proslogion*.[31] Examples (iii)–(vii) are similar. To begin with the first two, any philosopher who thinks that idealism is not endorsed by today's standards is unlikely to think it was endorsed by the norms of Berkeley's time. And anyone who thinks that the unreality of time is not endorsed by today's philosophical norms is likely to think that things were ever so, or at least that they were so at the start of the 20th century, when McTaggart published his argument.

I have spoken of 'schools' because this vividly brings to mind differences in attitude between individual philosophers. But my suggestion is not that the differences between, say, a realist and an eliminativist about folk psychology have the same kind of depth and systematicity as those between empiricism and rationalism of the early modern period. The 'Schools' label has strong connotations, which I realise are entirely apt only

[30] White (1992, p. 168ff.) and Knorr (1982) comment on ancient discussions of Zeno's argument. Knorr remarks that contemporary appraisal of how Zeno's argument was classified at the time can only be speculative, based as it is on relatively little documentary evidence.

[31] Whether or not Anselm himself regarded it as an argument, a vexed issue.

in a few cases (e.g. Neo-Platonism, Hegelianism, Thomism). Still, with its force appropriately understood, it conveys the right idea.

To be clear: my claim is *not* that for all broadly philosophical *p*, philosophers fall into different schools regarding *p*. Although there is a lot of disagreement in philosophy, especially over its 'central problems', there is also a good deal of agreement, in particular over the validity of various arguments or conditional claims such as, say, 'If scepticism is true then internalism about evidence is also true'.[32] Indeed, one can argue that when it comes to these kinds of claims, philosophy has a good track record. Real and stable knowledge has been created over the centuries, in philosophy just as in science.[33] The focus here on cases involving disagreement simply reflects the fact that these are the ones adduced as evidence for science and philosophy's differential track records.

We should also distinguish between what philosophical norms (held by some philosophers) at some time recommend and what most philosophers at that time believed. Consider a contemporary Popperian who believes that although evidence can falsify a theory, no amount of evidence can ever make it probable.[34] Now this thesis is framed using probabilistic language that would have made no sense to pre-17th-century philosophers and little sense to most 17th- and 18th-century ones. The period relevant to a Track Record Argument against Popper's contention must therefore begin no earlier than the late 18th century. Most philosophers from this point on have *not* been Popperians: they have believed that evidence can and does make theories more probable. Yet Popperians will tend to think that Popper's arguments were in principle available in 1785, 1835 and 1885 just as much as in 1935, when Popper deployed them b. The logical point that universal quantifications over all space and time are falsifiable but not verifiable could have been appreciated centuries ago. Hume had laid the foundations for Popper's

[32] Internalism about evidence being the view, roughly, that a subject's evidence supervenes on her internal mental states.
[33] Gutting (2009), esp. chs. 4 & 10.
[34] Popper (1935/1959). A representative quotation: 'I think that we shall have to get accustomed to the idea that we must not look upon science as a "body of knowledge", but rather as a system of hypotheses; that is to say, as a system of guesses or anticipations which in principle cannot be justified, but with which we work as long as they stand up to tests, and of which are never justified in saying that we know that they are "true" or "more or less certain" or even "probable"' (Popper 1959, p. 317).

argument in his formulation of the problem of induction in the middle of the 18th century. Bayes's theorem could have been appreciated in the late 18th century thanks to Bayes and Laplace's work. As Popperians see it, then, it would have been rational to accept Popper's arguments had they been produced anytime from the late 18th century onwards.[35] This illustrates the point that, from any given philosopher's perspective, the majority verdict at some point in the past should not be equated with what philosophical norms endorsed back then. Philosophers belonging to a school of thought regarding *p* will look back at the history of philosophy and typically read its philosophical norms as aligned with current ones regarding *p*, whatever the majority opinion, now or then.

Does the Schools Objection make it too easy to block the pessimistic induction by allowing philosophers to read their views back into the past? No: philosophers are no more illicitly reading their views back into the past than they are illicitly reading their views into the present. Popperians are simply being faithful to their philosophical perspective in thinking that philosophical norms have, from the late 18th century on, never endorsed the fact that evidence makes theory probable. Non-Popperians are likewise being faithful to their perspective in maintaining the opposite. One cannot help but use one's own philosophical convictions to judge what propositions past norms endorsed. Indeed, one reason why it is useful to speak of philosophical norms endorsing *p* rather than philosophy endorsing *p* is to emphasise the point that different philosophers take different views about what these norms endorse.

One might dismiss this whole way of proceeding as historically insensitive, because past philosophers framed problems and theories in terms not directly comparable to today's. As is often observed, strong Kuhnian claims about the incomparability of present and past theories are more plausible about philosophy than science. Yet such Kuhnian reservations sit ill with the Track Record Argument. Lewis's discussion assumes that, by contemporary lights, previous philosophical conclusions have been mistaken. If no such direct comparisons are possible, the Track Record Argument collapses. Since we

[35] In an appropriate formulation for the time. For the sake of argument, we have assumed that Popperians can be moved by inductive considerations such as the Track Record Argument. But if they are to be faithful to Popper, they have a much quicker response to the Track Record Argument.

are trying to give that argument the best run for its money, we cannot but ignore Kuhnian worries about incommensurability. Or to put it another way: to the extent that you are worried by Kuhn, you should to at least that degree have reservations about the Track Record Argument.

One might also object that those who come to different philosophical conclusions share the same norms but have different views as to what their norms endorse. One reason behind the different verdicts might be the possession of different data. In the temperature prediction case, for example, the fact that an observer predicts that tomorrow's temperature will be 25° and another 18° does not in itself imply that they are using different methods. They could both be using the roulette method but have spun different roulette wheels; or they might have spun the same wheel but read it differently; or they could both be using the same-as-today method but have a different record of today's temperature. In general, one can be hamstrung by one's data just as much as by one's standards/norms. Thus, it might be said that the Schools Objection falsely infers a difference in philosophical norms from a difference in philosophical views.

A full evaluation of this point would call for a detailed analysis of each case. No such analysis is required here, however, since the force of the Schools Objection is simply that from any given philosopher's perspective, there is a nice fit between what past philosophical norms have recommended and what current norms recommend. The Cartesian sceptic believes that the philosophical standards of 2024 endorse scepticism just as much as those of 1641 did, the year in which Descartes' *Meditations* was published; and the anti-sceptic thinks that neither set of standards endorses scepticism. Whether the sceptic and the anti-sceptic have different norms, or share the same norms but construe them differently is ultimately irrelevant. The essential point is that a given philosopher's verdict about past cases closely matches her verdict on present ones. It is this agreement that undermines the Track Record Argument, whatever its source.

Another accusation, only partly pre-empted earlier, is that the Schools Objection seems to be committed to past and present philosophical standards agreeing on any question whatsoever. As the general claim is false, it is fortunate that the Schools Objection is not committed to it. Even from the perspective of a given philosophical school, philosophical standards of the past may return different verdicts from present

ones. For example, consider a traditional version of the design argument for the existence of God, which claims that the best direct explanation for the biological complexity of organisms on Earth is that some powerful, purposeful being created them. At the beginning of the 19th century, this argument was overwhelmingly strong, strong enough to have impressed the young Charles Darwin. The argument was severely weakened, if not demolished, by the alternative explanation for biological complexity provided by Darwin's own theory of evolution. From our perspective, other versions of the argument from design, e.g. from the fine-tuning of physical constants, are much stronger. As a result of scientific progress, then, support for the (direct) creationist explanation of biological complexity has fallen sharply in the past two centuries.

A plausible example of a changed scientific and philosophical norm is the emphasis placed on common sense. Copernicus's theory that the Earth moves round the Sun offended against common sense when it was first propounded. One reason was that rapid motion at that time was associated with riding on horseback, or in a carriage over rutted roads, or with sailing on generally rough seas.[36] As no such sensation results from standing still on the Earth's surface, it simply did not *feel* as if the Earth moved Nowadays, the importance afforded this type of consideration is much diminished, since we are aware that motion may be smooth. More generally, we have learnt that the universe is much stranger than common experience on the surface of the Earth suggests. Prior to the 20th century, philosophy and especially science respected common sense more than they do now.

The Schools Objection therefore does not overshoot since it concedes that philosophers of various stripes—schools—accept that there are past cases of philosophical failure. Philosophy's past success rate is higher than the Trumping Naturalist reckons when estimated from the perspective of various schools; but it is not 100%. The objection accordingly does not absolve philosophy of all past historical failure. But it does dramatically reduce its scope.

Finally, suppose that the Schools Objection does succeed in establishing that, as a result of the considerable disagreement in philosophy, there is no single perspective from

[36] Gribbin (2003, pp. 11–12).

which philosophy has a poor track record. Is this lack of agreement not itself damning? How can the deliverances of philosophy be trusted given the extent of our disagreement over what exactly these deliverances are? An equally deflationary moral seems to be that, unlike science, convergence of opinion on matters philosophical is unlikely or even impossible.

These are certainly important criticisms of philosophy's credibility. But they do not undermine the Schools Objection. The argument that infers from the comparative lack of agreement over philosophical questions (perhaps compared to scientific ones) that philosophy is not credible (or at least less credible than science) is not a historical argument, since it depends on how things stand today rather than on the disciplines' track records. This synchronic Disagreement Argument is distinct from the diachronic Track Record Argument. The differences between the three arguments can be helpfully illustrated by means of our temperature prediction analogy. Suppose you are part of a scientific community that is now in its 50th year. Initially, half your peers used the same-as-today method and the other half used the roulette method to determine the next day's temperature. Every year, one percent of inquirers switched from the same-as-today method to the roulette method. Looking back in time from year 50 (the present), you observe perfect convergence in people's temperature prediction methods over time: in year 0 the split was 50%–50%, now it is 100%–0%. At present, then, there are no differences in opinion, since everyone employs the roulette method. And yet, for all that, assuming that our imaginary community's world is in other relevant ways like ours, the roulette method still has a poor track record compared to the same-as-today method. The community accordingly remains vulnerable to an inductive argument—the temperature analogue of the Track Record Argument—against the roulette method and in favour of the same-as-today method. Yet it is *not* susceptible to the temperature analogue of the Disagreement Argument, since by hypothesis there is no disagreement in the present. Nor is it susceptible to an analogue of the Lack of Convergence argument, since by hypothesis there is convergence over the past 50 years to the roulette method. Moral: the Track Record Argument is distinct from the Disagreement Argument and the Lack of Convergence Argument.

Now, my aim in this chapter is not to assess all possible pro-naturalism and anti-philosophy arguments. It is the more modest one of assessing the Track Record Argument. The Disagreement Argument and the Lack of Convergence Argument deserve extended, but separate, consideration.[37]

We conclude with methodological advice for philosophers flowing from the Schools Objection. Philosophers should show sensitivity about whether *from their philosophical perspective* philosophy has a poor track record. If so, that should tend to undermine their philosophical norms. Other things being equal, one should adopt a philosophy that minimises philosophy's history of failure.

10. Summary

In bullet point form, here are the seven objections to the Track Record Argument and an (unnuanced) summary assessment:

- No Clash Objection (§3): mistaken;
- Definitional Failure Objection (§4): mistaken;
- The Failure of Science Objection (§5): resistible;
- Good Philosophy is Scientific Objection (§6): does not affect a suitably reformulated conclusion;
- Idle Wheel Objection (§7): shows TN must be supplemented to be effective;
- No Dogmatism Objection (§8): undermines TN as stated;
- Schools Objection (§9): undermines a looser version of TN.

Roughly speaking, the first four objections do not undermine the Track Record Argument, whereas the last three do. The Idle Wheel Objection (§6) shows that even if TN is true, much work of a broadly philosophical nature is needed before reading philosophically decisive claims from scientific practice. The No Dogmatism Objection

[37] Beebee (2018) sees what I have called the Disagreement Argument (which she calls the 'disagreement challenge') as well as the 'methodological challenge' (that our methods in philosophy, especially metaphysics, can stake no claim to truth-conduciveness) as undermining the view that philosophy, especially metaphysics, aims for knowledge.

(§7) succeeds in defeating the Track Record Argument and TN itself. The Schools Objection (§9) threatens a version of the argument that motivates less stringent naturalisms than TN.

Our opening platitude—that science is, generally speaking, more credible than non-science—is not in doubt. We *should* generally give science more weight in our deliberations than non-science. But the naturalist tendency that converts this sound advice into a trumping thesis goes too far, at least if its main basis is the Track Record Argument. A closer look at how philosophical debates evolve over time suggests that little more than the platitude can be squeezed out of respective track records. The Track Record Argument is not that strong.[38]

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