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# New Developments in the Cognitive Science of Religion

The Rationality of Religious Belief

## Chapter 9 The Epistemology of Genealogies

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**Abstract** Beliefs have genealogies. Can tracing a belief's genealogy illuminate the epistemic quality of the belief? This paper sets out a general epistemology of genealogies. As it turns out, genealogies for beliefs come in two sorts: those that trace a belief to some mental event that doubles as evidence for the belief and those that do not. The former have the potential to undercut the belief, rebut the belief, or—importantly—both. The latter have the potential to reinforce the belief or rebut the belief but—importantly—not undercut it. The ultimate conclusion is that there is a role for genealogies in the epistemic appraisal of our beliefs, but this role will be circumscribed by the availability of clear and compelling genealogies.

**Keywords** Cognitive science of religion · Debunking arguments · Genealogy · Genetic fallacy · Generality problem

### 9.1 Are Genealogies Relevant for Philosophy?

All of us have genealogies. Mine can be traced through Scottish immigrants who came to the New World looking for work. My uncle is very interested in genealogies and has traced ours through nine or ten generations. He says it helps him to understand himself. Maybe so.

Beliefs have genealogies, too. I believe that China is building a replica of the Titanic. I read this in a news article the other day and have believed it ever since. Some philosophers say that tracing a belief's genealogy can help us to understand the epistemic quality of the belief. But how so?

This paper sets out a general epistemology of genealogies. As it turns out, awareness of genealogies can, indeed, affect the epistemic quality of our beliefs. But how and when they do so is not obvious. The extant philosophical literature obfuscates

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the issue further. But getting clear on this issue is important given the burgeoning evolutionary debunking literature surrounding ethics and religion.

Briefly, genealogies for beliefs come in two sorts: those that trace their belief to some mental event that doubles as evidence for the belief and those that do not. The former have the potential to undercut the belief, rebut the belief, or—importantly—both. The latter have the potential to reinforce the belief or rebut the belief but—importantly—not undercut it. The ultimate conclusion is that there is a role for genealogies in the epistemic appraisal of our beliefs, but this role will be circumscribed by the availability of clear and compelling genealogies.

## 9.2 Genealogies & Contemporary Debunking Arguments

What are genealogies of beliefs and why should philosophers care about them? Start with the first question. In general, a genealogy for a belief is a causal explanation of the belief that cites the conditions under which the belief was produced. In this respect, genealogies for people and genealogies for beliefs have a lot in common. With people, there is a causal chain extending indefinitely into the past. There are proximate locations in the chain (my parents to me) and more ultimate locations in the chain (my great-grandparents to me). No single thing is THE cause of me. The same goes for beliefs. My reading the news article caused me to believe that China is building a replica of the Titanic, the news article has its own causal history, and so on. No single thing is THE cause of my belief.

But why should philosophers care about the specific conditions which give rise to belief? That sounds like an investigation for cognitive science, not philosophy. To the contrary, many philosophers have argued that awareness of a belief's genealogy can have important epistemic implications. Suppose you believe that the world is ending on December 31st of this year. You then discover the genealogy of this belief: it came from testimony of a charlatan who has been (unsuccessfully) predicting the end of the world each year for many years. When you learn this, your belief that the world is ending on December 31st of this year is in epistemic trouble. Or consider a prominent thought experiment from Joyce (2007):

Suppose that there were a pill that makes you believe that Napoleon won Waterloo, and another one that makes you believe he lost....Now imagine that you are proceeding through life happily believing that Napoleon lost Waterloo (as, indeed, you are), and then you discover that at some point in your past someone slipped you a "Napoleon lost Waterloo" belief pill....Should this undermine your faith in your belief that Napoleon lost Waterloo? Of course it should. (p. 179)

In this scenario, your belief that Napoleon lost Waterloo has a strange genealogy. And learning about this genealogy has epistemic implications.

Contemporary philosophers are aware of this and have invoked genealogies to show that beliefs in certain domains are in epistemic trouble by appealing to "nature" influences, "nurture" influences, or both. Moral beliefs are a popular target. Some

genealogical arguments against morality cite irrelevant environmental pressures in the production of our moral beliefs. Thinkers as diverse as Nietzsche (1887), Prinz (2007) and Haidt (2012) claim that moral beliefs are traceable back to irrelevant social or emotional influences. Other arguments cite irrelevant biological (especially evolutionary) pressures in the genealogy of our moral beliefs. These arguments are often called evolutionary debunking arguments, and philosophers like Joyce (2001), Sinnott-Armstrong (2006), and Street (2006) argue that our cognitive faculties are designed not to discover moral truths but rather to enhance our survival by suppressing selfish interests in an effort to build a more cooperative animal. Awareness of such a genealogy, they argue, should leave us moral skeptics.

Much the same can be said about religious beliefs. Some genealogical arguments against religion cite irrelevant environmental pressures in the history of our religious beliefs. For example, Hick (1997) and Kitcher (2011) point out that religious belief is often a result of contingent social circumstances like where one is born. Here, too, one finds evolutionary debunking arguments against religion. Scholars like Dennett (2006), Bulbulia (2013), and Wilkins and Griffiths (2013) argue that our cognitive faculties are not designed to discover religious or supernatural truths. Instead, such beliefs are either the cognitive equivalent of misfires from normally truth-sensitive equipment or else are adaptive illusions in the same vein as moral beliefs. Awareness of such a genealogy of religion, they argue, should keep us out of church.

And when it comes to evolutionary debunking arguments, one can take this line of reasoning further. Plantinga (1993, 2011) has argued that any belief traceable back to a mind shaped by unguided natural selection is going to be in epistemic trouble. This is the (in)famous evolutionary argument against naturalism. According to this line of thought, belief in unguided natural selection is self-undercutting because once you discover the genealogy for that belief includes a mind geared towards reproductive fitness rather than truth, you no longer have a reason to trust that very belief.

Each of these is an application of general epistemic principles about genealogies to particular domains of belief. In order to evaluate the success of any particular application, we need to be clear on the general epistemic principles governing genealogies.

## 9.3 The Genetic Fallacy

Evaluating the success of particular debunking arguments requires having a general framework for thinking about the epistemic implications of genealogies. But some might consider the construction of such a framework a fool's errand. That's because—as every logic student has ever been taught—*where* a belief comes from is irrelevant for whether it's true or reasonable to believe. To insist otherwise is to commit the genetic fallacy.

Put simply, the genetic fallacy says that it's illicit to infer anything about the truth or reasonability of a claim on the basis of its origins.<sup>1</sup> Where a belief comes from is one thing. Whether it's true or false is another. When these two features get confused, a fallacy is sure to follow.

To illustrate the genetic fallacy, students of logic are often fed a highly-contrived example. Here's my favorite: August Kekule was a scientist working hard to discover the chemical shape of the benzene molecule. In his sleep he dreamt of a snake devouring its own tail, and this caused him to believe that benzene is a ring. He later confirmed this idea through various empirical experiments.<sup>2</sup>

If you were an audience member at a conference where Kekule presented his experimental evidence, it would be silly of you to critique his belief because it first came to him in a dream. And what is supposed to explain this silliness is the fact that the context of discovery is irrelevant for the context of justification. In brief, no information about the cause/discovery of some claim can impact the reasonability/justification for the claim. To think otherwise is to commit the genetic fallacy.

There's just one problem: there's no such thing as a genetic fallacy.

Just because the causal history of a belief is *sometimes* irrelevant doesn't prove that it's *always* irrelevant. But since the genetic fallacy claims that a source is always irrelevant, the fallacy is claiming more than has been proven. There is no fallacy here. To the contrary, the causal history of a belief can be a reason to think a belief is true or false and/or a reason to think that it is reasonable or unreasonable.

For example, consider the following case. You draw a marble out of an urn, but you have not yet looked at it. You then discover something about the source of the marble, which is to say, you learn something about the urn. You learn that the urn contains 90% white marbles and 10% black marbles. Does this discovery about the marble's source give you any information about its color? Yes—it gives you good reason to think the marble is white.

Now compare this to the case of belief. You trace the genealogy of a belief back to a belief-producing mechanism that produces 90% true beliefs and 10% false beliefs. In other words, you learn that the belief-producing mechanism is largely reliable. Does this discovery about the belief's source give you any information about its truth? Yes—it gives you good reason to think the belief is true. And, of course, the same goes for tracing a belief back to an unreliable source.

The conclusion is that genealogies can have epistemic implications despite protests to the contrary. There is no such thing as a genetic fallacy. That said, as the Kekule story makes clear, there are at least some cases in which a belief's genealogy

is irrelevant. Surely it was cases like these that motivated people to articulate the genetic fallacy in the first place. Once again, what we need are general principles that can tell us when a genealogy is epistemically relevant and when it is not.

## 9.4 Two Types of Genealogies

Much of the confusion in the philosophical literature on debunking is based on a failure to distinguish two different sorts of genealogies. Sometimes a belief's genealogy will include the evidence that supports it and sometimes it won't. Which one is the case will determine the range of epistemic implications the genealogy might have.

The difficulty arises because of an ambiguity in the word 'because'. When I say that I believe that China is building a replica of the Titanic because I read it in the news, the 'because' in this claim could be read in either a causal sense or in a reasons-sense. On the first, I am saying that my reading about the replica was a causally sufficient condition (given background conditions) for my belief about the replica. On the second, I am saying that my reason for thinking that it's true that China is building a replica is the testimony I received when I read the article. So the question "Why do you believe X?" is ambiguous. It could be asking for causes or reasons (cf. White 2010).

In some cases, the cause of a belief and the reason for a belief come apart. For example, in the Kekule case, the cause of his belief (we can stipulate) is the dream. But the reason for his belief is his experimental evidence. The cause and the reason are different. But oftentimes the cause of a belief and the reason for a belief are the same. I believe that there is a tree in front of me. The genealogy for this belief is traceable back to a perceptual experience. In this case, what caused me to believe that the tree is in front of me is the very thing that I would cite as evidence for the tree's being in front of me. The evidence is part of the causal chain.

The difference between these two types is both significant and overlooked. Genealogies that trace back to evidence have the potential to undercut the belief, rebut the belief, or—importantly—both. Genealogies that do not trace back to the evidence can reinforce the belief or rebut the belief but—importantly—not undercut it. Let's start with the latter case.

### *Genealogies Not Traceable to Evidence*

Consider a case where a belief's genealogy can be described without mention of the evidence that supports the belief. The Kekule case is such an example. In such a situation, a genealogy might still have epistemic implications. That's because the genealogy is still in a position to tell us something about the reliability of the belief-production even if it can't tell us anything about the quality of whatever other evidence a belief might have going for it.

<sup>1</sup> Even Wikipedia knows what the genetic fallacy is: [https://en.wikipedia.org/wiki/Genetic\\_fallacy](https://en.wikipedia.org/wiki/Genetic_fallacy)

<sup>2</sup> You might think this is a debate about what contemporary epistemologists call the "basing relation" which is the relation between a belief with a particular propositional content and the thing on which the belief is "based." Whether this is so depends on what one takes the basing relation to be. If the relation is understood in a causal way, then the question of a belief's genealogy and the nature of a belief's basing amount to the same thing: what causes or explains why the person in question has a belief. If the basing relation is understood in a more epistemic way, then these are different questions. For a taxonomy of various basing relation cases, see Korcz 1997 and Jäger 2016.



Unfortunately, the current literature is unclear about the role that reliability plays in genealogical disputes. For example, many authors talk about belief-production processes being “off-track” without carefully spelling out what this means. For example, in a widely discussed paper, Wilkins and Griffiths 2013 say that “An ‘off-track’ process is one that does not track the truth: it produces beliefs in a manner that is insensitive to the truth of those beliefs,” (p. 133). But notice that there are two ways in which a mechanism can be insensitive to the truth of a belief: it might have no correlation with the truth or it could be correlated with what’s false. Which it is will determine the epistemic impact of the genealogy.

It is clearer to sort the reliability of belief-producing mechanisms into three camps: truth-tracking, falsehood-tracking, and neither (no correlation with either truth or falsity). Suppose a genealogy shows that a belief hails from a truth-tracking mechanism. Other things being equal, this is new evidence in its favor. This genealogy vindicates the belief in question.

Or suppose a genealogy shows that a belief hails from a falsehood-tracking mechanism. Again, other things being equal, this is new evidence against the belief. It’s a reason to think the belief is false regardless of one’s other available evidence. The fact that a belief hails from a falsehood-tracking mechanism will provide an epistemic downgrade no matter what else the belief has going for it. And so in this case the genealogy serves as a rebutting defeater for the belief.

Finally, consider a genealogy that traces a belief back to a source with no correlation with either the true or the false. In this case, the genealogy has no epistemic implication whatsoever. Why? Well, the genealogy provides no new information, and only information can provide new evidence or serve as a defeater. In Bayesian terms, information without a correlation to the truth won’t affect posterior probabilities of a proposition because it won’t budge the prior probabilities in either direction (Jong and Visala 2014).

In particular, note that a genealogy of this latter type cannot serve as an undercutting defeater for the belief. That’s because undercutting defeaters have to take away a reason for thinking that a belief was true, and learning about a genealogy *that is not traceable to evidence* cannot, by definition, take away a reason for thinking that a belief is true. This point will be key to clearing up some of the confusion in the evolutionary debunking literature described in Sect. 9.5.

So, genealogies not traceable to evidence will be vindicating if the source of the belief is discovered to be truth-tracking, rebutting if the source of the belief is discovered to be falsehood-tracking, and will have no implications whatsoever if the source of the belief is just as reliable at producing true beliefs as false beliefs. What about genealogies that DO include evidence for the belief?

## Genealogies Traceable to Evidence

In many, perhaps most, genealogies, the evidence for a belief will figure somewhere in the production of the belief. In these cases, a genealogy has more epistemic potential. In addition to finding out about the general reliability of the belief source, we might also find out that the evidence on which the belief is based is a good indicator of the truth, a good indicator of the false, or neither. The epistemic implications of the genealogy will co-vary with these options. Three twists on the same example will make this clear.

Suppose you believe that your new car is full of gas. The genealogy for this belief includes your perceptual experience of looking at the gas gauge. And, in this case, the evidence for your belief coincides with part of the genealogical story: you think the car is full of gas because of your perceptual experience as if the gauge reads ‘full’.

First twist: your friend isn’t convinced. So he looks into the genealogy of your belief. As part of his empirical investigation, he determines that the gas gauge is a reliable indicator of the truth. When the gauge reads ‘full’, the tank is, indeed, full. When you learn this empirical fact from your friend, it confirms your belief. The evidence you had becomes, in a sense, *stronger* evidence than it was before. Your belief that the gas tank is full has been vindicated.

Second twist: suppose as part of his empirical investigation, your friend determines that the wire connecting the gas tank and the gas gauge has been severed. The needle on the gauge moves freely so that it doesn’t correlate with the contents of the tank. When you learn this empirical fact from your friend, it undercuts your belief. You should no longer believe that the tank is full, but neither should you believe that the tank is empty. You should withhold belief.

Third twist: suppose your friend determines that the factory had wrongly installed the float in the car’s gas tank. In fact, when the car is empty, the gauge will read ‘full’, and when it is full, the gauge will read ‘empty’. The gauge is a reliable indicator of what’s *false*. When you learn this empirical fact from your friend, it disconfirms your belief. And here’s what’s interesting: this genealogy both undercuts and rebuts your belief that the gas tank is full. It undercuts it because it takes away the reason you had for thinking it was true. But at the same time it rebuts it because it provides a reason for thinking that the belief is false. So one and the same bit of information can be both undercutting and rebutting.

In sum, genealogies traceable to evidence will provide additional evidence if the genealogy informs us about the quality of the evidence as an indicator of truth. If the evidence is discovered to be truth-indicative, it will be strengthened by the genealogical story. If the evidence is found to have no correlation with what’s true or false, the genealogy will serve as an undercutting defeater for the belief. And finally, if the evidence is discovered as falsehood-indicative, it will serve both as an undercutting and a rebutting defeater for our belief.

## 9.5 Application to Particular Domains

How does this general epistemic framework apply to particular domains of inquiry, especially debunking arguments against moral or religious beliefs? An example from the moral realm will make the point clear. Suppose you believe that incest is morally wrong. Your reason/evidence for this belief is that it seems wrong upon reflection. However, you are ignorant of the genealogy of this belief. Here's how awareness of the genealogy might have epistemic impact.

**Case 1:** You learn that the source of your belief is maternal testimony you received as a child. In this case, the cause of your belief does not include your evidence for the belief (remember: we stipulated that the evidence for the belief is that it seems wrong upon reflection). Furthermore, you find out that your mother's moral views are mostly false. What is the epistemic relevancy of this genealogy? It provides you with a rebutting defeater but not an undercutting defeater. It does not remove your stated reason for thinking that incest is wrong, but it provides you with positive grounds for thinking that your belief that incest is wrong is false—after all, it was caused by a source that produces mostly false beliefs.

**Case 2:** You learn that the cause of your belief is the seeming state itself. In this case, the cause of your belief doubles as the evidence for your belief. Furthermore, you find that moral seemings are unreliable guides to moral truth: they are right only half of the time. Moral seemings are neither indicative of the truth of the matter, nor are they indicative of the falsity of the matter. What is the epistemic relevancy of this genealogy? It provides you with an undercutting defeater but not a rebutting defeater. The genealogy removes your reason for thinking that incest is wrong, but provides you with nothing further.

**Case 3:** Just as in the previous case, you learn that the cause of your belief is the seeming state itself. But in this case, you find out that moral seemings are reliable guides to moral *falsities*: most of the moral beliefs caused by moral seemings are false. What is the epistemic relevancy of this genealogy? It provides you with both an undercutting and a rebutting defeater. It removes your reason for thinking that incest is wrong, and it also provides you with a reason to think that your belief is false.

These cases illustrate a number of lessons about applying the general epistemic principles about genealogies to specific cases. Here are the five most important lessons:

**Lesson 1:** when it comes to genealogical debunking arguments in particular, philosophers working in this area assume that genealogies can undercut but not rebut or provide positive evidence (e.g. Kahane 2011, p. 4). But this is wrong. It's in principle possible that an investigation into the genealogies of moral or religious beliefs vindicates these beliefs with new evidence or rebuts them (e.g. were

we to find out that our belief-forming dispositions track what's false). Debunking isn't the only option.

**Lesson 2:** one and the same piece of information can both rebut and undercut. It is widely assumed that the distinction between an undercutting defeater and a rebutting defeater is exclusive. It's not.

**Lesson 3:** since the epistemic implications of a genealogy depend on which sort of genealogy is in play, we need to clarify whether the purported genealogies for religious and moral beliefs are traceable to evidence or not. And if so, we need to ensure that the evidence is **ACTUALLY** in play by people defending their beliefs.

For example, Bulbulia 2013 argues that our best scientific accounts of religious belief show that belief in gods would be widespread regardless of whether such belief was true or false. He then employs impeccable Bayesian reasoning to show that this genealogy significantly weakens certain epistemic grounds for belief in gods. However, the particular evidence that he undercuts is the evidence that religious belief in gods is widespread. But this is not a reason that anyone actually relies on to defend theistic belief—it's not as if when pressed for why they believe in God, theists reply "because lots of people do."

So on the one hand, Bulbulia is right: his Bayesian analysis explains why the evidence that lots of people believes in gods is of little value. Since we would expect widespread belief in gods regardless of whether the belief is true or false, the existence of widespread belief neither confirms nor disconfirms the existence of gods. But this is a hollow victory, for virtually no believer in gods cites widespread belief as evidence for the truth. So the debunking argument does not target evidence that people *actually* cite in favor of their religious beliefs.

**Lesson 4:** if it's a genealogy that does *not* include evidence, we must be clear about the source of the belief in order to draw any epistemic implications. This is because the *only* possible way for this sort of genealogy to have an epistemic impact is based on the reliability of the belief production process. When it comes to the sorts of debunking arguments in the current literature, this lesson should highlight two often-overlooked requirements.

First, these sorts of genealogical stories must overcome the generality problem, a demarcation problem that some philosophers think is insoluble (e.g. Conee and Feldman 1998). The difficulty comes in marking the boundaries of belief-forming processes. When I believe that China is building a replica of the Titanic, what process causes the resultant belief? What is the relevant source?

Here's an example from the evolutionary debunking literature. Cognitive psychologists have identified a module dubbed the Hyperactive Agency Detection Device (HADD) as part of the human mind (Barrett 2004). It is a mental module that is designed to clue into signs of agency in the surrounding environment. The idea is that the human mind survived the pressures of natural selection only by developing an expertise in flagging relevant information. And much of the information relevant to survival has to do with the existence of beings with minds, i.e. agents. And so when you hear rustling in the bushes, HADD kicks in to make you think that there is something out there.

However, so the story goes, this module has a hair-trigger and is designed to err towards the production of false positives rather than false negatives (hence the name 'hyperactive'). This means that the module sometimes produces agent indicators when there aren't really any agents around. This, in turn, can explain beliefs in gods, spirits, etc. (Guthrie 1993, Barrett and Lanman 2008, Boyer 2001). Ancient peoples thought they saw agency in the world when there was none. And so religious beliefs in gods, ancestors, etc. can be traced back to an unreliable cause.

According to those skeptical of religion, this sort of genealogy is supposed to undercut religious belief in supernatural agents. But whether it does so depends on whether or not HADD is a reliable source of beliefs. Does the HADD module usually get it right? Well, it's hard to say. It would depend on how you draw the boundaries of the module (cf. Murray and Goldberg 2009). You're probably willing to say that HADD has a pretty good track record with other human agents. Typically when we think there is another human in our environment, we are right. So on this way of measuring reliability, HADD is pretty reliable. And so granting the causal connection between HADD and gods, this way of cashing out the genealogy provides an epistemic upgrade to religious beliefs!

On the other hand, maybe we should measure only the quasi-religious beliefs produced by HADD, and here the false positives are legion: fairies, goblins, trolls, ancestors, gods, demons, angels, etc. (see Law 2016). So many false positives makes HADD look like an unreliable source of beliefs. And if this is the source that gives rise to my belief in God, then this is a genealogy with serious epistemic implications.

So which is it? How should we construe the boundaries of HADD? The problem here is straightforward: if there is no way to determine the boundaries of belief-forming processes, then there is no way to establish the reliability of belief-forming mechanisms. And if there is no way to establish the reliability of belief-forming mechanisms, then there is no way to establish the implications of evidence-free genealogies, either.

Second, even if we could nicely partition cognitive mechanisms in this way, it is often difficult to know which mechanisms are involved in the production of any given belief. In some cases, this is not a problem. I know that China is building a replica of the Titanic, and I can confidently point to my reading of a newspaper as the source of this belief. So the causal mechanisms must be those involved in reading a newspaper.

But compare this easy case with the more difficult cases discussed in evolutionary debunking arguments. For example, many people believe that God loves them. What is the mechanism behind this belief? One option is HADD—people have a sense that there is a loving being in their immediate environment. Another option is testimony—people learn that God loves them from their parents or church elders. Another option is rational reflection—people think about philosophical worldviews and come to think that the world was created and governed by a loving being. Another option is religious experience—people have perceptual or mystical experiences of a loving God. Which is it? (cf. Visala 2011)

The problem is that no evidence-free genealogy of a belief will have any epistemic implications unless specifies which of the many candidate mechanisms are actually playing a causal role. And when it comes to moral and religious beliefs, this is no small feat.

Lesson 5: genealogies alone tell us nothing about the all-things-considered epistemic status of a belief. Consider again the marble analogy. You draw a marble out of an urn, and before you look at it you learn that the urn contains 90% white marbles and 10% black marbles. This genealogy gives you good reason to think the marble is white. But then you open your hand and see that the marble is black. Your perceptual evidence swamps your genealogical evidence. It's all-things-considered reasonable to think that the marble is black.

Or consider the case of Kekule. Suppose he knows that beliefs caused by dreams are typically false. That gives him a reason to think his benzene belief is false. But then he conducts empirical experiments which confirm Benzene is, indeed, shaped as a ring. This experimental evidence swamps his genealogical evidence. It's all-things-considered reasonable to think that benzene is a ring.

So, too, with genealogical arguments against religion or morality. They will never be in a position to tell us whether religious or moral beliefs are *all-things-considered* justified. It will be a matter of weighing different evidential input.

How such a process of belief-revision turns out will depend upon many things, but in particular it will depend on (a) the alternative evidence you already have for the belief in question and (b) the availability of new evidence for the belief in question. By way of illustration, consider again the Napoleon pills with which we began. You find out without a shadow of a doubt that your belief that Napoleon lost the battle of Waterloo was caused by swallowing a pill in a philosophy experiment. How devastating is this genealogical information?

Concerning (a), suppose you are a European historian who studied the Napoleonic wars, visited the relevant museums and even toured the battlefield of Waterloo. In this case, finding out the causal origins of your belief should not fluster you: the context of discovery is truly different from the context of justification. You have plenty of evidence for your belief, and it doesn't matter that it is traced to an unreliable source. Yes, the genealogical information provides an epistemic downgrade to your belief, but that downgrade is so slight in the face of all of your evidence, that it matters little to the *ultima facie* justification of the belief.

When it comes to evolutionary arguments against morality or religion, this example shows that it is too quick to move a premise showing that a belief-forming process is off-track to a conclusion that a belief formed by the process is unjustified (e.g. Nola 2013 p. 168). That's because genealogical information has *ultima facie* negative epistemic implications only for unreflective believers (Jong and Visala 2014). If your religious or moral beliefs are reflective (i.e. philosophically supported, justified, or evidenced), then these beliefs are not at great risk from genealogical information. Even if it turns out that these beliefs have epistemically questionable causal origins, they have other things going for them.



Concerning (b), suppose you aren't a historian and hold merely the unreflective belief that Napoleon lost the battle of Waterloo. In these circumstances, the downgrade provided by the Napoleon pill genealogy is strong enough to leave you a skeptic on the issue at hand.

But how serious an implication this is depends on how easy it would be to gain the new evidence. In this case, it's no big deal. Upon learning about the Napoleon pill, you lose your justification that Napoleon lost at Waterloo. You then pick up your phone and say "Siri, did Napoleon lose the battle of Waterloo?" and in less than 5 seconds your justification is back.

While Siri is markedly less helpful with philosophical matters, the point is the same. So long as evidence or justification for moral and religious beliefs is available, any genealogical debunking argument can be easily outflanked. In these cases, even unreflective belief that is appropriately downgraded by genealogical considerations can be bolstered by justification provided after the genealogical information is weighed.

In conclusion, there remains much work to be done if evolutionary debunking arguments are to be the tour de force they are advertised to be. Advocates need to clarify which of the two sorts of genealogies they want to describe and then pay attention to the details required for each. Only then will such skeptical challenges to religious and moral belief be successful.

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