Darwinian Defeat

What bearing do evolutionary debunking arguments have on non-naturalist moral realism?

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Abstract

In this essay I consider what marginal contribution so-called ‘evolutionary debunking arguments’ make to the case against the meta-ethical view that is non-naturalist moral realism. I first handle the argument that evolution by natural selection has made us disposed to hold the moral beliefs we do, and that this fact removes our justification in those beliefs. I show that this argument fails, because just like we can correct our cultural or emotional biases, we can correct our evolutionary biases using our moral reasoning, and evolutionary considerations have done nothing to preclude this corrective capacity. To test whether there is a case to be made that moral reasoning is too weak to correct for evolutionary influences I consider and improve upon Sharon Street’s argument from improbability using conditional probabilities. I show that worries about the sufficient strength of moral reasoning are misguided, and claim that they constitute a pervasive confusion in the evolutionary debunking debate. I then conclude that evolutionary debunking arguments have not yet added anything significant to the case against moral realism, although they might do so in the future.
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Introduction

Many of us have a strong aversion to the thought of boiling a baby. In fact, we believe it would be a very bad thing to do. It is attractive to think that we hold this belief because we have realized that it is in fact a very bad thing to do. Imagine now that someone told you that the only reason you believe that it would be very bad to boil a baby is because a deity programmed you when you were created to hold this belief. Not only that, but this deity programmed all of humanity to hold roughly similar beliefs about such matters. Worst of all however is that this deity has just distributed these beliefs without any consideration for whether they’re correct or not!

There is a strong feeling that this kind of origin of our beliefs would make us doubt whether they were true, and so we are happy that there are no such deities. Unfortunately, there is something which might be just as bad, which is evolution by natural selection. Using empirical data from the fields of biology and evolutionary psychology some philosophers have argued that we have the moral beliefs we do because evolution has made us disposed to have them, and that such evolutionary explanations have nothing to do with any objective moral facts. In the words of Michael Ruse it would then seem that ‘morality is a collective illusion foisted upon us by our genes’\(^1\).

These arguments are called ‘evolutionary debunking arguments’ (EDAs). EDAs state that our beliefs are products of evolution, and that this fact can give us good reason to doubt that they are true. In this essay I intend to consider the bearing that EDAs in general have on the beliefs of adherers to the metaethical view called non-naturalist moral realism, which is the view that there are mind-independent moral facts which are not reducible to any natural properties. In other words, it is the view that boiling babies is wrong no matter what anyone thinks about it, and what makes that true is some sui generis non-natural fact.

Being a moral realist of this kind isn’t easy. Against realism there are arguments from queerness, supervenience, causal ineffectivity, motivation, explanatory superfluity and a general ‘incredulous

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\(^1\) Ruse (1986, p.253)
stare’. My objective in this discussion is not to defend moral realism against such objections. Rather my aim is to determine whether EDAs create any further problems for moral realism over and above such objections, and thereby make the life of the moral realist harder than it already is. To put it clearly, this is the question of the essay:

*What marginal contribution do evolutionary debunking arguments make to the case against non-naturalist moral realism?*

This is a pertinent question, as EDAs appear to allow science to have bearing on an otherwise abstract and often stagnant debate between moral realists and anti-realists. In attempting to answer it I will consider the arguments from several ‘evolutionary debunkers’ which have featured prominently in the literature on moral realism in the last few years\(^2\), though less so than the numerous responses to them\(^3\). In the essay I have attempted to make the strongest possible case for evolutionary debunking to make sure that any successful defence for the realists is not only apparent. I hope the reader will find my treatment of the arguments as fair as I have intended.

Here is a brief outline of the essay. In part 1 I make clear some background assumptions relating to the debate, and then provide an account of the epistemology of debunking which I refer back to in later parts of the discussion. In part 2 I consider what I call the argument from *explanatory superiority*, which attempts to show that evolution provides the best available explanation for our moral beliefs, and that this fact provides a moral realist with defeaters for her moral beliefs. I argue that this argument fails because it doesn’t provide a moral realist with any new reason for why she cannot receive justification in her beliefs from rational moral reasoning. In part 3 I consider what I call the argument from *improbability*. This much discussed argument is given by


Street, and aims to establish that the realist’s moral beliefs are unjustified because the pervasive influence of evolution implies that it would be huge coincidence if they were true. I evaluate Street’s argument and argue that while it has received unfair criticism it suffers from controversial commitments in probability theory. I then develop the argument to test the intuitive suggestion that our moral reasoning is too weak to correct for the pervasive influence of evolution, and show that this worry is only apparent. I conclude that EDAs have so far not had any substantial bearing on moral realism, but that they could have in the future.
1. Setting Up

1.1. Initial remarks

In this essay I evaluate the impact of EDAs on the meta-ethical position called *non-naturalist moral realism*. I take this to be the view that moral claims are propositions, some of which are true, and whose truth-values are determined in virtue of mind-independent and irreducibly non-natural facts. This description makes non-naturalist moral realists distinct from non-cognitivists, who deny that moral claims are propositions; error-theorists, who claim that no moral claims are true; constructivists, who hold that moral facts are mind-dependent; and naturalist moral realists, who hold that moral facts are reducible to natural facts. What distinguishes non-natural from natural facts is not universally agreed upon. I take an entity to be non-natural if and only if it is causally inefficacious, which I believe to be a sufficiently uncontroversial definition.

The reason that I consider only non-naturalist moral realism is that I believe it is an independently more defensible position, but one which is more exposed to EDAs than naturalism in virtue of holding that moral facts are causally inefficacious. I also believe any successful defence of non-naturalism could be used for naturalism, in which case a focus on non-naturalism doesn’t constrain the general applicability of my arguments. Whenever I write ‘moral realism’ from here I intend ‘non-naturalist moral realism’ unless otherwise specified.

Let us clarify some aspects regarding EDAs. The purpose of debunking is to remove the justification of beliefs. In the case of EDAs as applied to moral realism, they are intended to show that a moral realist is unjustified in her first-order moral beliefs. In other words, EDAs aim to establish that moral realism as an ontological view implies moral scepticism as an epistemological view. Though EDAs thereby do not target moral realism as such, successfully

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4 The position I have in mind is held by e.g. Moore (1903), Sidgwick (1907), Ross (1930), Nagel (1986), Audi (1997), Shafer-Landau (2003), Huemer (2005), Enoch (2011), Parfit (2011) and Scanlon (2014).

5 See Shafer-Landau (2003, pp.98-114) for a discussion on this.
showing that moral realism implies moral scepticism might decrease the plausibility of moral realism. This is how EDAs can have bearing on moral realism.

Some EDAs are claimed to apply equally to constructivism as to moral realism\(^6\), while as others are claimed to apply only to moral realism, leaving constructivism intact\(^7\). As mentioned, I consider only their impact on moral realism irrespectively. Similarly, some arguments make clear that they apply to normative beliefs in general, of which moral beliefs are a subset\(^8\). Here I will only consider their impact on moral beliefs, leaving it unsaid whether they have any independent bearing on non-moral normative beliefs.

Finally I would claim that in order for something to be an evolutionary debunking argument it has to require some empirical claim from biology or evolutionary psychology in order for its conclusion to obtain. In order for an EDA to have some marginal bearing on moral realism it cannot rely on other arguments which are independently sufficient to establish the same conclusion against moral realism. Otherwise the ‘evolutionary debunking’ component becomes superfluous. I therefore require that any EDA should satisfy the following criterion:

**The Marginal Contribution Requirement**

An EDA has bearing on moral realism only if it does not have as a premise an argument which is not evolutionary debunking yet is independently sufficient to establish the conclusion of the EDA.

1.2. The epistemology of debunking

Evolutionary debunking arguments are a subset of ‘debunking arguments’. Debunking arguments are in the business of showing that their target’s beliefs are unjustified\(^9\). What makes them ‘debunking’ is that they aim to do this by showing that the origins of those beliefs removes the target’s justification in believing them. Consider the following example:

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\(^6\) E.g. Ruse (1986) and Joyce (2001; 2006).
\(^7\) E.g. Street (2006) who is a constructivist herself.
\(^8\) E.g. Street (2006).
\(^9\) While this is the orthodox claim, some (e.g. Wielenberg 2010) take debunking to be about undermining knowledge. On a ‘justified true belief’ account of knowledge however, the same conclusion obtains.
Thermometer: I believe that it is 37 degrees outside solely because I read it on the thermometer. Someone then points out to me that the thermometer is stuck at 37.

When I learn that my belief is a product of a broken thermometer, it seems that I am no longer justified in believing that it is 37 degrees outside. This explanation of my belief provides me with undercutting defeaters for my belief. What does this mean? For a belief to be defeated by a defeater just means that it ceases to be justified. An undercutting defeater is however to be distinguished from a rebutting defeater. An undercutting defeater removes the grounds for our belief, such as when I learn that the thermometer is broken, while a rebutting defeater gives us grounds to believe its negation, such as if someone trustworthy told me that it was 15 degrees outside. Debunking arguments are concerned only with undercutting defeaters, and from here on when I write ‘defeaters’ I intend undercutting defeaters.

When exactly is someone’s belief debunked? This is when the believer is made aware of the origins of her belief. There is some complication to this phrasing however. We might have good reasons to believe that something is the origin of our belief, but be wrong. To be ‘made aware of the origin’ seems to imply that what we are made aware of is true, and we are rarely – if ever – in a position to conclude this. What we are interested in is whether we are justified in believing that something is the origin of our belief. An intuitive way to conceptualize this is to say that we are justified in believing that something is the origin of our belief if and only if this is implied by the best explanation available to us. In extension this means that our beliefs are debunked if and only if the best explanation of those beliefs available to us implies that they have debunking origins. This can be put in a general form:

10 This distinction is due Pollock (1986).
11 White (2010) considers the possibility of externalist ‘blocking’ defeaters. As everyone else in the debate appear to assume internalist, or what White calls ‘undermining’, defeaters, I will only consider these.
12 This form is a variation of a general debunking argument by Kahane (2011), which is also accepted by Fraser (2014).
**The General Debunking Argument:**

**EXPLANATORY:** E is the best explanation available to A of A's having the belief that \( p \).

**DEFEATING:** If E is the best explanation available to A of A's having the belief that \( p \), then A has defeaters for her belief that \( p \).

**Conclusion:** A has defeaters for her belief that \( p \).

This form of the argument allows us to clarify what the debunker has to do to successfully debunk the target's beliefs. EXPLANATORY captures the need for whatever explanation the debunker requires for her argument to also be the best explanation available to the target. DEFEATING obtains whenever that explanation satisfies the conditions for an explanation to provide defeaters. Jointly they render the conclusion that the target has defeaters for her beliefs. In the discussion that follows I will refer back to the General Debunking Argument to make clear how the evolutionary debunking arguments attempt to close their case\(^\text{13}\).

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\(^{13}\) For more discussions on the epistemology of debunking see e.g. Mason (2010), White (2010), Kahane (2011), Mogensen (2016b) and Vavova (2016).
2. The Challenge from Explanatory Superiority

In this section I consider what I believe to be the most intuitive way for an evolutionary debunker to attempt to debunk the realist’s beliefs. This is by showing that evolution has had a tremendous effect on the contents of our moral beliefs, and that this influence provides the best explanation for why we hold the moral beliefs we do. Such an explanation however would suggest that our moral beliefs are arbitrarily produced by evolutionary forces which do not track the truth of those beliefs, and this fact appears to provide a realist with defeaters for her moral beliefs. I call this the argument from explanatory superiority. This argument is a product of my attempt to construct the strongest possible case for the debunkers by taking the most defensible components from different EDAs.

In presenting the argument I start by making clear the empirical claim that evolutionary forces have influenced our beliefs, and demonstrate why this would be troubling for a realist. I then consider how a realist can respond to this possibility by appealing to the tracking influence of moral reasoning and why debunkers have not been successful in overcoming this defence. Finally I consider how I believe the debunkers should respond, which is to appeal to the ontological parsimony of a purely evolutionary explanation, and why even this argument is insufficient to establish a case against the realist. I conclude that EDAs of this kind don’t add anything new to the case against moral realism.

2.1. The evolutionary explanation of our moral beliefs

Debunkers like Ruse, Joyce and Street argue that evolution explains our moral beliefs. What does this mean, and why should this worry a moral realist? Let us briefly consider the empirical basis for this claim, and then the epistemic implications.

In this essay I consider evolution by natural selection, as opposed to other evolutionary considerations like phylogeny. The theory of natural selection suggests that we explain the existence of traits in organisms functionally in terms of the reproductive advantage they

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14 See Mogensen (2016a) for an EDA from phylogeny.
provide. Birds have wings, fish have gills and humans have thumbs because these are all traits which improve the organisms’ odds of survival in their respective environments. The mechanism allowing this connection is as follows: Random mutation in the genes can produce variations in traits. When some randomly developed trait provides a reproductive advantage it becomes more frequent in the population because its bearers survive and reproduce at a higher rate than non-bearers, and with time this changes the average genotype of the population to one more likely to give rise to the trait. To say that a trait has been selected for, or is an adaptation, is to say that this process has occurred with respect to that trait.

Evolutionary debunking arguments rely on the assumption of evolutionary psychology that like physiological traits can be selected for, so can psychological traits. The specific claim is that our moral beliefs are adaptations, and that this provides an explanation of them. There is here a debate about whether it is only our general capacity to form moral beliefs that is an adaptation, or whether some content of our beliefs has also been selected for. The latter seems to be the claim made by most debunkers, and it is what I will be considering here. The basic claim then is that there has been some evolutionary advantage to holding certain kinds of beliefs. For example, someone who believes that it is laudable to boil their children will inadvertently limit the spread of their genes.

How could certain beliefs be adaptations? Street (2006) suggests that the evolutionary influence is indirect, in that some of our ‘basic evaluative attitudes’ have been selected for which in turn produce a tendency to form certain beliefs. This suggestion corresponds to what Sripada (2008) calls the innate-biases model, which he argues to be the most plausible model of how certain beliefs can be selected for. This is the suggestion that no specific set of norms or beliefs are adaptations, but rather that there has been a selection for certain biases in our evaluative judgments, such that some beliefs and norms have been made more likely to develop than they


15 Joyce’s (2006) claim that our capacity to employ moral concepts being an adaptation is sufficient for debunking is the exception here. I have chosen to consider arguments appealing to content partly as this is the majority position among debunkers, but also because I find it much more plausible and fail to understand how Joyce’s appeal to capacity is supposed to work. This might however be unfair to Joyce, and this aspect of his argument deserves more attention than I am able to give it here.
would have been in the absence of such biases. For example, a classic suggestion of such a bias is called the Westmarck mechanism, which suggests that humans are strongly disposed against being sexually attracted to other humans in adolescence with whom they have grown up, whether or not those are biological siblings. This example has been used to explain the disapproval of incest prevalent across many moral systems\textsuperscript{16}.

How could a debunker provide a similar explanation from selected biases of our more central moral beliefs, such as the laudability of altruistic behaviour? This is a controversial issue. Some claim that we only need an explanation in terms of psychological altruism as an adaptation selected for to promote individually beneficial behaviour\textsuperscript{17}, while as others claim that some appeal to group-selection is required\textsuperscript{18}. We will not settle these issues here, and I will simply assume that there is a good evolutionary explanation of most of our moral beliefs. Any success for EDAs should be seen as a ‘best case scenario’ where such an explanation can be provided\textsuperscript{19}.

Debunkers are not however committed to the implausible claim that we slavishly form our beliefs in response to innate biases, and Street for example makes clear that we as rational beings can critically evaluate which beliefs we hold using rational reflection. The debunkers would claim however that any such influence is ultimately founded in the innate biases, and does not constitute an independent influence on our beliefs.

Having clarified how evolution could give rise to the moral beliefs we hold, we can now specify this explanation as Evolutionary Explanation, which we will refer back to:

**Evolutionary Explanation**

Our moral beliefs are products only of causes ultimately reducible to influences from evolutionarily given innate biases.

\textsuperscript{16} See e.g. Lieberman (2008).
\textsuperscript{17} E.g. Ruse (1986), Joyce (2006) and Kitcher (2006).
\textsuperscript{18} E.g. Richerson & Boyd (2005) and Bowles & Gintis (2011).
\textsuperscript{19} For discussions of the empirical foundations of the debate amongst debunkers see e.g. Joyce (2006, Ch.1-4), Kitcher (2006), Mogensen (2014) and Buchanan & Powell (2016), and amongst evolutionary psychologists see e.g. Carruthers (2006, Ch.7), Sripada (2008) and Prinz (2008).
2.2. What’s debunking about evolution?

Why would Evolutionary Explanation be debunking? The main argument we will handle is from Street (2006), who argues that the evolutionary pressures on our moral beliefs do not ‘track’ the truth of those beliefs, because there is no evolutionary advantage to holding beliefs which correspond to non-natural facts. Let us elaborate on this claim.

We have accepted that evolutionary pressures significantly influence our beliefs, and that they do so in the direction of the beliefs that would be reproductively advantageous to hold, such as the belief that killing your children is wrong. Such beliefs however appear to be reproductively advantageous to hold whether or not they correspond to any non-natural facts. If such non-natural facts are what make moral beliefs true, then evolution will favour and influence us to believe them whether or not they are true. We can express this by saying that evolutionary influences are not ‘tracking’ influences. When our beliefs are wholly products of non-tracking influences we can say that there is no relation between them and their truth: they are not truth-tracking. Finally, if our beliefs are not tracking then we are as likely to believe them whether or not they are true.

Note however that non-tracking evolutionary influences are claimed to be exclusive to moral beliefs, because other kinds of beliefs such as mathematical beliefs tend to be reproductively advantageous only in so far as they are true. For example, when faced with the question ‘if three bears enter the cave and two exit, how many bears are still in the cave?’ evolution would make short work of individuals disposed to answer ‘none’. We whose ancestors survived therefore tend to have arithmetic beliefs which track the truth. For this reason most debunkers argue that EDAs apply only to moral or normative beliefs.

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20 Note that strictly speaking only influences can be tracking as beliefs cannot ‘track’ anything, but I am here using ‘a non-tracking belief’ as shorthand for a belief which is not the product of any tracking influences.

21 The implication goes the other way as well: If we are as likely to believe something whether or not it is true, then our belief is not tracking.
Compare the claim that our moral beliefs are products of non-tracking influences to Thermometer from section 1.2. When I base my belief that it is 37 degrees outside wholly on a thermometer that is stuck and doesn’t respond to changes in temperature, I am as likely to believe that it is 37 degrees outside whether or not it is true: my belief doesn’t track the truth. When I come to learn that the thermometer is broken I seem to lose justification in my belief that it is 37 degrees outside. Analogously, when the realist comes to learn of the evolutionary explanation of her moral belief, she loses justification in her belief that boiling babies is wrong.

Let us generalize this suggestion into a sufficient condition for satisfying DEFEATING in the general debunking argument:

\textbf{No-Track Defeat}

An explanation E provides defeaters for A's belief that \( p \) if E implies that A is as likely to believe that \( p \) whether or not \( p \) is true.\textsuperscript{22}

This means that if an explanation E satisfies No-Track Defeat, and also EXPLANATORY, then it constitutes a successful debunking argument. Furthermore, Evolutionary Explanation satisfies No-Track Defeat. In order to close the argument however the debunker has to show that Evolutionary Explanation is the best explanation as well. This is the claim which I believe realists should contest, and which we will explore below. Before I progress to this however I want to remark on some difficulties involved in No-Track Defeat.

\textsuperscript{22} Not all participants in the debate grant the debunkers that the lack of tracking influences is sufficient for defeat (e.g. Brosnan 2011, pp.52-56). I do not explore this claim here.
2.2.1. Is tracking the same as Nozickian sensitivity?

The terminology of ‘tracking’ and beliefs being ‘off-track’ has featured prominently in the literature after having been introduced by Street\textsuperscript{23}. However, what exactly is meant by these terms is rarely spelled out in detail. One natural way to understand tracking is in terms of counterfactuals, such that an influence on a belief is tracking if and only if it would have made the subject more disposed to hold the belief if it was true, and less disposed to hold it if it was false. In the case when there is only one influence determining the content of the belief, this conception of tracking is identical to Nozickian sensitivity\textsuperscript{24}:

\textit{Nozickian Sensitivity:}\textsuperscript{25}

\begin{quote}
A’s belief that \(p\) is sensitive if and only if: if \(p\) were false, A would not believe that \(p\), and if \(p\) were true, A would believe that \(p\).
\end{quote}

None of the participants in the discussion who use the ‘tracking’ terminology have to my knowledge explicitly acknowledged that they mean it in some sense akin to Nozickian sensitivity. Joyce on the other hand has made it explicit that he does appeal to insensitivity as grounds for defeat\textsuperscript{26}, and it seems apparent that Ruse also does so when he writes that ‘\textit{[g]iven two worlds, identical except that one has an objective morality and the other does not, the humans therein would think and act in exactly the same ways}\textsuperscript{27}.

Why is this observation relevant? It is because Nozickian sensitivity has significant issues accounting for beliefs about necessary truths, and on most accounts of moral realism moral truths are necessary truths, meaning that identical state of affairs will have the same moral properties in all possible worlds. To see the issue, notice that insensitivity obtains only if A would believe that \(p\), even if \(p\) were false. Assume that A believes that \(p\) where \(p\) is some true moral proposition about some state of affairs. As there is no possible world in which A believes

\begin{footnotesize}
\textsuperscript{24} This similarity is perhaps natural, as Street (2006, p.159) acknowledges to have borrowed the ‘tracking’ term from Nozick (1981).
\textsuperscript{25} Nozick (1981)
\textsuperscript{26} Joyce (2016, p.147)
\textsuperscript{27} Ruse (1986, p.254)
\end{footnotesize}
that \( p \) and \( p \) is false, because there is no possible world in which \( p \) is false, sensitivity is trivially satisfied, in which case true moral beliefs are trivially sensitive. This implies that the question of whether the realist's moral beliefs are sensitive or not is just the question of whether they are true or not\(^{28}\). This conclusion is problematic in several ways, but the most obvious is that we would need to know whether a belief was false in order to know whether it was debunked, which seems to make the debunking superfluous as we would be independently unjustified in holding a belief we knew to be false.

Joyce has responded to this kind of objection by suggesting that we can posit an extended semantic of impossible worlds without much issue\(^{29}\), in which case there are worlds in which a necessarily true belief can be false, and hence necessary beliefs can be both true and insensitive. As Clark-Doane has remarked however, this has very counterintuitive consequences, as it appears to make many of our ordinary beliefs about supervening properties insensitive\(^{30}\). For example, in the closest world in which atoms arranged desk-wise failed to compose a desk, I would still believe that those atoms composed a desk. This would suggest that my beliefs about when atoms arranged desk-wise compose a desk are insensitive, and subsequently unjustified. This is absurd.

As shown, appealing to Nozickian sensitivity to satisfy DEFEATING is deeply problematic. I believe this counts seriously against debunkers like Joyce and Ruse who clearly appeal to insensitivity. What about debunkers employing a 'tracking' terminology? As I argued before, I believe the most natural way to understand tracking is in terms of sensitivity, in which case they are no better off than Joyce and Ruse. For the sake of argument however I will progress the discussion on the assumption that there are other ways to understand tracking which do not fall prey to the same kinds of objections. Any success for the debunkers should again be seen as a

\(^{28}\) Similar objections are made by Enoch (2010, p.433), Wielenberg (2010, p.455-6), Shafer-Landau (2012, p.15) and Clark-Doane (2012, p.320).

\(^{29}\) Joyce (2016, p.148).

\(^{30}\) Clark-Doane (2016, pp.26-28)
'best case scenario' where a defensible account of tracking, or another sufficient condition for DEFEATING, can be given.

2.3. A realistic response

I will now consider how I believe realist should respond to the challenge posed by the suggestion of a debunking explanation of their moral beliefs. This is by arguing that there is another explanation which allows for independent tracking influence on our moral beliefs, and that this comes from our general capacity for rational reflection which we can use to correct for the innate biases given to us by evolution. If there are such tracking influences, then No-Track Defeat does not obtain. This is a popular response amongst realists. In this section I will make clear how we have come to have this capacity, what it amounts to and how it allows the realist to present an alternative explanation.

Some of our current capacities, such as our capacity for basic arithmetic, have clearly been reproductively advantageous. Many other capacities however, such as our capacity for linear algebra, do not seem to have provided any such advantage through most of our evolutionary history. We might explain our capacity for linear algebra by claiming that it is a by-product of other reproductively advantageous capacities, which we can express by saying that it has been selected of, rather than selected for. In particular we might plausibly suggest that we have a capacity for general a priori reasoning which is an adaptation. Even if this capacity has developed due to the advantage it provides in some domain, such as approximating the number of bears in some cave-complex, once developed it can be applied in other domains, such as linear algebra. Let us call this general capacity rational reflection.

Representing the debunkers, Street claims that ‘[t]he task of grasping independent evaluative truths presumably requires a highly specialized, sophisticated capacity, one specifically attuned to

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32 Sober (1984)
the evaluative truths in question"\textsuperscript{33}. The realist should reject this claim. Instead the realist should argue that just like we can apply our rational reflection in areas such as linear algebra in order to grasp \textit{a priori} truths, we can apply it in ethics to do the same. We can call rational reflection when applied to ethics \textit{moral reasoning}. This is when we reflect on moral issues and attempt to find the best answer. Moral reasoning provides an account of how the realist is able to have moral knowledge at all.

What does moral reasoning consist in? This is not agreed upon among realists. The account I present below is a compromise which I believe is general enough to be acceptable by most realists, but which I also believe to be among the most plausible. This is the suggestion that someone can increase justification in their set of moral beliefs by eliminating for coherence within that set, using the method of reflective equilibrium\textsuperscript{34}, jointly with an account of independent justification from self-evidence\textsuperscript{35}. I present each of these components in turn.

Huemer presents an example demonstrating how the exercise of reflective equilibrium can increase the justification of some set of beliefs\textsuperscript{36}. Suppose that a bank robbery has occurred on a foggy day and the police receive testimony of the license plate of the getaway car from six witnesses who claim to have seen it, and have not conferred with each other. Everyone gives different accounts, except for two who report the number X7841A. In this case the police start with a set of independently doubtful beliefs. Because of the convergence of two witnesses on the number X7841A however, it seems that the police would be quite justified in taking that to be the number, simply because it is highly unlikely that the witnesses would report the same number unless that was the actual number. This example demonstrates the general principle that coherence can grant justification upon members of a set, and amending beliefs of that set to achieve coherence can correct those beliefs, even when most of its members are false.

\textsuperscript{33} Street (2006, p.143)
\textsuperscript{34} Rawls (1971)
\textsuperscript{35} Some scholars such as Singer (2005) explicitly repudiate reflective equilibrium. I include it here both because I believe it is a defensible method, but also because I don’t want to commit my argument to its rejection, considering its widespread use.
\textsuperscript{36} Huemer (2008, pp.379-380)
Coherence is however insufficient to confer justification on the beliefs in a set. This is because there are many more consistent sets of beliefs than true sets of beliefs, suggesting that if all we have to go on is coherence, we are *prima facie* at least as likely to believe consistent falsehoods as a true set. When this possibility is salient, coherence does not appear sufficient for justification. What is required is some minimal independent justification for members of that set. In Huemer’s example above this is given by the perception of the witnesses which, though defeasible, gives them a better than random likelihood of being right.

What then plays the analogous role in the case of moral beliefs? I believe the most plausible account is the idea of self-evidence. This is the suggestion that in subject-domains employing *a priori* reasoning, beliefs in some propositions can receive justification in virtue of those propositions being inherently plausible. Self-evidence does not imply certainty however, and they do not need to be obvious. Examples include the propositions ‘nothing is green all over and red all over at the same time’ and ‘3486 + 643 = 4129’. Ethical intuitionists such as Sidgwick and Ross, and today Audi and Crisp, suggest that there are self-evident propositions in ethics as well. Here is an intuitive example of such a proposition:

‘All else equal, the fact that an action would cause immense pain to someone counts against performing that action.’

To me this appears as self-evident as the proposition that ‘nothing is green all over and red all over at the same time’. If we accept that there are such self-evident propositions in ethics, then these allow us to ‘ground’ our sets of beliefs. This in turn allows us to make our beliefs more

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37 This point is due Clark-Doane (2015a, p.2).
38 This is acknowledged by Schafer (2010, p.475), Fraser (2014, p.468) and also FitzPatrick when he writes that ‘without a mostly reliable belief set to begin with, such reasoning could just as easily lead to more consistent garbage as to moral truth.’ (2014a, p.252). This objection also pertains to the wider debate on coherentism in epistemology.
39 See Audi (1997, 2004) in particular for an elaboration of this concept.
40 To avoid the impression that self-evidence implies infallibility Hooker (2002, p.165) advocates the term ‘independently credible’ instead.
41 For a defence of *a priori* insight of this sort more generally, see Bonjour (1998, pp.131-133). For a defence of the analogy of self-evidence in mathematics and ethics, see Clark-Doane (2014).
42 This example was given by Roger Crisp in conversation.
likely to be true by eliminating for coherence in the sets, and therefore increase the justification of our beliefs by exercising reflective equilibrium.

What has been presented above constitutes a general realist epistemology. There are however many objections against it. One of the most prominent ones is the claim that it is impossible to have justified belief about causally inefficacious entities because there is no way to get ‘access’ to them, and because non-natural moral facts are causally inefficacious, we can’t have any justified belief about them\textsuperscript{43}. In particular this objection might cast some doubt on self-evidence as means of grounding sets of beliefs, as – unlike perception – there is no causal connection between believer and object.

These are deep and difficult problems for any non-naturalist moral realist. They are however independent of evolutionary debunking. Plausibly a realist would need some defensible epistemology in order not to become a sceptic, whether or not EDAs enter into the picture. Therefore, if a non-evolutionary debunking objection against realist epistemology as such would be successful, that would leave nothing for EDAs to contribute against moral realism, meaning that all EDAs would fail the Marginal Contribution Requirement from section 1.1. For this reason we can put the causal objections targeted at a realist epistemology in general to one side for this discussion.

How does this general realist epistemology tie in to a response to the debunkers? The answer is that it can provide an alternative explanation for our moral beliefs which does not satisfy No-Track Defeat. We can call this Realist Explanation:

\textbf{Realist Explanation}

Our moral beliefs are products both of influences from evolutionarily given innate biases and independent moral reasoning, where moral reasoning has been exercised by humans collectively over history to correct for our innate biases.

\textsuperscript{43}This is a version of the so-called Benacerraf-Field problem for mathematical Platonism (Field 1989, pp.232-233). See Clark-Doane (2017) for more on this.
The suggestion here is that while we certainly do have significant evolutionary biases, we can employ our independent moral reasoning to correct for these, which over time can lead us to hold true beliefs. This is just like we use our moral reasoning to reason our way out of other kinds of biases, such as cultural or emotional. Whatever conclusions we come to are passed on to future generations, allowing them to correct them further, the result of which is an increasingly true set of moral beliefs over generations. Because moral reasoning of this kind is a tracking influence on our moral beliefs, Realist Explanation does not satisfy No-Track Defeat.

2.3.1. Street's response
As mentioned, debunkers such as Street do not claim that moral reasoning has not had an influence on our moral beliefs; they reject the claim that it has had an independent tracking influence on our beliefs in light of evolutionary considerations. For this reason they would argue that Realist Explanation relies on an indefensible account of moral reasoning.

Street argues as follows: Moral reasoning consists in comparing beliefs and eliminating for coherence in light of others. All our beliefs however are 'thoroughly saturated' with evolutionary influence, bringing them 'off-track' to start with. It follows according to Street that 'all our reflection over the ages has really just been a process of assessing evaluative judgements that are mostly off the mark in terms of others that are mostly off the mark. And reflection of this kind isn't going to get one any closer to evaluative truth’44. For this reason Realist Explanation is a non-starter as a defence for a realist.

I believe it is difficult to read Street's argument here in a way which does not beg the question against the realist, or makes appeals to more general issues for a realist epistemology45.

One natural way to understand the argument is as saying that because there is significant influence from evolution on our beliefs, eliminating for coherence is just a process of trash in, trash out. As shown above, this is false. As long as we have some independent justification for members in a set of beliefs, eliminating for coherence can increase the justification in the

44 Street (2006, p.124)
45 FitzPatrick (2015) argues this most forcefully.
remaining members, even if the majority of them are false. In other words, as long as there is some independent grounding from self-evidence, there being influence from innate biases doesn’t do anything to rule out the tracking capacity of moral reasoning.

The other way to understand the argument is as saying that independent grounding such as self-evidence cannot play a part in our moral reasoning, meaning that we are again only producing consistent garbage. If the claim would be that any suggestion such as self-evidence would be indefensible on independent grounds, then it seems that the realist couldn’t get her epistemology off the ground with or without evolutionary considerations, and Street would be failing the Minimal Contribution Requirement. The claim might instead be that the presence of innate biases from evolution somehow would preclude the effect from self-evidence. But why should the realist accept this? Nothing has been said by Street to bring the influences from ‘tremendous’ to ‘exhaustive’, and just claiming this is begging the question.

For these reasons I don’t believe that Street manages to pre-emptily defuse tracking moral reasoning as a defence for the realist. In this next section I will present the argument which I think she should have argued for.

2.4. What is the best explanation?

I believe that a more fruitful and intuitive route for the debunker to take is to make an appeal to abduction, and argue that though Realist Explanation is in principle on the table, Evolutionary Explanation is simply a better explanation for the moral beliefs of the realist. This argument would go as follows: If a realist were to accept Evolutionary Explanation this would render them with moral scepticism, in which case they would be no worse off by removing non-natural moral facts from their ontology with a swift slash of Ockham’s Razor and opt for an ontological position which does not posit non-natural entities. Because Evolutionary Explanation allows the realist

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46 Huemer’s example with the license plate was directed against this argument.
47 Artiga (2015, p.3364) argues against this move from adopting moral scepticism to rejecting moral realism, but I will not contest it here.
to significantly shrink her ontology in this way and still be able to explain why we have the moral beliefs we do, she has an epistemic duty to do so on grounds of ontological parsimony.\footnote{Some realists (e.g. Parfit (2011; 2017) and Scanlon (2014)) argue that non-natural moral facts don’t expand our ontology, in which case this objection would be void. I don’t consider this view here.}

To illustrate the general argument, consider the phenomenon of sleep paralysis. Throughout history people have reported waking up from sleep and feeling a malevolent presence in the room together with an immense weight on their chest. This was for a long time explained by the existence of incubi and succubae; demons who would terrorize people during the night. Today we explain these experiences as an effect of sleep paralysis; a psychological state where the mind wakes up before the body does, which often produces these terrifying experiences. Given that we can now account for these experiences without positing the existence of demons, we should accept sleep paralysis as a better explanation of them. Analogously, we should accept Evolutionary Explanation as a better explanation than Realist Explanation, as it allows us to account for our moral beliefs without positing the existence of non-natural moral facts.

I will argue that this argument is not successful against the moral realist. This is because what counts as the best explanation is not determined wholly by ontological parsimony, but also other explanatory virtues. One such virtue is conservatism; the degree to which an explanation allows us to leave our beliefs as they are. In this category Realist Explanation fares better than Evolutionary Explanation. As I will show, this gives the realist good reason to prefer Realist Explanation to Evolutionary Explanation.\footnote{Huemer (2015) argues that Realist Explanation fares much better in accounting for the moral beliefs we do hold, when considering the development towards liberal values which can be seen over history (see Pinker (2011) for an empirical study of this). As we have already assumed that Evolutionary Explanation can account for the empirics sufficiently well I won’t push this argument here. See Kitcher (2011) and Buchanan & Powell (2016) for defences of the empirical adequacy of Evolutionary Explanation.}

What do I mean by conservatism? I believe it is best put in an expression from Quine:\footnote{Quine (1986, p.7)}
The Maxim of Minimum Mutilation

All else equal, if an explanation $E_1$ violates A’s background beliefs less than another explanation $E_2$, $E_1$ is a better explanation to A than $E_2$.

This is the suggestion that, *ceteris paribus*, the better explanation is that which requires the least radical amendment of our general worldview. This principle is intended to be something akin to an application of common sense, and I believe highly intuitive. Consider the following case for example. My experience of seeing a cup is underdetermined by two competing explanations: one in which I am actually here seeing the cup and one in which I am a single brain in a vat alone in the universe being fed visions of the cup. These explanations seem to be able to account for all the data equally well, and if anything the sceptical explanation is more parsimonious, as it doesn’t require any ontology beyond my own existence. We do believe that the common-sense explanation is evidently better however. What seems to distinguish the two explanations from each other is that only the sceptical explanation would imply that I am radically deceived in most of my beliefs, and therefore adopting it would violate the Maxim of Minimum Mutilation. For this reason the common-sense explanation is better.

Realists should (and do)\(^{51}\) argue that the case is analogous when it comes to Realist Explanation relative to Evolutionary Explanation. If for example the realist was to replace her realism with an error-theory this would imply that her beliefs like ‘boiling babies is wrong’ would be false, which is a significant mutilation of her world view. The mutilation is less radical if we were to adopt the constructivism of Street, but I believe still substantial. For example, it would imply that the realist’s beliefs like ‘boiling babies is wrong no matter what any number of persons think about it’ would be false. For a more realistic case, it would (arguably)\(^{52}\) imply that female genital mutilation is permissible in societies where it is considered an acceptable practice. Accepting these claims again constitutes a significant mutilation of the realist’s world view. The realist can

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\(^{51}\) E.g. FitzPatrick (2014a, p.248).

\(^{52}\) Some constructivists might attempt to avoid these kinds of cases, but I’m doubtful whether they can.
then argue that even though Evolutionary Explanation is more parsimonious, Realist Explanation is better because it does not radically violate her background beliefs.

The debunker might respond that he does not agree that this degree of mutilation isn’t worth the ontological trade-off. Remember however that satisfying EXPLANATORY in the General Debunking Argument is dependent on an explanation being the best for the target of the debunking, not the debunker. For this reason the debunker cannot argue for Evolutionary Explanation only on the basis that he believes its parsimony makes it worth adopting.

What he can do however is to argue that the realist values conservatism unreasonably high and cannot plausibly claim that the ontological cost is worth it. To see this, consider the sleep paralysis case again. Suppose that for some people their beliefs about succubae and incubi are very central to them, and giving them up would constitute a significant mutilation of their worldview. In this case it seems they might be justified in keeping the existence of demons as an explanation despite the ontological cost. This appears absurd, and demonstrates that we want to put some constraints on how ontologically liberal one can be. So why then don’t such constraints also make the realist’s valuation unreasonable? The answer is that there is a significant difference in the marginal effect on overall ontology of adopting the respective naturalistic explanations; the ontological gain is smaller for the realist than the demon-believer.

To explain this we must first make clear what exactly it means for something to expand our ontology. I will follow Sinnott-Armstrong who writes that ‘[w]hat Ockham’s razor shaves are kinds of entities, such as souls or phlogiston or universals, that are significantly different from the standard kinds of entities’53. It follows that non-natural moral facts add to our ontology only in so far as they are different from other entities whose existence is not in question. Mackie (1977) famously suggests that moral facts are ‘queer’ in virtue of being non-natural and having some necessary motivational pull, making them very different from most naturalistic things like microbes, tables and stars. Though I cannot argue for it here, I believe realists should reject the

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claim that moral facts are necessarily motivational. In this case moral facts are queer mainly in virtue of being non-natural. As there are other non-natural entities one can defend independently, this observation opens up a fruitful ‘partners-in-crime’ route for the realist to pursue.

For example, a sensible moral realist should also be a mathematical realist, by which I mean to accept the existence of non-natural mathematical facts. This is because the main objections against mathematical realism are equally applicable to moral realism, most significantly the problem of causation mentioned in section 2.3, but it has independent arguments such as the Putnam-Quine indispensability thesis in its favour. In other words, if you’re already a moral realist there are no real downsides to being a mathematical realist as well.

EDAs are only supposed to target moral beliefs, not mathematical beliefs, and as we’ve seen appealing to independent shared problems is off the table due to the Marginal Contribution Requirement. This means that mathematical realism is safe from the debunker, and the ontological gain from accepting Evolutionary Explanation is not the difference between natural and non-natural facts as the debunker would have one believe, but the difference between non-natural moral facts and non-natural mathematical facts. Compare this to the explanations for the nightly terrors. In this case adopting the naturalistic explanation has allowed us to shave off the existence of demons from our ontology, and the ontological gain is intuitively much greater than that from adopting Evolutionary Explanation for our moral beliefs. See below for an illustration of this, where the differences between the dark and light grey columns represent the respective marginal impact on ontology from adopting the naturalistic explanation in the two cases.

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54 In doing so I am in the company of Nagel (1970), Shafer-Landau (2003) and Parfit (2017) amongst others.
55 This is the suggestion that we cannot account for our observations using scientific theories without positing the mathematical facts to which they implicitly refer. See e.g. Putnam (1971).
Because adopting Evolutionary Explanation rather than Realist Explanation would be accepting a significant mutilation of the realist's world view for small ontological gains, and rejecting this deal would be reasonable, I argue that the realist does not in fact have good reasons to accept Evolutionary Explanation rather than Realist Explanation. This means that Evolutionary Explanation is not the best explanation for the realist, EXPLANATORY does not obtain, and the debunker is unable to close the argument from explanatory superiority against the realist.

It would be unfair however to say that discoveries of evolutionary influences of this kind have no bearing on the justification of our moral beliefs, as they clearly have a distorting influence. The important point is that we have no reason to believe that we cannot correct for this influence. Just like we might use reason to correct for some the beliefs we inherited from our environment growing up, and like we correct for some of our emotional inclinations, we should be prudent to correct for our evolutionary heritages. This however does not provide grounds for debunking.
3. The Challenge from Improbability

Let us suppose that the debunker accepts the argument above, and concedes that the realist can hold Realist Explanation. The debunker might argue that even though moral reasoning has had some tracking influence on our moral beliefs as Realist Explanation implies, this influence would be much too weak relative to the distorting influence of evolutionary biases. Because of this the realist’s beliefs are debunked even when we accept Realist Explanation and allow for some tracking influence.

I evaluate this claim by considering a much discussed aspect of Street’s argument which I call the argument from improbability. This is the claim that not only are our beliefs the products of mainly distorting influences, but because of this it would also be an incredible coincidence if those beliefs happened to be true, which provides the realist with defeaters for her beliefs. In this section I first consider Street’s argument as presented by her, and clarify it using conditional probabilities. By doing so I dispel some prominent and unfair criticism against it from Brosnan and Vavova, but I also show that Street is implicitly committed to the controversial Principle of Indifference in probability theory, which she fails to acknowledge.

Street’s argument is however also committed to Evolutionary Explanation which we already have reasons to reject. In section 3.3 I suggest however that her argument might have feet even if we relax the No-Track assumption, as moral reasoning could be too weak to correct for the pervasive evolutionary forces. While this appears to have been acknowledged by Street and realists alike\(^{56}\), no-one has to my knowledge tested this argument from probability while allowing for some tracking influence. I attempt to contribute to the debate by doing so. Ultimately I argue that its appeal is illusory, and that it fails because the debunker has barred himself from putting any constraints on the capacity of moral reasoning.

\(^{56}\) According to Parfit (2011, p.532) Street claims that ‘though the power of rational reflection might lead us towards such independent normative truths, this power would be too weak. In this conflict, the evolutionary forces would win.’ Similarly FitzPatrick (2014a, p.249) acknowledges that it is ‘crucial that whatever evolutionarily-shaped dispositions we did inherit were not so distorting overall as to pose an insurmountable obstacle [to forming true moral beliefs]’.
3.1. Understanding Street’s argument from improbability

Street argues that because our beliefs are significantly influenced by evolution, and because that influence is not tracking, our beliefs have most likely been brought far off-track from any independent non-natural moral facts. Because it is highly unlikely that our beliefs have ended up corresponding to such moral facts by luck, this gives the realist good grounds to doubt her moral beliefs. Street describes this in an analogy of sailing for Bermuda:

**Bermuda:** Having one’s moral views being deeply saturated by evolutionary influence when attempting to find moral truths is like setting out for Bermuda and letting the course of your boat be determined by the wind and tides. Just as the wind and tides do not influence your direction specifically towards Bermuda, evolution does not influence your beliefs specifically towards moral truths. However, just as the winds and tides might drop one off at Bermuda, evolution might bring us to moral truths. But this would be a matter of chance, and in both cases highly unlikely.\(^{57}\)

Street is here claiming that it would be highly unlikely if the boat happened just happened to drift onto Bermuda, given all the directions it could go and islands it could drift onto instead. I believe this claim of it being highly unlikely can only be made sense of in terms of probability\(^{58}\), such that that a person with this knowledge should, if they are to be rational, ascribe very low probability to the outcome that the island the boat drifted onto was Bermuda\(^{59}\). For analogous reasons, a moral realist should ascribe very low probability to the outcome that her beliefs correspond to non-natural moral facts. If this is correct, then it seems that the moral realist would be unjustified in her moral beliefs upon realizing the improbability of them being true. Let us generalize this into a new sufficient condition for satisfying DEFECTING:

\(^{57}\) See Street (2006, p.121) for her description.

\(^{58}\) I have a difficult time imagining that Street has anything else in mind when she writes that it is a ‘matter of chance’ (p.122) and a ‘fluke of luck’ (p.122) if we’ve hit upon moral truths.

\(^{59}\) This corresponds to what Gillies (2000, pp.25-50) calls ‘logical’ probability, which he contrasts with ‘objective’ and ‘subjective’ probability. Of these conceptions I believe Street’s argument can only be made sense of on the logical conception. I expand on this below.
**Improbability Defeat**

An explanation E provides defeaters for A’s belief that \( p \) if E implies that A should ascribe very low probability to her belief that \( p \) being true.

Let us now consider whether Street manages to show that Improbability Defeat obtains. To answer this question I will follow Brosnan (2011) in framing Street’s argument in terms of conditional probabilities. Improbability Defeat obtains when the realist believes something which is highly improbable to be true. This can also be expressed in terms of the probability of the object of her belief being the case (\( p \)) conditional on her believing it (\( B(p) \)), which is formally described as \( P(p|B(p)) \). I will here use the odds form of this probability \( \frac{P(p|B(p))}{P(\sim p|B(p))} \) instead\(^\text{60}\). When \( \frac{P(p|B(p))}{P(\sim p|B(p))} \) is very low, Improbability Defeat obtains:

\[
\frac{P(p|B(p))}{P(\sim p|B(p))} \approx 0 \iff \text{Improbability Defeat}\(^\text{61}\)
\]

In order for Street to establish Improbability Defeat she requires two variables: the prior probabilities that should be ascribed to some moral belief being true, all else equal, and the evidential credence being given by the holding of the belief, if any. The interaction between these can be expressed using the odds form of Bayes’ Theorem:

\[
\frac{P(p|B(p))}{P(\sim p|B(p))} = \frac{P(p)}{P(\sim p)} \times \frac{P(B(p)|p)}{P(B(p)|\sim p)}
\]

*Posterior Probability = Prior Probability × Likelihood Ratio*

The Posterior Probability (Posterior) is the probability of \( p \) conditionalised on the belief that \( p \).

The Prior Probability (Prior) is the probability of \( p \), all else equal. The Likelihood Ratio (Likelihood) is the probability that someone believes that \( p \) given that \( p \) is true, relative to when

\(^60\)This is again following Brosnan (2011).

\(^61\)This should be expressed as \( \frac{P(p|B(p))}{P(\sim p|B(p))} < L \), where \( L \) is some number sufficiently low to make us deem that \( p \) is highly improbable. I express it as \( \frac{P(p|B(p))}{P(\sim p|B(p))} \approx 0 \) for simplicity.
it’s not. As we’ve seen Street needs to establish a claim about Posterior in order for Improbability Defeat to obtain, and Posterior is determined by the values of Prior and Likelihood. I elaborate on these, starting with Likelihood.

### 3.1.1. Likelihood

Likelihood is a measure of the evidential credence we should give to whatever fact Posterior is conditioned on. A high Likelihood can compensate for a low Prior. For example, all else equal it might be extremely improbable that a meteor would strike my lawn. If however I’ve just seen it hit the ground and my vision is highly reliable then it becomes highly probable that it just did.

See below for this example expressed in probabilities:

\[
\frac{P(\text{Meteor}|\text{See(Meteor)})}{P(\text{No Meteor}|\text{See(Meteor)})} \gg 1 \iff \frac{P(\text{Meteor})}{P(\text{No Meteor})} \ll 1 \text{ and } \frac{P(\text{See(Meteor)|Meteor})}{P(\text{See(Meteor)|No Meteor})} \gg 1
\]

One less intuitive way to think about Likelihood in this discussion is that a reliably produced belief can itself provide evidential credence for its content. This brings us to Street’s argument. Likelihood is at the core of it. In fact, her claim about our beliefs not being produced by tracking influences is a claim about Likelihood. Whether the realist’s beliefs are produced by tracking influences or not is equivalent to whether it is more probable that she would hold that belief if it was true relative to if it wasn’t. No-Track obtains exactly when she is as likely to believe something whether or not it is true (see section 2.2). Notice that these claims can be expressed in terms of Likelihood:

\[
\frac{P(B(p)|p)}{P(B(p)|\neg p)} = 1 \iff \text{No – Track}
\]

\[
\frac{P(B(p)|p)}{P(B(p)|\neg p)} > 1 \iff \text{Tracking}
\]

As Street presents her argument she accepts Evolutionary Explanation and No-Track. In other words, she claims that moral reasoning has no tracking influence on the realist’s beliefs, and that those beliefs therefore provide no evidential credence. This means that Likelihood = 1 is a premise in her argument. As seen in the previous discussion however, the realist has good
reasons to reject this. For now though I focus on evaluating Street’s argument as she presents it. In section 3.3 I will consider whether Improbability Defeat can be established on Realist Explanation when we allow for tracking influence and that $Likelihood > 1$.

### 3.1.2. Prior

Let us now consider how Street acquires values for $Prior$. Brosnan has argued that Street doesn’t have any values for $Prior$ as she doesn’t have any empirical data available to base it on, and for this reason cannot establish Improbability Defeat\(^{62}\). Against Brosnan we can note that Street does posit values for $Prior$, which she takes to be given by ‘the huge universe of logically possible evaluative judgments and truths’\(^{63}\). Street makes this clear elsewhere:

‘[I]f there are innumerable things such that it’s conceptually possible they’re ultimately worth pursuing, … then what are the odds that our values will have hit, as a matter of sheer coincidence, on those things which are independently really worth pursuing? That the odds seem low is an understatement.’\(^{64}\)

What Brosnan appears to be neglecting is the possibility of appealing to a priori prior probabilities, which seems to be what Street is doing\(^{65}\). I believe we should understand Street as saying that $Prior$ is given by the number of true sets of moral beliefs relative to the number of conceptually possible sets of moral beliefs. By ‘sets of moral beliefs’ I mean maximally consistent sets of moral propositions. Because only one set of moral beliefs is true given moral realism, while as the number of consistent sets of moral beliefs which could – for all we know – be true is very large or infinite, it seems that we should ceteris paribus assign a very low prior probability to whatever set of beliefs we are holding being the true set of moral beliefs. See below:

$$\frac{P(p)}{P(\neg p)} \approx 0$$

---

\(^{62}\) Brosnan (2011, p.55)

\(^{63}\) Street (2006, p.122)

\(^{64}\) Street (2011, p.14)

\(^{65}\) In Gillies (2000) distinctions, this corresponds to adopting the logical conception of probability rather than the subjective conception which requires empirics and which Brosnan appears to assume.
One might react to the above strategy by remarking that we cannot apply probabilities to
necessary facts such as moral facts. When we conceive of probability as being something a
rational person should ascribe to an outcome given the available information, I believe Street
can plausibly respond that we can in fact apply probabilities to necessary truths when our
knowledge of them is limited. Consider the following case:

**Math Test:** You are sitting a multiple choice math test which you know is about to end in 3 seconds. You have just turned the page and you are faced with the following question:

What is 485923 + 239475?

A. 723593  
B. 725398  
C. 732172  
D. 731638  

Assume that you only have time to pick an answer at random. Once you have given your response there is a fact to the matter as to whether it is true or false, meaning that the *objective* probability of it being true is either 1 or 0. However, imagine that someone asks you ‘how probable do you think it is that you got the last question right?’ We can make sense of this question, and it seems reasonable for you to respond, given that it was random, ‘¼’. This is *ceteris paribus* the probability you *should* ascribe to your answer being right. Analogously, I believe it is plausible for Street to pursue a similar strategy for moral beliefs. A much more serious issue is that Street implicitly relies on the *Principle of Indifference* when she assumes an equal distribution of probability across the sample space. We return to this in section 3.2.2.

We should make one amendment to Street’s conception of *Prior* to make it plausible however. Street takes *Prior* to be given by the number of true sets of beliefs, which is 1, relative to the

66 This concession is however rejected by Clark-Doane (2015b, p.90).
number of conceptually possible sets of beliefs, which is very large or infinite. This seems like quite an unfair characterization. Of course most realists aren’t too worried that we’ve got some of our beliefs wrong. Indeed, if Street’s conclusion is supposed to be that it is highly improbable that all our moral beliefs are right, then most realists would agree! Instead of considering the relation between the number of conceptually possible sets and the number of true ones, we should consider the relation between them and the number of acceptable sets. An acceptable set is here taken as a set where sufficiently many of its members were also members of the real set that we would not feel that we were radically wrong if we believed it.

This amendment also gives us reason to specify the number of conceptually possible sets as very large rather than infinite. The reason is that if we now allowed the number of conceptually possible sets to be infinite, the number of acceptable sets would also be infinite. This is because the same kind of minimal differences between the sets which could differentiate conceptually possible sets ad infinitum could be applied to make analogous differentiations between acceptable sets ad infinitum. In this case the value for Prior would be a small infinity (number of acceptable sets) divided by another small infinity (number of conceptually possible sets), which is undefined. For this reason the only way for Street to achieve a plausible Prior is by assuming that the number of conceptually possible sets is constrained. This strategy still allows her to establish that \( \frac{P(p)}{P(\neg p)} \approx 0 \) however.

### 3.1.3. Closing the argument

Having demonstrated how Street manages to establish values for Likelihood and Prior we can now show how she satisfies Improbability Defeat. We have here accepted for the sake of argument that Likelihood = 1. We have also shown how Street establishes that Prior \( \approx 0 \). Applying both of these in the odds form of Bayes’ Theorem shows that Posterior will have the same value as Prior in the absence of tracking influences, which means that Posterior \( \approx 0 \) and Improbability Defeat obtains. See below for the argument in terms of probabilities:
3.2. Evaluating Street’s argument

As mentioned, the previous discussion gave us reason to reject the claim that Likelihood = 1. Before I consider what implications relaxing this assumption has for the argument I want to consider some criticism against it as it stands here. This is because one might reject my previous conclusion in part 2 but be unimpressed by the argument from explanatory superiority anyway. In that case one might want to consider Street’s argument from improbability, in which case we should consider how it fares.

3.2.1. Why Street’s argument is not a general sceptical one

Here is an objection to Street’s argument: The argument from improbability can just as well be made against our every-day beliefs as our moral beliefs, which means that Street’s argument degenerates into a general sceptical one. Since this is not Street’s aim, her argument fails, and any further consideration of it on our part would be superfluous. This objection has been made primarily by Vavova (2014; 2015). While I agree with Vavova that we should not accept Street’s argument, I reject her reasons for believing this and hope to in this section contribute to a fairer understanding of Street by making clear the flaws of Vavova’s argument using conditional probabilities.

Vavova argues that the essential part of Street’s argument from improbability can be put as such:

\[
\frac{P(p|B(p))}{P(\neg p|B(p))} \approx 0 \iff \frac{P(p)}{P(\neg p)} \approx 0 \& \frac{P(B(p)|p)}{P(B(p)|\neg p)} = 1
\]

Vavova (2015, p.107)

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67 Vavova (2015, p.107)
(5) If the odds are low that I’m right and if I have no non-question-begging evidence that I’m right, I cannot conclude that I’m right.

(6) I cannot conclude that my normative belief system is the right one. [3, 4, 5]

This argument is valid, and *prima facie* seems like a fair characterization of Street’s argument. However, Vavova then claims that an analogous argument can be made to remove our justification in every-day beliefs. To show this she gives the following example in another paper arguing the same point68:

**Possibility of Error:** ‘Some possible states of belief are coherent and stable – they look fine ‘from the inside’ – and yet are mistaken. There [is an extremely high number]69 of these and [only a handful]70 that [are] right. Furthermore, we have no good reason to think we’re not in such a state. So it would be unreasonable for us to be confident that we’re not in such a state.’

Consider an illustration of this argument expressed in our terminology. Suppose that I believe that there is an apple in front of me. There is a huge amount of ‘demon worlds’ in which I am as likely to believe that there is an apple in front of me as if there isn’t, and only a tiny subset of these in which there actually is an apple in front of me. If this is the case, it appears that \( \text{Prior} \approx 0 \) because of the many more worlds without apples in front of me, and that \( \text{Likelihood} = 1 \) because demons would be giving me apple-visions whether or not there was an apple there. Therefore \( \text{Posterior} \approx 0 \) and Improbability Defeat is satisfied, meaning that my belief that there is an apple in front of me is defeated. This seems *prima facie* correct, which would mean that Street’s argument is equivalent to a general sceptical one.

The analogy is only apparent however, and unlike Street’s argument, the above argument is flawed. The difference lies in how they manage to establish that we have no evidential credence

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68 Vavova (2014, p.83)
69 Vavova writes ‘infinitely many’ here. I have amended it as above to incorporate acceptable belief systems and hence make it plausible. This does not affect Vavova’s main point.
70 Vavova writes ‘one’ here. See above.
for our beliefs in the respective cases. As we’ve seen, Street does this by appealing to evolution. Vavova however claims that doing so is superfluous, as the possibility of sceptical worlds nulls any evidential credence, because all relevant evidence becomes question-begging. This is not true. The reason is that our available evidence does increase the probability of every-day beliefs, even when we entertain sceptical possibilities.

To see this, consider the sceptical example above. In this example Vavova considers only demon-worlds, in which I am as likely to believe there to be an apple there whether or not there is. By doing so however she ignores all the non-demon worlds in which my vision is working perfectly fine. In such worlds my belief is highly truth-tracking, and I am much more likely to believe that there is an apple if there is than if there isn’t, meaning that in those worlds my vision provides significant evidential credence and $\text{Likelihood} \gg 1$. In such cases $\text{Likelihood}$ can compensate for the tiny $\text{Prior}$, such that $\text{Posterior} \neq 0$, meaning that Improbability Defeat doesn’t obtain. Vavova’s claim that $\text{Likelihood} \approx 1$ obtains only if we have some a priori reason to believe that we most probably are in a demon world (e.g. if all possible worlds were demon worlds) warranting her only considering them. This is because if – for all we know – there is some non-negligible chance that we are in a non-demon world, then our vision does provide some evidential credence, meaning that Vavova’s conclusion doesn’t obtain. As we have no such a priori reasons to believe that we are most likely in a demon world, Vavova’s argument fails.

I believe this confusion arises from an ambiguity in requiring ‘non-question begging evidence’. In a sense my vision of the apple is question-begging evidence, in that its veracity is in question. As shown however, unless we’re already sure that we’re probably in a demon world, our vision still provides some evidential credence. Hence some evidence being ‘question-begging’ in this sense is not sufficient to establish that it provides no evidential credence, and Vavova’s (5) is then false$^{71}$. This is brought out only when evidential credence is expressed as a matter of degree, rather than as a binary. Because Street establishes that no evidential credence can be given to

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$^{71}$ If ‘question-begging’ is taken to imply the absence of evidential credence, then (4) is false instead.
the realist’s moral beliefs by appealing independently to evolution, her argument is not equivalent to the attempted sceptical argument above, and Vavova’s objection fails.

3.2.2. The Principle of Indifference
Street’s argument suffers from another serious issue however, which is her implicit reliance on a theory in classical probability called the Principle of Indifference (POI) in order to establish Prior. POI in short is the suggestion that in cases of evidential symmetry (where we have no reason to consider one outcome more likely than another), we should ascribe equal probability to each member of the sample space. In Math Test for example, given the time-constraint we have no reason to believe that any of the four answers is more probable than another, and so it appears we should ascribe a probability of \(\frac{1}{4}\) to each. Analogously, given that we have no reason to believe that one set of possible moral beliefs is more probable to be true than another, we distribute equal probabilities across each possible set of moral beliefs. This is how Street is able to establish Prior.

However, POI is controversial in modern probability theory to the point of being discredited. This is because it implies that we in some cases ought to ascribe inconsistent probabilities to the same outcomes. This can be demonstrated using the following classical example from von Mises (1957):

**Water into Wine:** You have a glass of only water and wine, and are asked to give a probability to different values of the ratio of water to wine, Water/Wine, knowing only that \(\frac{1}{2} < \text{Water/Wine} < 2\). You are also asked to do the same for the ratio of wine to water, Wine/Water, which is in the same range. What probability do you give to \(\frac{1}{2} < \text{Water/Wine} < 1\) being the case?

Given that \(\frac{1}{2} < \text{Water/Wine} < 1\) constitutes \(\frac{1}{3}\) of the sample space of ratios which Water/Wine could be within, and given we have no reason to believe that any particular same-
sized range within \( \frac{1}{2} - 2 \) is more likely than another, POI would have us apply equal probability across the ranges, such that \( P \left( \frac{1}{2} < \text{Water/Wine} < 1 \right) = 1/3 \).

While this appears intuitive, POI would have us claim more as well. Notice that trivially \( \text{Wine/Water} = \frac{1}{\text{Water/Wine}} \) in virtue of being corresponding ratios. It follows from this that \( \frac{1}{2} < \text{Water/Wine} < 1 \iff 1 < \text{Wine/Water} < 2 \). As we’ve seen, according to POI it is the case that \( P \left( \frac{1}{2} < \text{Water/Wine} < 1 \right) = 1/3 \), which means that if \( \frac{1}{2} < \text{Water/Wine} < 1 \) is equivalent to \( 1 < \text{Wine/Water} < 2 \) we should ascribe the same probability to both, such that \( P(1 < \text{Wine/Water} < 2) = 1/3 \). However, given that \( 1 < \text{Wine/Water} < 2 \) constitutes \( 2/3 \) of the sample space, POI would also have us claim that \( P(1 < \text{Wine/Water} < 2) = 2/3 \). Because \( \frac{1}{3} \neq \frac{2}{3} \), POI appears to lead to contradictions.

I find it surprising that not more critics of Street’s argument have emphasised this point\(^{72}\), and I believe it is deeply problematic for Street that she doesn’t seem to have acknowledged it herself.

In this case, why not just end the discussion here, considering the distressing conclusions above? It is because solutions to the Water into Wine paradox have been proposed, and this is an ongoing discussion\(^{73}\). Also, there might be ways to generate \textit{a priori} prior probabilities which are not dependent on POI. While Street’s argument is contingent on certain highly controversial assumptions in probability theory, we should therefore not rule out her argument on this basis. Any success for her argument from improbability should, however, be seen as very much of a ‘best-case-scenario’ where some required account of obtaining \textit{Prior} is shown to be defensible.

\(^{72}\) Mogensen (2014) is an exception.

\(^{73}\) See e.g. White (2009).
3.3. Is moral reasoning strong enough?

So far we have considered Street’s argument from improbability as presented by her. As we’ve seen, her argument relies on No-Track in order to establish that $Likelihood = 1$. As has also been shown however, No-Track obtains if we accept Evolutionary Explanation, but not if we accept Realist Explanation. On Realist Explanation there is a tracking influence from moral reasoning, meaning that $Likelihood > 1$: our moral beliefs provide some evidential credence. As the realist, according to part 2, has reason to accept Realist Explanation, it appears that Street’s argument fails.

However, a possibility which has not to my knowledge been entertained in the literature is that Street’s argument from improbability can work even when we allow that $Likelihood > 1$. This is because when Prior is very small $Likelihood$ doesn’t need to be strictly 1; it just needs to be sufficiently low as not to compensate for the tiny Prior. As $Likelihood$ is a function of the tracking influence of moral reasoning on our beliefs, this possibility corresponds to the suggestion that our moral reasoning is too weak to reliably bring us to moral truths.

Under what conditions does Improbability Defeat obtain when we relax the No-Track assumption? One way to describe the answer is to say that it has to be the case that $1 \leq Likelihood < M$, where $M$ is some value sufficiently high to compensate for the tiny Prior and make us think that Posterior no longer qualifies as highly improbable. When $Likelihood$ is lower than $M$, Improbability Defeat obtains. See below for this expressed in terms of probabilities:

**The Relaxed Argument from Improbability:**

\[
\left[ \frac{P(p|B(p))}{P(\neg p|B(p))} \approx 0 \right] \iff \left[ \frac{P(p)}{P(\neg p)} \approx 0 \right] \& \left[ 1 \leq \frac{P(B(p)|p)}{P(B(p)|\neg p)} < M \right]
\]

How can a debunker establish that $1 \leq Likelihood < M$? In order to determine this we need to understand how the exercise of moral reasoning corresponds to the evidential credence of our moral beliefs ($Likelihood$). It is attractive to think of this in terms of the Bermuda analogy, where
we might imagine a low Likelihood as corresponding to having a rusty compass and a pair of broken oars: it might have some effect on your chances of getting to Bermuda, but it’s pretty insignificant compared to the power of the winds and tides. Analogously we might want to suggest that evolution must have dropped us off sufficiently ‘close’ to the acceptable moral sets in order for us to be able to grasp them. FitzPatrick for example seems to have this picture in mind when he writes that evolution has to ‘have put us at least in the right ballpark…, leaving us not too far off to make the transition from Pleistocene sensibilities to current developed dispositions that yield largely correct moral beliefs’\textsuperscript{74}. While these spatial analogies are prominent in the literature, I will argue that they are in fact highly misleading.

Here is a better way to think about it. Consider again Math Test from section 3.1.2. Imagine this time that I’m taking the test, and that I don’t know exactly how much time is left. Assume further that I am drunk when doing this. I turn the page and am faced with the same question as you were:

What is $485923 + 239475$?

A. 723593  
B. 725398  
C. 732172  
D. 731638

Suppose that I have some time to look at the answer and maybe rule out some alternative before answering. In this case we want to say that the probability of my answer being correct has increased relative to answering randomly in light of my thinking about the problem. Suppose now instead that I have proper time to do the calculation, in which case I’m (hopefully) sure to get the right answer. The more time I have to think, and the less drunk and stressed I am, the more likely I am to believe an answer if it is true, and the less likely I am to believe an answer if

\textsuperscript{74} FitzPatrick (2014a, p.249)
it is false (notice how this corresponds to Likelihood \( \frac{P(B(p)|p)}{P(B(p)|\neg p)} \)). We might also express this by saying that my mathematical reasoning has a tracking influence on my belief, correcting for the distorting influences of alcohol and stress.

Analogous to this case we might suggest that the likelihood ratio for a moral realist is a function of how capable we’ve been at moral reasoning over the course of civilized history and the time we’ve had to exercise it, relative to how engrained our innate evolutionary biases are in our thinking. The more intellectual capability and time we’ve had, and the less influenced we are by innate biases, the more likely we are to believe some moral proposition if it is true, and the less likely we are to believe it if it is false, which corresponds to an increase in Likelihood. This, I believe, is how we should understand the relation between the evidential credence of our beliefs and the tracking influence of moral reasoning.

Let us return to the objective for the debunker, which is to approximate some value for Likelihood and show that it is below \( M \). Math Test might give us hope of achieving this. In this case it intuitively appears that we have some sense of at what values of time, stress and drunkenness I am probable to have gotten the correct answer. If, for example, I was very drunk and had limited time it seems improbable that my answer would be correct. In other words, in Math Test we seem to have a decent grasp of when Likelihood is below \( M \), such that Posterior is sufficiently low to be considered improbable. We could describe this as a credence function such that:

\[
\text{Math Skill(Intelligence,Time,Stress,Drunkenness)} \approx \text{Likelihood}
\]

Can we do the same for our moral reasoning? The debunker might suggest that we can. We do have some sense of our reflective capabilities, the civilized history during which we have developed our moral beliefs and some experimental data on the influence of innate biases on our thinking. There is however one crucial difference between Math Test and our moral reasoning: we have no credence function in the latter.
The credence function Math Skill above is based on inductive information which most of us are some idea of. For example, we know roughly how long a normal person takes to solve a question such as that above, we might assume that my intelligence is within some normal range and we have some idea of how much less likely we are to get math right when we’re drunk and stressed. Together this gives us some rough idea of the probability that I’ve gotten the answer correct under the specified circumstances, which we can express in Math Skill.

The problem for the debunker is firstly that we don’t have such information on how cognitive capacity and historical development translate into a level of reliability of moral reasoning, and subsequently a sufficiently low level to make our moral beliefs improbable. For this reason we have no credence function equivalent to Math Skill which allows us to get some rough value for Likelihood, and potentially show that it is plausibly less than $M$.

The more profound problem however is that on the debunker’s own terms we cannot establish such a function. Establishing a credence function for moral reasoning would require looking at how often we’ve managed to get moral beliefs right in the past, and what that required. However, in response to some realists who attempted defences of moral realism by appealing to some moral beliefs we know to be true (e.g. the goodness of survival), Street (2008) and Joyce (2016) have argued that such appeals are ‘trivially question begging’ since the truth of those beliefs are in question. If we accept this claim by the debunkers, this bars any appeals to moral knowledge. This response now reflects back on the debunkers however, as if we cannot establish when our moral reasoning has succeeded, then we cannot establish a credence function.

Could the debunker argue that he doesn’t need to establish that the corrective capacity of moral reasoning is insufficient, but that rather it is the burden of the realist to show that it is sufficient? I think this is implausible. If we had some reason to believe that it was more likely that $Likelihood < M$ than $Likelihood \geq M$, then we might plausibly require of a realist to show that this is not the case. As it stands now however we have no idea about Likelihood. Right now all the

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76 Street (2008, p.215)
debunker can say is that it is possible that our moral reasoning is too weak to correct for evolutionary influences. But of course it is possible that I am profoundly mistaken in my ability to do math, but that possibility alone doesn’t seem to undermine my beliefs in Math Test for example. For the same reason, neither does the possibility of moral reasoning being too feeble undermine the realist’s moral beliefs.

I believe to have shown that if Street claims that ‘though the power of rational reflection might lead us towards ... independent normative truths, this power would be too weak’ she is speculating. Analogies like Street’s Bermuda example are excellent for getting a grasp of the issues at hand, but also produce the deceptively attractive idea that, like we have some sense of difficult it would be to reach Bermuda, we have some idea of how difficult it would be to ‘hit upon’ moral facts. However, once we allow for some tracking influence we have no idea whether that’s analogous to having a pair of broken oars and a rusty compass, or a jet engine and a GPS-tracker. For the same reason, realists can stop worrying about evolution having brought us sufficiently ‘close’ to moral facts; there is no translation between closeness and the success of moral reasoning. Therefore the argument from improbability cannot add anything to the debate once we accept Realist Explanation, meaning it has not contributed to the case against moral realism.

77 Parfit (2011, p.532)
4. Conclusion

The appeal of EDAs lies in that they are highly intuitive, and appear to provide anti-realists with a way to use science to finally refute the ‘queer’ view that is non-naturalist moral realism. As I have attempted to show here, the novelty of evolutionary influences on our moral beliefs is not revolutionary. Nothing about it prevents the realist from explaining her moral beliefs like she otherwise would, by saying that we correct for distorting influences – be them cultural or evolutionary – with the use of reason. Street’s argument attempts to make the debunking case stronger by appealing to improbability, but as I have shown this commits evolutionary debunking to controversial claim in probability theory without any benefits to the debunkers. Furthermore, the potential bearing of any of these arguments rests on the assumption that tracking does not amount to Nozickian sensitivity. For these reasons I conclude that the EDAs here considered have little bearing on moral realism.

If I am correct, does this mean we should give up on EDAs? The answer is no, for two reasons. Firstly, even though I have done my best to be exhaustive in my consideration of EDAs, I have inadvertently been unable to cover some more idiosyncratic arguments which could have independent merit. Secondly, though I argue that EDAs have not yet had any bearing on moral realism, I do not claim that empirical discoveries cannot have bearing on moral realism. In fact, I believe our discussion has made clear that they could.

For example, we have seen that the realist’s defence rests on the claim that moral reasoning is an application of a general capacity for abstract reasoning. This is however an empirical claim, which is up for falsification. Not only that, but it seems to be in tension with some theories about how our minds work such as the massive modularity thesis in cognitive science, and even

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78 As mentioned, these include e.g. Joyce’s (2006) appeal to capacity nativism and Mogensen’s (2014) EDA from phylogeny. I believe however that my arguments are applicable to both.

79 This is the suggestion that the mind is composed only of highly specialized ‘modules’ with limited domains of application (see e.g. Carruthers (2006)), which is not obviously commensurable with a general capacity for abstract reasoning applicable across domains.
some results from evolutionary psychologists. While other empirical discoveries could have bearing on the discussion, I believe this might be a particularly fruitful route for future debunkers to pursue.

Whether or not further empirics can contribute to new EDAs is left to future debunkers to show. For now however I believe we can conclude that EDAs have so far been unsuccessful, and that we’ll at least have to wait to see any Darwinian defeat obtain for the moral realist.

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80 See e.g. Cosmides & Tooby’s (2008) suggestion of multiple cognitive systems for normativity.
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