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Evolutionary debunking arguments, commonsense and scepticism

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Abstract

Evolutionary debunking arguments (EDAs) seek to infer from the evolutionary origin of human beliefs about a particular domain to the conclusion that those beliefs are unjustified. In this paper I discuss EDAs with respect to our everyday, commonsense beliefs. Those who seriously entertain EDAs for commonsense argue that natural selection does not care about truth, it only cares about fitness, and thus it will equip us with beliefs that are useful (fitness-enhancing) rather than true. In recent work Griffiths and Wilkins argue that this is a mistake. Fitness-tracking and truth-tracking are not rival, but rather potentially complementary, hypotheses about the function of our cognitive belief-forming systems. It may be that those systems maximise fitness *by* tracking the truth. I argue that while they are right about the standard EDAs for commonsense, the threat of evolutionary scepticism remains, because cognitive systems whose function is to track the truth may still be highly unreliable. I propose an alternative, Moorean approach to vindicating our commonsense picture of the world and dispelling the threat of scepticism. Once this has been established, however, we may appeal to evolution to explain the good fit between our cognition and the world. I thus propose that an evolutionary explanatory project ought to replace the troubled evolutionary justificatory project. This ought to be appealing to those such as Griffiths and Wilkins who seek a naturalistic non-sceptical account of our commonsense beliefs and their origins.

Keywords Evolution · Fitness · Commonsense · Scepticism · Explanation

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1 Introduction

Evolutionary debunking arguments (EDAs) seek to infer from the evolutionary origin of human beliefs about a particular domain to the conclusion that those beliefs are unjustified, and do not count as knowledge. EDAs with respect to moral beliefs have been much discussed in recent years, but EDAs have also been used to debunk beliefs in other domains, e.g. religious beliefs, or even used to cast doubt on all our beliefs. In this paper I discuss EDAs, and possible responses to them, with respect to our everyday, commonsense beliefs. Some of the arguments we shall consider pertain to all of our beliefs, but it is their implications for everyday, commonsense beliefs that I am interested in. By 'commonsense beliefs' I mean to refer to beliefs that ordinary, everyday objects (chairs, tables, trees, cats, people, buildings etc.) exist, have the properties they are ordinarily taken to have, and stand in the relations they are ordinarily taken to stand in.[1]

Until fairly recently, it was widely held that the truth of our everyday beliefs, and the reliability of the cognitive systems that produce them, was more or less guaranteed by the fact that our minds are the product of evolution by natural selection (e.g. Dennett 1987, Quine 1969). Surely, it was thought, having true beliefs about our environment would, other things being equal, be more adaptive—be more conducive to surviving and reproducing—than having false beliefs. (This is a kind of evolutionary *supporting* (as opposed to debunking) argument (ESA) about commonsense.) This comfortable assumption was brought into question in the 1980s and 1990s, most famously by Stephen Stich, who argued that there is no guarantee that natural selection will favour reliable belief-forming processes, and it may often be the case that highly unreliable systems will be adaptive for certain species in certain environments, and thus will evolve. We have no reason to think our species might not be one for whom such systems have proven evolutionarily advantageous, and indeed the strong evidence of systematic biases, fallacies, and other failures of rationality which appear to be built into human psychology indicates we very likely are. This opens the way for EDAs with respect to our commonsense beliefs.

In recent work Griffiths and Wilkins (2015; see also Wilkins and Griffiths 2012) argue that such EDAs embody a fallacious counterposing of truth-tracking and fitness-tracking. Evolution does not 'care about' truth, the debunkers insist, it only cares about survival and reproduction. Griffiths and Wilkins argue, successfully to my mind, that this is a mistake. Fitness-tracking and truth-tracking are not rival, but rather potentially complementary, hypotheses about the function of our cognitive belief-forming systems. It may be that those systems maximise fitness *by* tracking the truth. Once we see this, we can understand why the standard EDAs about commonsense fail. Evolutionary supporting arguments may then be back in business.

[1] 'By "commonsense," we mean those everyday beliefs that guide mundane action and whose subjective certainty was famously appealed to by Moore (1925). Moore's examples included the existence of his body, and of other human bodies and inanimate bodies, all arranged in space and time, as well as the fact that those other human bodies knew similar things' (Griffiths and Wilkins 2015, 213).

In this paper I argue that while they are right about the standard EDAs for commonsense, the threat of evolutionary scepticism remains. That is because cognitive systems whose function is to track the truth may still be highly unreliable. Griffiths and Wilkins make a strong case that our commonsense belief-generating cognitive systems are truth-tracking, but their arguments fall short of establishing that they are reliable, and thus do not defeat the sceptic. In general, the attempt to justify anti-scepticism about commonsense by appeal to evolution (evolutionary supporting arguments) is, I argue, unnecessary and misguided. I propose an alternative, Moorean approach to vindicating our commonsense picture of the world and dispelling the threat of scepticism. Once this has been established, however, we may appeal to evolution to *explain* the good fit between our cognition and the world. I thus propose that an evolutionary explanatory project ought to replace the troubled evolutionary justificatory project. And I argue that this ought to be appealing to those such as Griffiths and Wilkins who seek a naturalistic non-sceptical account of our commonsense beliefs and their origins. This paper does not aim to provide a comprehensive treatment of the large topic of the relations between evolution, truth, and commonsense realism. My aim is more modest: to identify a problem in Griffiths' and Wilkins' otherwise promising response to evolutionary scepticism, and propose a possible solution.

2 Preliminaries

2.1 Taxonomy of positions

It will be helpful to distinguish four positions with respect to the relationship between evolution and our commonsense beliefs.[2]

1. Anti-naturalistic anti-scepticism

Plantinga (1993) argues that it follows from naturalism (for the purposes of this paper 'naturalism' will be understood very broadly as the view that human beings and their minds are the product of evolution and not a creator God) that our beliefs are not on the whole true and scepticism is justified (because naturalism entails that our beliefs aim at promoting evolutionary fitness, they don't aim at truth). This is the *evolutionary debunking* premise—more on this below. But Plantinga does not think that our beliefs are not on the whole true and scepticism is justified. Thus he argues, by modus tollens, that naturalism is false, and that we are the product of a creator God.[3] Call this position 'anti-naturalistic anti-scepticism'.[4]

[2] These positions can be cast in global terms, as pertaining to all our beliefs. But even if they are, as I noted above, it is their implications for commonsense beliefs that I am interested in.

[3] He also argues, famously, and relatedly, that naturalism is self-undermining, as if naturalism were true, and our minds were the product of natural selection, we would have no reason to suppose any of our beliefs were true, including the belief in naturalism itself.

[4] Alfred Russell Wallace held a similar view about the human mind—if the human mind was the product of natural selection, he argued, humans would be incapable of gaining any knowledge other than commonsense, day-to-day practical knowledge; yet clearly we do have knowledge beyond this (science, philosophy, mathematics, etc.); thus the human mind is not (or not solely) the product of natural selection, but rather requires the intervention of 'spirit'. This is a more limited anti-naturalism than Plantinga's.

2. Naturalistic scepticism

This position agrees with Plantinga that the evolutionary debunking premise is true—that naturalism implies that our beliefs are not on the whole true and scepticism is justified. But it turns Plantinga's modus tollens into a modus ponens—since naturalism is true, scepticism is justified. Call this view 'naturalistic scepticism'. As is often the case in epistemology, the naturalistic sceptic is more a threatening, disembodied presence than an actual philosopher, and it is hard to find many people who explicitly defend the view, so baldly stated. Stich and those who followed him are sometimes called debunkers/sceptics but that is a mistake, at least in the case of Stich, as I explain below. It will be convenient nonetheless to keep this view as our focus. When Griffiths and Wilkins respond to the sceptics/debunkers, they are responding partly to Plantinga, and partly to those who think naturalistic scepticism should be seriously entertained, and that EDAs for commonsense present a *prima facie* sceptical threat.

3. Naturalistic anti-scepticism

This position rejects the evolutionary debunking premise—it denies that naturalism implies scepticism. But it goes further than this—after all, one could deny that naturalism supports either scepticism or anti-scepticism (see below). It claims that naturalism in fact supports anti-scepticism—that the fact that our minds are the product of evolution gives us reason to think that our beliefs (for our purposes our commonsense beliefs) are on the whole true, and our belief forming processes are reliable. Call this view 'naturalistic justificatory anti-scepticism'. I call it 'naturalistic *justificatory* anti-scepticism' since, as we shall see, one may be a naturalistic anti-sceptic without thinking naturalism *justifies* anti-scepticism. Prominent naturalistic justificatory anti-sceptics include Dennett (esp. 1987), Quine, Fodor, Millikan, Lycan, Goldman, Papineau, and Griffiths and Wilkins.

4. Naturalistic neutrality

As I noted, Stich (1985, 1990) is sometimes interpreted as close to a naturalistic sceptic (position 2 above). I do not interpret him this way. He argues that there are real and hypothetical evolutionary scenarios in which natural selection will favour unreliable belief-forming (inferential) mechanisms. But he does not claim to have shown that reliable inferential processes never, or even rarely, evolve. It is consistent with what he says that they may evolve in some lineages some of the time. He claims to have shown simply that it cannot be assumed a priori, as it often is by naturalistic anti-sceptics, that reliable inferential processes that generate a preponderance of true beliefs *must* be favoured by natural selection. So he claims that evolutionary theory cannot, on its own, support an anti-sceptical position. Appeals to evolution on their own will not be decisive in establishing the reliability of our cognitive systems. I will understand his position to be that evolutionary considerations do not on their own support *either* scepticism or anti-scepticism. He is arguing *against* naturalistic anti-

scepticism without arguing *for* naturalistic scepticism.[5] I will thus refer to his position as 'naturalistic neutrality'.[6]

In the following section I will say more about the form of evolutionary debunking arguments.

2.2 Evolutionary debunking arguments

Griffiths and Wilkins follow Kahane's (2011) general schema for debunking arguments[7]:

Causal premise. S's belief that P is explained by X.
Epistemic premise. X is an off-track process.
Therefore
S's belief that P is unjustified.

An 'off-track' process is 'one that does not track truth: it produces beliefs in a manner that is not sensitive to whether those beliefs are true' (Griffiths and Wilkins 2015, 202). So, for example, an evolutionary debunking argument with respect to religious belief might look like this:

Causal premise. S's belief that God exists (etc.) is explained by evolution.
Epistemic premise. Evolution is an off-track process.
Therefore
S's belief that God exists (etc.) is unjustified

The epistemic premise in the above argument is incomplete. Evolution *may* be an off-track process with respect to all of our beliefs, but it is possible that it is an off-track process with respect to some of our beliefs, but not others. If this is the case, the epistemic premise should read 'Evolution is an off-track process with respect to religious belief.'

3 Griffiths and Wilkins on evolution and commonsense

Griffiths and Wilkins are sympathetic to evolutionary debunking arguments in some domains. They suggest, for instance, that evolutionary debunking arguments with

[5] It is true he makes much of the evidence for systematic failures of rationality I mentioned in the introduction, and raises (without necessarily answering) the question whether humans could be irrational by nature. But his argument is not an EDA; his evidence for irrationality comes from the psychological literature (experiments such as the Wason selection test), not primarily from general features of evolution by natural selection. When he discusses the latter it is in order to refute ESAs, not defend EDAs. I do not interpret him as defending either the standard EDA (SEDA) or the revised EDA (REDA) that I discuss below. If however I am wrong about this, and he should be classed as an evolutionary sceptic/debunker, that doesn't affect my taxonomy: we can still define a coherent position of naturalistic neutrality.

[6] I interpret Downes (2000) as a neutralist. He argues against ESAs, but there is no reason to suppose he endorses EDAs.

[7] His schema actually covers all debunking arguments, not just evolutionary debunking arguments. Evolution is just one among a number of substitutions for 'X' that have been made in debunking arguments.

respect to religious belief are sound.[8] This is because 'even a cursory examination of the leading contemporary accounts of the evolution of religious belief makes it clear that none of them make any reference to the truth or falsity of those beliefs when explaining their effects on reproductive fitness' (2015, 204). In other words, all of these accounts support the epistemic premise that 'Evolution is an off-track process with respect to religious belief.' As Harman (1977) argued, an error theory with respect to some domain is appropriate if the best explanation of why people hold beliefs about that domain makes no reference to the truth of those beliefs or putative facts within the domain. Appealing to facts about Gods and supernatural phenomena is arguably 'redundant', as Sterelny and Fraser (2017) put it, when it comes to explaining why people hold religious beliefs. Harman and others suggest this also holds for moral beliefs, and thus that an error theory is appropriate with respect to moral beliefs.[9]

What about evolutionary debunking arguments with respect to commonsense beliefs?

Causal premise. S's belief that, say, other people exist, is explained by evolution.
Epistemic premise. Evolution is an off-track process with respect to commonsense beliefs.
Therefore
S's belief that other people exist is unjustified.

For the purposes of this paper I will be assuming the causal premise is true. This might be disputed; Stich (1990) argues for instance, that the assumption that the inferential processes that are the subjects of both evolutionary debunking and evolutionary supporting arguments are the product of primarily evolutionary, rather than cultural, forces, is implausible.[10] But it is I think fairly plausible to suppose that our cognitive systems in general, and our commonsense belief-generating cognitive systems in particular, have been at least in large part shaped by natural selection. In any case, I wish to set this question aside, so as to explore the question of what follows if this assumption is granted.

I will thus take it that the question about evolutionary debunking arguments in the case of commonsense beliefs boils down to the truth or falsity of the epistemic premise 'Evolution is an off-track process with respect to commonsense beliefs.' Griffiths and Wilkins reject this epistemic premise. While accounts of the evolution of religious belief do not make any reference to the truth or falsity of those beliefs, or the facts that the beliefs purport to be about, the same is not true for accounts of the evolution of our commonsense beliefs. These accounts do (or at least should) make essential reference to the truth of those beliefs and the facts they purport to be about. Evolution is an 'on-track' process with respect to our commonsense beliefs—it tracks truth,

[8] They argue both that evolutionary supporting arguments for the truth of religious beliefs are unsound, and that evolutionary debunking arguments about religious beliefs are sound. These are closely connected in their discussion, but they are logically distinct claims, and one may endorse the former without endorsing the latter.

[9] This is more controversial that in the case of religious beliefs, and is disputed by many, including some who are sympathetic to first-order evolutionary explanations of our moral beliefs and responses, e.g. Sterelny and Fraser (2017).

[10] An anonymous reviewer pointed out that non-biological forms of evolution plausibly help to explain some beliefs of this sort, especially beliefs about artifacts such as tables or buildings.

in the sense that it favours cognitive mechanisms that give rise to true beliefs, other things being equal. In the religious (and possibly moral) domains, there is no link between evolutionary success and the truth of the relevant beliefs; the beliefs confer a fitness advantage on believers independently of, and irrespective of, the truth value of those beliefs.[11] In the commonsense domain however, there very likely is such a link between evolutionary success and truth; the beliefs confer a fitness advantage on believers just in case they are true. In short, there is an essential link between truth and evolutionary fitness in the case of commonsense beliefs, but no such link in the case of religious belief.

They would, I take it, endorse the following, evolutionary supporting argument (ESA)[12]:

Causal premise. Commonsense beliefs are explained by evolution.
Epistemic premise. Evolution is an on-track process with respect to commonsense beliefs.
Therefore
Commonsense beliefs are justified.[13]

The central claim advanced by those who think we should seriously entertain evolutionary debunking arguments with respect to our commonsense beliefs is that it is a conceptual mistake to think that natural selection would favour cognitive systems which track truth; rather, it will favour cognitive systems that produce beliefs that increase the organism's fitness (adaptedness to the environment). As Griffiths and Wilkins put it, according to this view 'we should expect cognitive adaptations to be fitness-tracking rather than truth-tracking. We know that selection will often favour unreliable cognitive systems, which produce many false beliefs, over more reliable cognitive systems which would eliminate those false beliefs' (2015, 205).

Griffiths and Wilkins argue that it is in fact the proponents of this argument that are making a conceptual error. The error is in counterposing truth-tracking and fitness-

[11] That is, inasmuch as they confer a fitness advantage at all. We should distinguish between adaptationist and nonadaptationist evolutionary accounts of religious belief. On the former, religious beliefs evolve because they confer a fitness advantage, possibly on human social groups (they contribute to social cohesion or some such thing). On the latter, they are not themselves adaptive, but are 'spandrels': they arise as a side effect of other processes that have been selected for. For example, it has been suggested (Boyer 2001) that we have an evolved tendency to attribute agency and intentionality to things (take the 'intentional stance' towards them, in Dennett's words). This tendency has generally served us well, and contributed to fitness (arguably this is an on-track process – the intentional stance may have been adaptive because generally it has been correctly applied to real intentional systems). But we over-apply the intentional stance, treating non-intentional systems and entities as if they have beliefs, desires, agency and so forth. And therein, on this account, lies the origin of religious beliefs. The beliefs are not themselves adaptive, but arise as non-adaptive or possibly even maladaptive side-effects of cognitive processes that *are* adaptive (this is of course common in evolution).

[12] This is my interpretation of their view. They do not explicitly endorse such an argument, but I take it to be implicit in their discussion. If in fact they do not endorse it (they may, perhaps, prefer the Quinean version of the argument I discuss below) and I have constructed a straw man, the argument is still worth considering, firstly because it is, as I said, a natural reading of the line of argument of their paper, and secondly because others would presumably endorse such an extension of their reasoning.

[13] They would prefer to express the conclusion as: 'it is reasonable to accept and act on commonsense beliefs'.

tracking as if these are *rival* hypotheses between which we must choose.[14] But in fact they may be complementary hypotheses corresponding to different levels of analysis. It may well be true that our cognitive adaptations are fitness tracking; but it may be the case that the best way to track fitness is to track truth—they will then track truth *in order to* track fitness. Consider as an analogy the question of why humans have hearts. It would clearly be absurd to argue that hearts exist not because they pump blood, but because they contribute to our evolutionary fitness, on the grounds that natural selection only cares about survival and reproduction, it doesn't care about blood pumping. Pumping blood and increasing fitness are not rival hypotheses about the function of hearts. Clearly hearts contribute to fitness *by* pumping blood. Equally, cognitive adaptations may contribute to fitness *by* generating true beliefs.[15]

The above is a purely conceptual point; it only establishes that we don't have to choose between truth-tracking and fitness-tracking when characterising the function of our cognitive systems.[16] Griffiths and Wilkins go on to argue that facts about evolution do in fact support the truth of our commonsense beliefs. Their hypothesis is that our cognitive systems track truth (in the commonsense domain), but they do so subject to constraints. This is supposed to account both for the fact that it is extremely plausible that accurately representing states of affairs in the world would, other things being equal, contribute to an organism's fitness, as well as the evidence that exists for widespread defects and biases in human reasoning, our proneness to logical errors, fallacies and irrationalities, which have been emphasised by the debunkers. These errors in reasoning and the like are predictable consequences of the quite severe constraints which prevent cognitive systems from operating perfectly in all circumstances. They don't show that truth-tracking is not the function of those systems.

It is an uncontroversial point that natural selection only optimises relative to certain physical, biomechanical, developmental, structural, historical, and genetic constraints which restrict what it can do. And selection must make trade-offs in the allocation of resources to different traits. Resources allocated to truth-tracking are resources that are not being allocated directly to reproduction, for example (Griffiths and Wilkins 2015). From this perspective we can see that apparently suboptimal cognitive systems beset with biases, giving rise to fallacies of reasoning etc., may in fact represent the best adaptive solution for the organism given the totality of its resources, needs, and ecological interactions. They will be *suboptimal (constrained) truth-tracking systems*, not systems that are not tracking truth at all.

[14] Although Stich is not a debunker, and in fact his position is, as we shall see, consistent with Griffiths' and Wilkins' arguments, he does occasionally fall into this error of counterposing truth-tracking and fitness-tracking, e.g. (1990, 62).

[15] The same goes for evolutionary explanations of the origin of religious beliefs. Suppose someone offers a group selectionist account—say, that religious beliefs contribute to social cohesion, and are thus adaptive for human groups. Here 'contributing to social cohesion' and 'contributing to group fitness' are not rival hypotheses about the origin of the beliefs. It is being suggested that the beliefs increase group fitness *by* increasing social cohesion. There are two levels of analysis at work.

[16] Thus they would say it is equally mistaken to try to debunk, say, religious beliefs, on the conceptual grounds that natural selection cares about fitness, not truth. One may, without making a conceptual error, claim that cognitive systems that produce religious beliefs track fitness by tracking truth (evolution is an on-track process in this domain). This is conceptually coherent, they will argue, but false. Evolution is, the evidence suggests, an off-track process with respect to religious beliefs.

As an analogy, zebras' long legs are adaptations for speed in escaping from predators, though selection has only optimised zebra legs for running subject to constraints which impose limits on how long they may grow. Thus zebras can run fast, but not so fast that they are never caught by predators. Their legs are not perfectly optimal for escaping from predators; but escaping from predators is still the function of their long legs. It's just that their legs are only as long as zebras can afford them to be, given their other needs, limitations on resources, physical constraints, and so on. Similarly, our cognitive systems plausibly have generating true beliefs as their function, yet are only as reliable as we can afford them to be.

Griffiths and Wilkins write:

> …many of the best known human failures of rationality can be understood as heuristics that sacrifice being right all the time for being right most of the time at a greatly reduced cost. A heuristic is a method for obtaining truth which does not guarantee a correct answer every time, but which gets it right often enough that there is no point in adopting a more reliable but more costly method. A heuristic is not a method for obtaining something other than truth (2015, 210).

They conclude:

> …the evolutionary optimum of 'truth-tracking' should be defined as obtaining as much truth and as little error as possible, given the intrinsic trade-offs between these two, with the balance between them determined by the value of the truths and the cost of the errors, and with possible solutions constrained by the cost of cognitive resources. This can be put in the form of a slogan: Organisms track truth optimally if they obtain as much relevant truth as they can afford, and tolerate no more error than is needed to obtain it. We propose that with this definition of truth-tracking it is overwhelmingly likely that commonsense beliefs are produced by cognitive adaptations that track truth. (2015, 213)

They don't say so explicitly, but this framework gives them a way of responding to the classic cases of unreliable, apparently non-truth-tracking cognitive mechanisms that have been favoured by selection.[17] Their claim will be that the generation of true beliefs is still the aim/function of those systems, but that given that certain constraints

[17] 'Positive illusions', which, as Griffiths and Wilkins note, are an example debunkers offer of potentially fitness-enhancing false belief in humans, are going to be hard to deal with in the same way. We tend, it has been empirically shown, systematically to overrate our own intelligence, attractiveness, abilities and prospects (2015). This seemingly has an evolutionary rationale; people with unrealistically positive views of themselves are generally happier and possess the confidence and self-assurance required to succeed in various tasks. It is hard to interpret this phenomenon in terms of constrained truth-tracking. It is not true beliefs about oneself that are being aimed at here, but *useful* beliefs – beliefs that increase one's self-confidence and so on. Such beliefs will be adaptive *irrespective* of their truth value. Of course, the beliefs may *be* true – one may in fact be accurately estimating one's abilities etc. But the point is that what makes the beliefs adaptive is that they cast one in a favourable light, *whether or not* this fits the facts. In other words, this is an off-track process.

There are of course other examples of false beliefs that are pragmatically useful, or, more precisely, beliefs whose pragmatic utility is independent of their truth. Any time it is suggested that the production of such beliefs is an evolutionary adaptation there will be a case that is difficult to deal with using Griffiths' and Wilkins' framework. Their own evolutionary debunking arguments about religious and moral beliefs are similar to these cases.

are operating, the systems may in fact give rise to true beliefs relatively rarely. So an ultra-cautious predator-detection system, which generates the belief 'that's a predator' in response to any stimuli that could conceivably be interpreted as a predator, will be generally unreliable, in that it will give rise to false beliefs more often than true ones. But the *purpose* of this system is still to generate true beliefs of the form 'that's a predator', and the explanation for why the system has evolved is that it has generated this belief on enough occasions when a predator has actually been present to successfully preserve the genes responsible for the mechanism. So the mechanism is still truth-tracking; it's just that the constraints on predator-detection systems are so severe (given the massive asymmetry in the consequences of error with respect to the beliefs 'that's a predator' and 'that's not a predator') that the relatively small amount of truth they are capable of supplying is the maximum amount the organism can afford.[18] Taking the time to inspect more closely whether the looming figure really is a predator would generate more truth, but at far too high a cost. The ultra-cautious system is as reliable as the organism can afford it to be, which, in this case, is not very reliable.[19] Indeed it is only in terms of its truth-tracking capacity that we can explain the existence of the mechanism. The reason it exists is that it gets things right when it counts, even if it gets things wrong the majority of the time. If it wasn't for its ability to get things right when it counts we'd have no way of accounting for its existence. This is of course recognised by the debunkers; Griffiths and Wilkins' point is that systems may have the property of generating false beliefs most of the time, yet still count as 'truth-tracking', once it is understood that this means 'truth-tracking relative to constraints'.

The same will be true of Stich's widely discussed example of evolved inferential processes in rats (1985). Researcher John Garcia fed distinctive-tasting food to rats and then subjected them to sickness-inducing radiation. The rats developed an immediate aversion to the distinctively flavoured food. Further experiments seemed to show that whenever rats experience some kind of sickness following exposure to a novel food source, they have an evolved tendency to associate the food with the sickness, and henceforth avoid food of that flavour. This strategy of associating sickness with novel food has clearly been selected for, yet it seems quite unreliable. Rats presumably incur illnesses from a wide variety of sources in the wild, and much of the time, perhaps most of the time, the association that is made between illness and novel food is going to be

[18] Stich (1990) offers the similar example of the adaptive value of caution when it comes to judgments to the effect that some food is not poisonous, given the potential consequences of error, compared to the judgment that some food is poisonous, mistakes with respect to which will have much less serious consequences. An ultra-cautious poison-detection system will likely be favoured by selection over a less-cautious one than generates more truth, but at too great a risk. Again, Griffiths and Wilkins will interpret this in terms of constrained truth-tracking. (Incidentally, although Stich doesn't talk in these terms, this interpretation is, as far as I can see, consistent with what he says, and he would have no reason to deny it. Call it constrained truth-tracking if you like, one could imagine him saying, the central point is about the unreliability. More on this below.).

[19] Thus the mechanism would be favoured over a mechanism that was *too* unreliable. A system which generated the belief 'that's a predator' in response to absolutely every moving object in the organism's field of vision would not be adaptive, as it would cause the organism to spend its entire life running away, leaving little time for anything else. A system which generates more truth than this, but is still cautious, will be favoured over the too-cautious system. The system that evolves will be one that generates as much truth as the organism can afford, no more and no less.

incorrect. Yet, Griffiths and Wilkins will argue, the system that generates these beliefs still has tracking truth as its function. Its purpose is to generate correct associations between food and illness, and the explanation for its existence is that it produces true beliefs about such associations, even though it produces false beliefs a majority of the time. It produces as much truth as the rats can afford. It operates as a rough and ready heuristic that works well enough in helping the rats avoid food poisoning such that there is no need to employ a more reliable but more costly strategy.

Griffiths and Wilkins have shown that the standard (generalised) EDA for commonsense beliefs (SEDA) fails, as the epistemic premise is false:

SEDA
Causal premise. Commonsense beliefs are explained by evolution
Epistemic premise. Evolution is an off-track process with respect to commonsense beliefs.
Therefore
Such beliefs are unjustified.

Evolution is not an off-track process with respect to commonsense beliefs, even those like the ones generated by hyper-sensitive predator detection systems. Their contribution to fitness *does* depend on getting at the truth. The system contributes to fitness by getting things right when it counts, subject to constraints. So it's not the case that evolution produces such beliefs in a manner that is not sensitive to whether those beliefs are true.

4 A pyrrhic victory?

This is an important result. But in the context of arguments about scepticism, it is, I want to argue, something of a pyrrhic victory. Griffiths and Wilkins may have shown that truth-tracking is the function of cognitive systems, in humans and maybe other animals, which generate commonsense beliefs (or proto-beliefs). However cases like the predator-detection system, or the beliefs of the rats, seem to show that systems whose function is the production of true beliefs can nonetheless be highly unreliable, when they are subject to exacting constraints. And with respect to the truth of *our* commonsense beliefs, this may be all the sceptic requires. Our commonsense-belief producing systems may aim at the truth, but if they are anything like the predator-detection systems, they will produce truth only relatively rarely, and this would seem to vindicate scepticism about our commonsense beliefs. In order to defeat scepticism, it is not enough to show that the relevant cognitive systems have tracking truth as their function. It must also be shown that in us, the systems are more reliable than the sort of systems that have been highlighted by the debunkers. Griffiths and Wilkins do seem to think this is the case—they note that the heuristics exemplified in human reasoning do get things right 'most of the time' (2015, 210). They are not perfectly reliable—perfectly reliable systems would be too costly, and would be unnecessary—but they only lead us astray occasionally. Yet their arguments do not establish this. They at times seem to suggest that all they need to establish to defeat scepticism is that 'it is overwhelmingly likely that commonsense beliefs are produced by cognitive adap-

tations that track truth' (*ibid*, 213). The issue however is *how reliable* truth-tracking cognitive adaptations are in humans. They note that 'to defeat evolutionary scepticism, true belief must be linked to evolutionary success in such a way that evolution can be expected to produce organisms which have true beliefs' (*ibid*). But, again, the question is what proportion of the organisms' beliefs can be expected to be true (Lemos 2007, 206–207). We can suppose that they mean something like '…produce organisms which have *mostly* true beliefs.' But again, their arguments do not appear to establish this. Cognitive systems can track truth without being reliable enough to supply the organism with mostly true beliefs.

I suggested that Griffiths and Wilkins have shown the SEDA is unsound. But we can replace the epistemic premise in SEDA with a different epistemic premise, to generate the same sceptical conclusion:

Revised EDA (REDA):

Causal premise. Commonsense beliefs are explained by evolution
Epistemic premise. Even if evolution is an on-track process with respect to our commonsense beliefs, we have no reason to think that evolution has equipped us with cognitive systems which are reliable with respect to commonsense beliefs.
Therefore
Our commonsense beliefs are unjustified.

It might be objected that this sceptical line of argument involves illegitimately generalising from a few examples (the predator-detection system etc.) to our commonsense beliefs as a whole. But this response overlooks the dialectical situation. The argument is not that beliefs of this kind are apt to be false, therefore all or most of our commonsense beliefs are apt to be false. The examples are offered in the context of Griffiths' and Wilkins' claim that establishing that our commonsense belief-generating cognitive systems have been selected for truth-tracking undermines the debunking project. The examples are intended to show that systems that have the function of tracking truth need not be reliable systems, so it's not enough to defeat scepticism to show that the relevant systems have this function.

Indeed, setting these examples aside, it is a familiar point that a trait may have a particular proper function, and be an adaptation for that function, even though it performs that function only rarely. On the etiological or 'selected-effects' account of biofunctions, which Griffiths has helped to develop and defend (Griffiths 1993), the proper function of a trait is the effect that (some) tokens of the trait have which explains why there was selection for that trait, even if, as a matter of fact, tokens of the trait fail to perform the function much or most of the time. As Neander writes, on the selected effects account, 'there is the possibility of malfunction because the selected functions of present tokens depend, not on the current dispositions of individuals but on past selection operating on ancestral traits. For the same reason, such malfunction could become typical in the present population.'[20] (Neander 2017, 1152). To cite a classic example of Millikan's, the proper function of sperm is to fertilise the ovum, even though the chances of any particular sperm doing this are vanishingly

[20] We may not want to call every case of a trait failing to perform its function a case of malfunction. A trait may fail to perform its function because the environment is abnormal, or it is not given the opportunity, or for some other 'blameless' reason (Neander 2017, 1152).

small (Millikan 1984). Thus Millikan points out that beliefs may have the biofunction of accurately representing the world even when they are false. In that case they are malfunctioning—failing to perform their evolutionary function. But the function remains the same, deriving from a history of selection. And a cognitive system that generates beliefs—say our commonsense beliefs—may have the function of generating true beliefs even if many or even most of the beliefs it generates are in fact false. Claims about the evolutionary function of cognitive systems in and of themselves, in other words, are just too weak to get us conclusions about reliability.

To summarise the argument so far. Griffiths and Wilkins' response to the debunking sceptics is to point out the conceptual error of thinking that fitness-tracking and truth-tacking are rival accounts, and to show that systems may have the function of tracking truth, but do this imperfectly due to constraints. But this does not dispel the threat of scepticism. Systems may track the truth, and this may be their function, but they may still be unreliable. The sceptics point out that selection will often favour unreliable cognitive systems, and Griffiths and Wilkins do not deny this. They just add that such systems may still have the function of tracking truth. Unreliability is a result of constraints on truth-tracking, not of selection for something other than truth-tracking. But the unreliability itself has not disappeared.

Recall their ESA for commonsense:

Causal premise. Commonsense beliefs are explained by evolution
Epistemic premise. Evolution is an on-track process with respect to commonsense beliefs
Therefore
Our commonsense beliefs are justified.

The conclusion does not follow from the premises: even if evolution is an on-track process in the sense that it generates beliefs that track the truth, it doesn't follow that our commonsense beliefs are justified.

The following argument may be cogent:

ESA*
Causal premise. Commonsense beliefs are explained by evolution
Epistemic premise. Evolution is an on-track process with respect to commonsense beliefs
Therefore
Our commonsense belief-forming systems have truth-tracking as their aim and function.

Yet the conclusion is, as we have seen, too weak to do the anti-sceptical work Griffiths and Wilkins want it to do.

At may help at this point to consider Quine's classic statement of the evolutionary supporting argument. When wondering whether our native inferential processes are reliable, he says, '(t)here is some encouragement in Darwin… Creatures inveterately wrong in their inductions have a pathetic but praiseworthy tendency to die before reproducing their kind' (Quine 1969, 126). It can be understood as the following modus tollens:

Quinean ESA (QESA):

P1. If our commonsense beliefs were not on the whole true and our inferences not on the whole reliable, we would not have been evolutionarily successful.[21]
P2. We have been evolutionarily successful.
C. Our commonsense beliefs are on the whole true and our inferences are on the whole reliable.

The Stichian response is that P1 is false. One way of rejecting P1 is by way of SEDA, with its counterposing of truth-tracking and fitness-tracking, i.e. a creature's beliefs need not track the truth, and its cognitive systems need not have truth-production as their function, in order for those beliefs and processes to be fitness-enhancing, given natural selection cares about fitness, not truth. This has perhaps been the standard response. Griffiths and Wilkins have shown why this way of rejecting P1 fails. But one can reject P1 without endorsing SEDA. Even if cognitive systems, other things being equal, need to track the truth about their environments to be fitness enhancing, such that it is extremely likely that evolutionarily successful species whose members are capable of relatively sophisticated mental representations, and have invested any resources at all in cognition, have such systems, these systems may still be unreliable, i.e. get at the truth rarely, if the constraints on truth-tracking are severe enough. Thus P1 in the above argument is false, or at the very least we ought to suspend judgement about it. In other words the Stichian line can be interpreted in two ways: the standard way, which Griffiths and Wilkins have refuted, and the revised way, which they haven't.

Of course, as with ESA*, if we interpret the Quinean argument in the following way, it may be sound (following Griffiths and Wilkins I am endorsing P1):

QESA*

P1. If our commonsense belief-generating cognitive systems did not have truth tracking as their function, we would not have been evolutionarily successful.
P2. We have been evolutionarily successful.
C. Our commonsense belief-generating cognitive systems have truth tracking as their function

I am happy to endorse this, at least for the sake of argument. The problem is, as with ESA*, the conclusion is too weak to give us the anti-sceptical outcome we desire. But if we strengthen the conclusion in line with ESA, the argument becomes invalid:

QESA**:

P1. If our commonsense belief-generating cognitive systems did not have truth tracking as their function, we would not have been evolutionarily successful.

[21] If the notion of evolutionary success at the species level is thought to be problematic (what could it mean exactly?), there may be a way of interpreting Quine's argument so that it doesn't rely on it. Whether or not our species counts as evolutionarily successful on the relevant criteria, Quine may argue, we know that present-day humans are the product of an extended evolutionary process governed by natural selection. Thus we would expect current humans to be good at thinking and reasoning, and to have true beliefs about their environment, because these traits are presumably adaptive in a large-brained, cognitively sophisticated species—past humans who did not have these traits would've had (on average) low fitness, and would have been less likely to pass on their genes. In that case the work is really being done by the assumption that true beliefs and reliable inferences are adaptive, not by any kind of inference from species success. I have nonetheless interpreted the argument as an inference from species success because this is a natural reading of it, and because it preserves the connection with the IBE version of the argument I discuss below, which unequivocally is an inference from species success.

P2. We have been evolutionarily successful.
C. Our commonsense beliefs are on the whole true and our inferences are on the whole reliable.

Arguments connecting success with truth are often interpreted as inferences to the best explanation (IBE) (e.g. Devitt 1991, 97–99). The model here is the success-of-science argument for scientific realism, which claims that the best or only explanation for the empirical, methodological and technological success of science is that scientific theories are true or approximately true (Griffiths and Wilkins 2015, 204). An ESA in the form of an IBE would be:

ESAIBE:

P1. Our species has been evolutionarily successful.
P2. Part of the best explanation for our evolutionary success is that our commonsense beliefs are largely or entirely true.[22]
C. Therefore our commonsense beliefs are largely or entirely true.

The weakness in this argument can be brought out by comparing its second premise with the corresponding explanatory premise in the IBE argument for scientific realism. This argument is often called the 'no miracles' argument, the idea being that if our scientific theories were not true or approximately true, the success of science would be a miracle. But, for reasons we have discussed, it would not require anything miraculous for creatures with largely false beliefs to have high fitness, or for the species they belong to to be evolutionarily successful.[23] Of course, Griffiths and Wilkins may argue that it would be a miracle (or at least extremely surprising) if the members of cognitively sophisticated species that are evolutionarily successful did not have cognitive systems whose purpose is to track the truth:

ESAIBE*

P1. Our species has been evolutionarily successful
P2. Part of the best explanation for our evolutionary success is that we have cognitive systems whose purpose is the track the truth.
C. We have cognitive systems whose purpose is the track the truth.

But again, even if this argument is cogent, the conclusion falls short of defeating the sceptic.

5 Justification vs explanation

How then do we get from truth-tracking to reliability? Perhaps Griffiths and Wilkins have something like the following in mind. We have reason to think that human reasoning, while not infallible, is much more reliable than, say, the predator-detection systems discussed above. Human cognitive systems can obtain a much greater amount

[22] It is only 'part of' the best explanation; it would be bizarre to claim that the *entire* explanation for our evolutionary success is that our commonsense beliefs are true.

[23] This is also the response some anti-realists have made to the argument for scientific realism. Famously, Laudan (1981) offered a number of examples of false, but highly empirically successful, theories from the history of science, to call into question the inference from success to truth.

of truth, and need tolerate much less error, than the cognitive systems of other species. Our evolutionary trajectory has been one in which we have invested a far greater amount of resources, relatively speaking, in cognition, and in truth-tracking, at the expense of other biological functions, than is the case in other species. This allocation of resources has been optimal in our species, given our ecological niche, our needs and capacities, and so on, while in other species the optimal allocation of resources to truth-tracking has necessarily been much more limited. Thus, while truth-tracking is constrained for us, it is much less constrained than in other species. We can 'afford' much more relevant truth than can other species. This is a possible line of argument, but it is no more than hinted at in Griffiths and Wilkins' papers, and it remains rather speculative. We simply don't know how powerful the constraints on truth tracking have been in our lineage. A more effective strategy than trying to patch up the ESA (and respond to REDA) along these lines might be to forego the ESA entirely, that is, forgo the project of offering evolutionary *justifications* for the truth of our beliefs. Even if we do this however, evolutionary considerations may play an *explanatory* role elsewhere in the argument.

In order to see how this would work, it will be helpful to consider an approach that has much in common with Griffiths' and Wilkins', but differs from it in crucial ways. Hilary Kornblith, over a number of publications, has pursued an evolutionarily-informed project of naturalistic epistemology that is broadly congenial to naturalistic anti-scepticism. In his (1995), he has a similar anti-sceptical agenda to Griffiths and Wilkins, in seeking to reply to those who would draw pessimistic, sceptical conclusions from the psychological literature on human failures of rationality. Kornblith is responding to some of the same people as Griffiths and Wilkins, but he is not responding to evolutionary debunking arguments per se. He is responding simply to the claim that the psychological literature ought to undermine confidence in the ability of humans to reason well, draw good inferences etc. Kornblith, like Griffiths and Wilkins, uses the idea of a heuristic to defuse sceptical worries about human reasoning and beliefs.[24] But, firstly, he is explicitly defending a reliability thesis, not a function thesis. Secondly, he does not appeal to evolution to support his anti-sceptical conclusion.

Kornblith's basic claim is that human reasoning can be seen to embody certain innate rules of inference, such as the 'law of small numbers' (this is the ironic name given by Tversky and Kahneman to the widespread tendency of people to draw inferences about a population from very small samples), which work well most of the time as a result of the fact that they presuppose, as it were, that the causal structure of the world is a certain way, and it is in fact that way. So the law of small numbers presupposes the world is structured into natural kinds with properties that cluster together, and thus in a world which really is structured into natural kinds, as Kornblith believes our world to be, this rule of inference works well. But it is not infallible—in certain circumstances it will lead us astray. It is a heuristic—a method of forming beliefs that is not perfectly reliable, but that gets it right enough of the time to make the use of more reliable but more costly methods unnecessary. It is thus analogous to the way our visual system builds in certain assumptions about the way the world is which greatly

[24] Griffiths and Wilkins defend the heuristic interpretation of human fallacies and biases on p. 210.

aid the processing of visual information, and which generally serve us well in normal environments, but that can lead us astray when the environment is abnormal, as is the case with the various well known visual illusions. The law of small numbers is thus not, as is commonly supposed, a fallacy—it is rather a cost-effective method of obtaining truth employed by organisms with limited time and resources, and one that works well enough often enough to justify the cost involved when it leads to error.[25]

> Just as our perceptual mechanisms are well adapted to the environment in which they typically operate and build in presuppositions about the environment which are typically true, so our inferential mechanisms may also be built around presuppositions about standard environments which allow us to gain information about those environments both quickly and accurately. (Kornblith 1995, 86)

Kornblith accepts that the *explanation* for why we tend to reason in ways that are tailored to the causal structure of our world is that our minds and cognitive capacities are the product of evolution by natural selection. However he explicitly disavows the sort of evolutionary argument for anti-scepticism that Griffiths and Wilkins put forward.[26] He doesn't offer any kind of ESA. Although he holds that evolution can *explain* the good fit between our minds and the structure of the world once this has been independently established, he thinks that the sort of examples Stich made famous (examples where evolution has apparently instilled unreliable cognitive processes) undermine any attempt to use evolution to *justify* anti-scepticism.

It may be wondered whether the sharp distinction Kornblith is drawing between the justificatory and the explanatory projects is all that sharp. Do the projects perhaps stand and fall together? If evolutionary theory can explain the good fit between our beliefs and inferential tendencies and the world, why can it not help to justify our belief in it? And conversely, if the justificatory argument fails, why doesn't the explanatory argument fail for the same reasons? Stich and others have tried to sever the connection between evolutionary fitness and reliability. If Kornblith is persuaded by their arguments, as he claims to be, one may wonder what role evolution could play in his explanation for reliability. And, conversely, if evolution is the explanation for reliability, we seem to have restored this connection, in which case it's not clear why it is illegitimate to attempt to justify belief in reliability on the basis of evolution.

Kornblith's idea seems to be that the lesson of the Stichian arguments is that it is no *prediction* of evolutionary theory that our cognitive systems will tend to yield a preponderance of true beliefs. It doesn't rule this out, but it doesn't imply it either. Evolution can favour reliable systems, and it can favour unreliable systems, depending on the circumstances, thus appealing solely to evolutionary theory one cannot support the claim that any particular set of cognitive adaptations will be reliable. 'There are good reasons for doubting that evolutionary processes need inevitably provide us with an accurate understanding of the world' (1995, 3). However we may be able to independently establish that, as Kornblith puts it, 'our psychological processes dovetail with

[25] Kornblith's interpretation of the law of small numbers has anti-sceptical implications since he regards this inferential tendency as not just truth-tracking, but *reliable* in a world (such as ours) structured into natural kinds. That is, it generates true beliefs a majority of the time in normal environments.

[26] In the Introduction to (1987), he appears to endorse an evolutionary supporting argument, similar to QESA. See Lemos (2007, 204–207) for discussion. He is more circumspect in his (1995).

the causal structure of the world' (*ibid*). This calls for an explanation—'it is surely no coincidence' (*ibid)*—and the only conceivable naturalistic explanation is evolution by natural selection, which (the Stichian arguments allow) *can* produce reliable systems in certain lineages under certain conditions. Thus evolution can explain, but cannot and need not justify, the truth of our beliefs and the reliability of our inferences. This view would appear to be coherent and well-motivated.

Kornblith is concerned with aspects of the reliability of our native inferential processes that are somewhat removed from my concerns, so the details of his argument will not be directly applicable to my topic. Yet his overall strategy can be adopted: Kornblith recommends we first establish the good fit between human cognition and the world, independently of evolutionary considerations.[27] This allows us to bypass all the worries about the problematic nature of inferences from evolutionary theory to truth and reliability. Then, once this good fit has been established, we can *explain* it by appealing to evolution. Call the view that evolution can explain the good fit between our beliefs and the world 'naturalistic explanatory anti-scepticism'.[28]

6 The Moorean approach

How, then, do we establish the truth of our commonsense beliefs independently of evolutionary considerations? The answer is hinted at by Griffiths and Wilkins themselves, when they note that the kind of commonsense beliefs at issue are the ones whose 'subjective certainty' Moore famously appealed to. The Moorean defense of commonsense beliefs (Moore 1925) involves the claim that they do not stand in need of special philosophical justification. They are subjectively certain, we know them to be true, and we know that we know them to be true. The Moorean response to sceptical arguments is, then, to assert that we know the anti-sceptical claim better, more securely, than we know any premise in an argument to its negation. Sceptical arguments will always proceed on the basis of philosophical assumptions that are at least somewhat controversial. If the sceptic argues:

CP (controversial philosophical claim)
If CP then S (sceptical claim)
Therefore S

it is always open (given one accepts 'If CP then S') to respond with the argument:

If CP then S
Not S
Therefore Not CP

Moreover, the second argument will be much stronger than the first, if Not S is more securely known than CP, which we are assuming.

[27] Kornblith argues that our primary reason for thinking that there must be this good fit between our cognition and the world is the success of science. I do not wish to follow him in this, which indicates a point at which my argument diverges from his.

[28] This explanation of true beliefs in terms of evolution is of course to be sharply distinguished from the explanation of evolutionary success in terms of true beliefs, which as we have seen is a type of ESA.

We have seen that this is Plantinga's response to the following debunking argument:
If Naturalism (N) then Scepticism (S)
N
Therefore S

He offers the following argument in response:

If N then S
Not S
Therefore Not N[29]

He argues, not unreasonably, that Not S is more secure than N, so *if* we accept the conditional premise, we must reject N. That is, if naturalism is in conflict with commonsense beliefs, naturalism must be abandoned.

But, of course, one may instead reject the conditional premise. In the above argument, if one accepts CP, but rejects S, obviously one has to reject 'If CP then S'. In response to the sceptical argument from naturalism, Griffiths and Wilkins (and others) reject 'If N then S'. Naturalism does not entail scepticism. This allows them to accept naturalism and reject scepticism.

The above approach (which I have called Moorean) of interpreting debunking arguments as involving reasoning to an absurd sceptical conclusion, such that at most they present a challenge to determine which premise in the argument is false and why, is consistent with Griffiths and Wilkins' approach.[30] But the Moorean defense of commonsense also involves, I suggested, the idea that aside from diagnosing the errors in sceptical arguments, there is no further need to *positively justify* commonsense beliefs. In particular, evolutionary arguments attempting to vindicate our commonsense beliefs are both unnecessary and misguided. According to the Moorean, commonsense real-

[29] If we take the debunking argument to be SEDA:

Causal premise. Commonsense beliefs are explained by evolution.
Epistemic premise. Evolution is an off-track process with respect to such beliefs.
Therefore
Such beliefs are unjustified.

Plantinga would respond by rejecting the causal premise, accepting the epistemic premise. Griffiths and Wilkins, as we have seen, accept the causal premise and reject the epistemic premise. Plantinga, in effect, offers the following argument:

P1. Evolution is an off-track process with respect to commonsense beliefs.
P2. We know that our commonsense beliefs are true.
C. Our commonsense beliefs are not explained by evolution.

[30] Coady offers a similar Moorean response to EDAs with respect to morality (Coady unpublished manuscript), such as those that Joyce defends. I am less persuaded of the viability of the Moorean response in this domain. By 'commonsense beliefs' I, and Griffiths and Wilkins, mean non-evaluative beliefs about everyday, ordinary objects and states of affairs in our environment, cast in the language of our commonsense conceptual scheme. Moral beliefs would not fall into this category, even though, of course, 'you shouldn't torture babies for fun' is a moral belief that could be classed as 'commonsense' (as, indeed, in some communities, could religious beliefs like 'God exists'). The Moorean tradition of defending commonsense, as I understand it, is restricted to beliefs of the sort I am referring to ('I have two hands' etc.), and doesn't typically extend to defending commonsense moral, or normative, beliefs, or beliefs about other domains. Thank you to an anonymous reviewer for encouraging me to clarify this point.

ism is *easy*—we all already believe it, we know that it is true, and nothing could make us abandon it. This suggests that the approach of trying to refute the sceptic by offering evolutionary *supporting* arguments has made a mistake by engaging in the argument in this way in the first place. It is trying to refute the sceptic on her own ground, on the ground where we are suspending (or suspecting) commonsense beliefs, and then trying to find arguments to support such beliefs. The anti-sceptic should just refuse to play this game. We don't need evolution to support the truth of our commonsense beliefs. We *know* (and know that we know) that there are tables and cats and people, that people and cats have legs, etc.; (we know that) the fact that there are tables and cats etc. entails that our beliefs that there are tables and cats etc. are true; therefore (by closure of knowledge under known logical entailment), we know that our beliefs that there are tables and cats etc., are true. Thus we know that our commonsense beliefs are largely or entirely true.

This is not to say that there is no answer to the question, 'how, or in virtue of what, is B justified?', where B is some commonsense belief. In general there will be an answer to this question. Rather, the Moorean insists that *we don't need to answer this question to know that B is justified, and to know that we know that B.* As Lemos notes, '(j)ust as one might know that some act is wrong without knowing what makes it wrong, so too one might know that one's belief is knowledge or justified without knowing what makes it so' (2007, 173).

But, as I noted, once we set aside the question of justification, there might still be a question of explanation. *Why* do we have largely true commonsense beliefs? Why is there this good fit between our beliefs and the world? It is here that evolution can and should be invoked. This latter explanation may in fact give Griffiths and Wilkins, and other naturalistic anti-sceptics, all they want: we conclude that evolution has, in fact, produced commonsense beliefs that are largely or entirely true. But it gives us a way of establishing that without the questionable evolutionary *justification*, i.e. the questionable ESAs.

We now have way of responding to REDA.

REDA:

Causal premise. Commonsense beliefs are explained by evolution.
Epistemic premise. Even if evolution is an on-track process with respect to our commonsense beliefs, we have no reason to think that evolution has given us cognitive systems which are reliable with respect to commonsense beliefs.
Therefore
our commonsense beliefs are unjustified.

The epistemic premise can be rejected once we have our evolutionary explanation of the truth of our commonsense beliefs in hand. The reason we have for thinking that evolution has produced commonsense belief-forming systems in humans which are reliable is (a) that we know that our commonsense beliefs are largely or entirely true, and (b) our having true commonsense beliefs is explained by evolution.

I admit that one has the vague feeling there is something fishy about, on the one hand, claiming that we know that our commonsense beliefs are true and that this is so obvious it needs no special justification, and on the other, that our having true commonsense beliefs is a surprising and striking fact calling for a scientific cum philosophical

explanation. But it is not clear to me whether or how these vague misgivings can be translated into an actual argument.

Firstly, some facts are known beyond any rational doubt to be true, yet still count as striking facts crying out for explanation. As an analogy, we know that peacocks have relatively large, brightly coloured tails. We know it by ordinary perception. There is no further need for a justification for this belief; only a radical sceptic would deny it. We would not and should not invoke evolution to *justify our belief* that it is so. But given it is the case, there remains the question of explanation. Why do they have large, brightly coloured tails? Here, obviously, evolutionary processes can and should be invoked. It is perfectly familiar that evolution (or something else) may be needed to explain why something that we know beyond any doubt to be true, came to be true.

Secondly, the two theses clearly enjoy considerable independent plausibility. Many philosophers accept the Moorean thesis about commonsense, and many find attractive the idea that we can and should offer an evolutionary account of the cognitive adaptations that produce our commonsense beliefs. I am simply combining these ideas, and asserting that there is no obvious logical inconsistency between them. The sense of tension arises from the fact that we are combining two perspectives. From the internal perspective, considering our commonsense conceptual scheme from the 'inside' as it were, we feel the Moorean certainty: it is because this is *our* commonsense framework that it is for all intents and purposes indubitable for us. But when we step back to investigate the relation between the beliefs of *Homo sapiens* and the world, from the 'outside', we begin with the assumption that there is no a priori reason why any particular species should have accurate beliefs about the world, and even if we know it is the product of evolution, there is nothing automatic or inevitable about evolution equipping this species, or any other, with cognitive adaptations that reliably produce true beliefs, and thus the fact that its commonsense beliefs are largely or entirely true (if that is the case), is the sort of thing for which an explanation is required.[31] When we try to adopt both perspectives at once, we naturally feel a sense of disorientation. But it is not clear that this should carry any epistemic weight.

7 Conclusion

We have seen that the evolutionary debunking arguments about commonsense can be turned back. Griffiths and Wilkins have shown why the epistemic premise in SEDA is false, while we have a way of rejecting the epistemic premise in REDA once we have in hand our evolutionary explanation for the good fit between our beliefs and the world. But we have also seen that the various arguments we have considered that attempt to use evolution to support our commonsense beliefs—ESA, ESA*, QESA, QESA*, QESA**, ESAIBE, ESAIBE*—are either unsound, or else do not establish the desired anti-sceptical conclusion. I conclude that the prospects for using evolutionary arguments to either debunk or vindicate our commonsense beliefs (naturalistic scepticism and naturalistic justificatory anti-scepticism) are quite dim, and thus that

[31] Note that the relevant explanandum here is not the truth of the beliefs, but *our having* true beliefs. The explanation for the truth of 'there are cats' is arguably equivalent to the explanation of why there are cats, which is of course not what we are interested in.

naturalistic neutrality is the preferable position. However we have seen that naturalistic neutrality as a response to the debunking and justificatory projects can and should be combined with naturalistic explanatory anti-scepticism, once anti-scepticism has been vindicated independently of evolutionary considerations. And I suggested that the proponents of naturalistic justificatory anti-scepticism lose little in abandoning this view and embracing naturalistic explanatory anti-scepticism, as the latter gives them all that they really want: a rejection of debunking arguments, a vindication of our commonsense beliefs (albeit a non-evolutionary one), and an evolutionary explanation of why our commonsense beliefs are true and the systems that generate them reliable. I do not mean to give the impression that this shift from justification to explanation provides a way of reconciling naturalistic neutrality (with its rejection of ESAs) and naturalist anti-scepticism that will be agreeable to all parties. In particular, some neutralists, such as Downes (2000), offer arguments that, if successful, would undermine not just the evolutionary justificatory project, but the evolutionary explanatory one as well (although it should be noted that I have defined naturalistic neutrality as a view about justification only, so that strictly speaking it is, in itself, consistent with any claims about explanation). I do not have the space to consider such arguments here.[32] My aim is merely to identity the explanatory project, as distinct from the justificatory project, as a possible option for naturalistic anti-sceptics that promises to give them what they desire while avoiding embattled ESAs. Whether the explanatory project will ultimately prove successful, and whether arguments against it such as Downes' can be resisted, remains to be seen.

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[32] For Downes (2000), the whole idea of true-belief generating cognitive mechanisms as evolutionary adaptations is flawed. This is in part because we do not possess an account of truth itself on which the idea can be made good.

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