When Is Genetic Reasoning Not Fallacious?

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ABSTRACT: Attempts to evaluate a belief or argument on the basis of its cause or origin are usually condemned as committing the genetic fallacy. However, I sketch a number of cases in which causal or historical factors are logically relevant to evaluating a belief, including an interesting abductive form that reasons from the best explanation for the existence of a belief to its likely truth. Such arguments are also susceptible to refutation by genetic reasoning that may come very close to the standard examples given of supposedly fallacious genetic reasoning.

KEY WORDS: abduction, argument, causal evaluation, explanation, fallacy, genetic fallacy, induction, informal logic, logic, reasoning

I. INTRODUCTION

Many university teachers, myself included, warn their students against attempting to evaluate a certain belief or theory on the basis of its historical or causal origin. Indeed, we have a name for the mistake committed by those who attempt such an evaluation: the *genetic fallacy*. Despite the inclusion of this item on our canonical lists of informal fallacies, it is now often recognized that the causal history of a belief or position is sometimes relevant to its epistemic status and even its truth or falsity. So it is worth taking another look at the genetic fallacy. Exactly what is it that makes genetic reasoning fallacious when it is fallacious? Are there cases of non-fallacious genetic reasoning, and if so, under what conditions? I shall not attempt in what follows to give exhaustive answers to these questions. I shall, however, sketch certain very important forms of non-fallacious genetic reasoning. In particular, I shall focus on certain forms of abductive arguments that argue from the best explanation of the origins of a certain belief to the truth of that very belief. These arguments, and responses to them, have an importance that is obscured by the relatively little attention and scrutiny they have received. What is interesting about these arguments in the context of discussion of the genetic fallacy is not only that they themselves represent a form of non-fallacious genetic reasoning, but also that the counterarguments to which they are logically susceptible can take forms very similar to the most infamous cases of the genetic fallacy.

II. THE GENETIC FALLACY AND BELIEF-FORMING PROCESSES

The meaning of the term 'genetic fallacy' seems to have widened since its introduction, probably in the 1920s or 1930s.[1] It was originally used to describe a certain misuse of scientific method, specifically, confusing an analysis of the logical structure of a scientific theory with an analysis of its history or origin, described by some as conflating the context of justification with the context of discovery (see, e.g., Cohen and Nagel, 1934; Salmon, 1973). It has also been used in a more general way to speak of confusing something's origins with its nature, whether or not that something is a belief or theory (see, e.g., Goudge, 1961; Wheelwright, 1962).[2] The way in which the term seems most often used today seems restricted to evaluations of beliefs or theories, though the theory or belief in question need not be scientific. Yet even on this understanding, the exact formulation or definition of the genetic fallacy differs from one logic text to another. The fallacy is often subsumed under the *ad Hominem* fallacy (as, e.g., in Copi, 1953), because *ad Hominem* argumentation often involves scrutiny of the reasons or motives that may have caused a person to form a belief or advance an argument.

Other logic texts treat it separately, though even then there is disagreement. On some formulations (e.g., Werkmeister, 1948; Freeman, 1967; Yanal, 1988), any evaluation – positive or negative – of a statement, belief or argument on the basis of its causes or history can constitute the genetic fallacy. On this understanding, one can commit the genetic fallacy in concluding that a certain statement or belief is *true* because of the way in which it came about. On certain other formulations (Huppé and Kaminsky, 1956; Churchill, 1986), the fallacy is only committed when the causal or historical origin of a belief, statement or argument is taken as a reason to *reject* it. Strangely, sometimes the genetic fallacy is *defined* so that it only covers attempts to discredit a belief based on its origin, but the explanation given for why it is fallacious would apply equally well towards attempts to *support* a belief based on its origin. Morris Engel (1986, p. 194), for example, *defines* the genetic fallacy as 'a type of argument in which an attempt is made to prove a conclusion false by condemning its source or genesis', but explains its fallaciousness by claiming that 'how an idea originated is irrelevant to its viability.' If this were right, it would seem equally fallacious to try to prove a conclusion *true* by praising its source or genesis.

For my own purposes, 'genetic reasoning' can be understood broadly, as any attempt to support *or* to discredit a belief, statement, position or argument based upon its causal or historical genesis, or more broadly, the way in which it was formed. But interestingly, when the issue is probed a bit deeper, we shall see that while both forms of genetic reasoning have fallacious and non-fallacious instances, genetic reasoning resulting

in a positive evaluation is far more likely to be successfully used in a non-fallacious way than genetic reasoning resulting in a negative evaluation.[3]

The genetic fallacy is usually seen as falling in the category of *fallacies of relevance*, alongside such notorious forms of reasoning as *ad hominem*, *ad misericordiam* and *ad populum* reasoning. These are seen by many as fallacious because such things as the identity of who makes a statement, has a belief or advances an argument, and what brings him, her or them to do so are all taken to be generally irrelevant to a statement's truth or an argument's soundness. Whether or not a statement or belief is true is entirely a matter of its *content*. If the content of a belief is *that the cat is on the mat*, then the truth of that belief is determined entirely by whether or not the cat is on the mat. If the cat is in fact on the mat, then the belief is true regardless of whether the belief is held by a priest or by a convict, by a man or by a woman, by a liberal or by a conservative, and regardless of whether it was caused by perception, an overactive imagination, or a blow to the head. Similarly, the soundness of an argument is determined entirely by its logical validity and the truth or falsity of its premises. If an argument is valid and has true premises, the argument is sound, regardless of the culture, class, race, gender, sexual orientation and political motives of the person advancing it, and regardless of the historical circumstances in which it is advanced.

It is not altogether easy to cite obvious examples of the genetic fallacy in history. Certainly most professional scientists and philosophers these days are sufficiently well trained to avoid it. Yet the fallacy still does arise, especially in the reasoning of non-specialists. The fallacy is arguably common in politics, in which platforms are sometimes criticized in virtue of having been motivated by election or fund-raising strategy. A certain politician may have decided to advocate a certain position on gun control only because of a study showing that her constituents would not elect her otherwise. Certainly it would be fallacious to infer that her position on gun control is wrong simply because of what caused her to adopt this standpoint. Suppose instead that she was not motivated by election strategy in adopting this position, or even that advocating gun control hurt her attempts to secure campaign contributions. In this case we might applaud her courage in taking this stand despite its financial disadvantages, but, again, it would be fallacious to infer that her position on gun control must be correct because of the circumstances in which she chose to adopt it. Here we have two cases of fallacious genetic reasoning, one resulting in a negative evaluation of a position, another in positive evaluation.

Although in introductory logic texts, such 'fallacies of relevance' as the *ad Hominem* are usually presented as universally invalid, there has been increasing awareness that such forms of reasoning can at times have rhetorical, and sometimes even logical, relevance (see, e.g., Minot, 1981; Hinman, 1982; Brinton, 1985). The case is no different with the genetic fallacy.[4]

The gulf between discussion of the content of a belief or statement and discussion of its causes does not always exist. After all, according to many contemporary theories of meaning and reference, the causal history of a word or concept in part determines the semantic content of the statements or judgments in which it plays a part. The gulf between content and cause of a belief is also non-existent with certain beliefs that are directly about themselves, or beliefs that are about a range of beliefs in which they are included. The belief that *all beliefs are caused by perception* and the belief that *this belief was caused by perception*, can likely be shown to be false by examining their own causal histories.

But there are much more interesting cases, which can perhaps be best appreciated by considering some recent theories in epistemology. Many epistemologists hold that whether or not a belief is justified, and/or whether or not it constitutes 'knowledge', depend on the causal process leading to the formation of the belief, and these views would be devoid of plausibility if it were true that the causes of a belief were wholly irrelevant to its truth or falsity. According to certain 'causal' theories of knowledge, for example, paradigmatic cases of knowledge are those in which a belief results from a causal chain originating from the very state of affairs making the belief true. If my belief that the cat is on the mat was caused by, among other things, *the cat's being on the mat*, then the way in which my belief was caused is not only relevant to the truth of my belief, it guarantees it.

Similarly, according to certain 'reliabilist' theories in epistemology, a belief is justified only if it is the result of a *reliable* belief-forming process, a process that produces true beliefs with a much higher frequency than it produces false beliefs. There are, of course, a number of difficulties on this approach in attempting to specify precisely what belief-forming processes are, how narrowly or widely they should be understood, and which process is most relevant to assessing any given belief. We cannot delve into these issues here. However, let us assume that visual perception of a mid-sized object performed by a person with 20/20 vision in broad daylight from a distance of 3–10 feet represents a paradigm of a highly reliable belief-forming process. Beliefs formed in this way are almost always true. If we suppose that my belief that the cat is on the mat was produced in this way, then, again, it would not be fallacious to infer that my belief is probably true based upon its causal history.

The point to be made here is not epistemological, but logical. One does not need to have any sympathy at all for reliabilist or causal theories of knowledge and justification to appreciate that the following argument schemes are not fallacious:

(1)   Person(s) S believes *p*.
         S's belief that *p* is the result of a chain of causation involving the state of affairs making *p* true.
         Therefore, S's belief that *p* is true.

(2)   Person(s) S believes p.
         S's belief that p is the result of belief-forming process f.
         Belief-forming process f is highly reliable, i.e., it produces true beliefs much more often than it produces false beliefs.
         Therefore, S's belief that p is true.

Here we have two forms of non-fallacious genetic reasoning. Scheme (1) is deductively valid, and scheme (2), though not deductively valid, is at least inductively strong. Here we have two ways in which one can support the truth of a belief based on the way in which that belief came about without committing the 'genetic fallacy'. (Although, as we shall note in the next section, arguments of form (1) are somewhat open to the accusation of being question-begging.)

Here we can also begin to gain some insight into why it is relatively more difficult to invoke genetic reasoning to argue for the falsity of a belief. If it is discovered that S's belief that p was *not* the result of a causal chain involving the state of affairs making p true, this in itself does not guarantee that S's belief is *not* true. (Indeed, it might not even mean that S's belief is unjustified.[5]) Similarly, if I discover that S's belief that p was not caused by a reliable belief-forming process, this also does not guarantee that S's belief is false, nor does it even make it *likely* that S's belief is false. Paradigmatic examples of unreliable belief-forming processes include forming beliefs based on what one wants to be true (as opposed to what one has evidence for), or by forming beliefs by trusting the answers given by a magic eight-ball to 'yes or no' questions. Normally, when we discover that the belief forming process leading to a certain belief was not reliable, we discover only that the belief forming process was random or haphazard, and therefore just as likely to have produced a false belief as a true one. Yet even magic eight-balls provide the right answer half of the time. Discovering that S's belief that p was caused by a random or haphazard process might – on certain accounts of justification – provide evidence that S's belief is unjustified, but it does not provide evidence that S's belief is false.

However, technically, there are valid analogues to forms (1) and (2) that end in a negative evaluation rather than a positive one, i.e.:

(3)   Person(s) S believes p.
         S's belief that p is the result of a chain of causation involving a state of affairs making p false.
         Therefore, S's belief that p is false.

(4)   Person(s) S believes p.
         S's belief that p is the result of belief-forming process f.
         Belief-forming process f is highly *anti-reliable*, i.e., it produces false beliefs with a much higher frequency than it produces true beliefs.
         Therefore, S's belief that p is false.

These argument schemes also represent non-fallacious uses of genetic reasoning. But such arguments, I think, are very rarely made, and could very rarely be made with any plausibility. Luckily, our cognitive abilities are not set up in such a way that it is very often the case that a certain state of affairs can *cause* us to believe in a contrary state of affairs, which is what would have to be argued in order to make an argument of the form (3). This is not to say it never happens. If an elaborate set of mirrors is set up around the mat so that from my perspective, what is under the mat appears to me to be on the mat, it may be that I am caused to believe that the cat is on the mat due, in part, to the cat's being under the mat. Such cases are, I hope, rare. In order to make good on an argument of form (4), one would have to argue that the belief-forming process leading to a belief is not only *unreliable*, but '*anti-reliable*', i.e., likely to lead to false beliefs. While asking eight-balls and wishful thinking are obviously unreliable, there is little reason to think they are *anti-reliable*. In the abstract, I suppose it is not difficult to imagine belief-forming processes that would be anti-reliable, e.g., believing the opposite of whatever your senses tell you, or believing the opposite of whatever the experts say. But again, luckily, in actual life, such strategies are rare (or so we can hope). There are, I suppose, exceptions, e.g., teenagers determined to believe precisely the opposite of everything their parents believe, or placing trust in an astrologer making a very detailed prediction about a person's life based on the stars.[6]

So far we have isolated a limited number of non-fallacious forms of genetic reasoning, and as we have seen, those that are used to form a positive evaluation of a belief are far more likely to be successful than those used to form a negative evaluation of a belief or statement. There are, I suppose, other forms of genetic reasoning, which, while not, strictly speaking of the forms above, are similar enough that one should be able to easily recognize their general validity, e.g.:

(5)   Person(s) S believes p.
        S's belief that p is the result of a causal chain involving the state of affairs q.
        If q, then p is likely to be true (or guaranteed to be true, etc.)
        Therefore, S's belief that p is true.

Even with such additions, these forms are still quite limited, and can only be used when we know in advance at least certain features of the causal history of a belief, and are able to identify certain of those features as directly relevant to an assessment of the truth or falsity of the content of the belief. We have not yet found any room for countenancing forms of genetic reasoning that evaluate a belief or argument based upon features of its causal history that do not relate in any direct way to the content of the belief or argument. Yet this is precisely what was to be expected. Surely the examples of the genetic fallacy usually cited by logicians really are

fallacious, such as those that argue against a belief based upon the class, gender, race, ethical character, or political motives of the people who formed the belief, or the historical or cultural circumstances in which it arose. Unless it could be argued, e.g., that beliefs formed by people of a certain class or living within a certain historical situation were *anti*-reliable, i.e., very likely to be untrue, we have not yet found any way of understanding these patterns of genetic reasoning as anything other than invalid.[7]

III. SELF-REFERENTIAL ABDUCTION

To advance a non-fallacious genetic argument of one of the forms sketched above, one would need to have knowledge of how a certain belief arose, either of the psychological process that lead to the formation of the belief, or the states of affairs involved in its causal history. Such information is often very difficult to come by. The causes of most of our beliefs are opaque, even to us, and certainly to most others. As a result, we usually come to what little knowledge we have about the causes of belief by hypothesis. *Reasoning to a hypothesis*, usually equated with *reasoning to the best explanation*, or *abductive* reasoning, has been the source of much controversy ever since Peirce suggested it as a separate category of inference.[8] There is, to my knowledge, no standardly accepted account of abduction among logicians. Yet it seems incontrovertible that insofar as we have any knowledge of what causes our beliefs, we often arrive at it by making conjectures as to what process (or processes) seems to provide the best explanation for what and how we believe. Indeed, Peirce himself sometimes described abduction as reasoning from effect to cause (e.g. Peirce, 1982, p. 180).

We have just seen that the causal history of a belief can be relevant to determining whether or not the belief is true, if, e.g., the belief was produced in part by the state of affairs making the belief true, or the belief was formed by a reliable belief-forming process. It may, of course, sometimes be the case that we are convinced – rightly or wrongly – that the best explanation for why a certain belief (be it ours or that of someone else) exists is that it was caused by such a truth-relevant process. In other words, the abduction we perform as to where the belief came from might itself provide all the grounds necessary for a non-fallacious genetic argument supporting the truth of the belief. Consider, then, the following more complex forms of genetic reasoning:

> (6) Person(s) S believes *p*.
> The best explanation for why S believes *p* is that S's belief that *p* is the result of a chain of causation involving the state of affairs making *p* true.
> Therefore, S's belief that *p* is true.

(7)   Person(s) S believes *p*.
        The best explanation for why S believes *p* is that S's belief that
        p is the result of belief-forming process *f*.
        Belief-forming process *f* is highly reliable, i.e., it produces true
        beliefs much more often than it produces false beliefs.
        Therefore, S's belief that *p* is true.

These forms are simply more complex forms of the schemes (1) and (2)
considered earlier: their logical validity is in a sense dependent upon the
validity of those schemes.[9] (I leave it to the reader to construct the appro-
priate analogues to schemes (3), (4) ad (5).) Nevertheless, these arguments
have a particular practical and rhetorical utility, because they do not require
that we have already established definitively what the causes of S's belief
were, instead, we speculate as to what most likely they were. This is the
position in which we usually find ourselves.

Indeed, argument scheme (6) does not share what might be seen as a
defect of argument scheme (1), viz., that it is redundant. To give an
argument of form (1), one would have to have already established that S's
belief that *p* is the result of a causal chain involving the state of affairs
making *p* true. This itself could only be possible if one already had estab-
lished that there *is* such a state of affairs, and establishing this would *by
itself* be sufficient to guarantee the truth of S's belief. With argument
scheme (6), one need only begin with S's belief as a datum, and proceed
to use the presence of that belief as evidence that there must be such a state
of affairs *because* a causal chain beginning with such a state of affairs
provides the best explanation for that datum. Arguments of form (1), though
deductively valid, are somewhat open to the charge of begging the question,
because their premises already presuppose that which would make the con-
clusion true. Arguments of scheme (6) are not entirely immune to this
charge, since it may be difficult to make a compelling case that the right
sort of causal explanation is the *best* explanation without presupposing
the truth of the conclusion, but, at least relatively speaking, they seem to
be in on more solid ground.

These arguments have a peculiar and interesting form. They begin only
with the presence of a certain belief held by some person or some group
of people, and proceed to argue that the very belief in question must be
true simply because the best explanation as to why that belief exists entails
that the belief is true or probably true. I call them *self-referential abduc-
tive* arguments, due to this peculiarity. I believe that these arguments have
been unduly neglected by philosophers and logicians, and that they are
more common, and more important, than one might think.

Let us consider some examples of such forms of reasoning, beginning
with the relatively mundane. Suppose I am asked where the 2004 Olympic
Summer Games will be, and I have the strong conviction the games will
be held in Athens. But I may want to reassure myself that this belief is

true before passing this information on. Let us also assume that I don't remember (if I ever knew) how I initially formed that belief. I don't remember any particular instance of hearing someone say this, nor reading it in the newspaper nor seeing it on television. But I may know enough about myself to know that I'm very unlikely to have formed this belief by means of some random process such as asking a magic eight-ball or simply speculating about likely places to hold Olympic games. Given this, I might conclude that the best explanation for my belief is that it was caused by means of some reliable process such as reading it in a newspaper, and therefore reassure myself about the truth of my belief. Insofar as my self-reassurance can be seen as taking the form of an argument, it is of form (7) above, or at least similar in form. I am aware of myself having a belief, the best explanation for how I came to have that belief is that it was formed by a reliable belief-forming process, and therefore, my belief is (probably) true.

There are also, I think, examples of such arguments directly relevant to doing philosophy. Consider, for example, the following argument which might be given to support belief in an external world. The data to be explained are that most people seem to believe that they perceive objects existing in space having certain properties. Given the similarity of the beliefs of so many, the vast consensus that seems to exist as to the nature of these objects, it is arguable that the best explanation for these shared beliefs is that these beliefs were all initiated causally by the actual presence of externally existing material objects in an objective space. Therefore, one might conclude, these beliefs formed about the existence of external objects are true. This argument, though perhaps somewhat more complex, is obviously very similar to an argument of form (6).

Or consider a parallel argument in moral theory. The data are that different people have a number of moral intuitions, and these moral intuitions (though not in complete consensus) are very similar. Most people are not aware of the exact 'origin', causal or otherwise, of these intuitions, but it might be argued that the best explanation for why there is such widespread agreement in beliefs is that there really are objective moral truths, which they have somehow managed to gain access to through reason or 'moral sense', or some other 'way of knowing' that connects in some appropriate way with the realm of moral truths, etc. Therefore, there are objective moral truths.

Lastly, consider an argument in favor of historical Christianity. We begin by noting that there are scriptures purporting to portray the life of Jesus Christ, and there is an entire tradition of people – virtually everyone within certain communities – who believe that these scriptures, though perhaps somewhat modified for liturgical purposes, do tell the story of an actually existing person whose life at least resembles these scriptures. Given these data, it might be thought that the best explanation for the historical origination of these beliefs, practices and scriptures, is a causal chain initiating

with the actual Jesus and his actions, which were then described and passed on. Therefore, historical Christianity is true. Here too, we have an argument from the existence of certain widespread beliefs to the truth of these very beliefs.

The example arguments just listed are, admittedly, quite crude. I certainly do not mean to endorse any of them. Nor do I mean to attribute these arguments to any other particular philosophers. Professional philosophers who specialize in such areas tend to give more sophisticated arguments. But nevertheless arguments at least approximating the above examples are sometimes heard in philosophical contexts. Speaking from personal experience, I have quite often had intelligent students justify their beliefs in Christianity or the external world by citing such arguments.[10] Even professional philosophers give arguments that, while more complicated, do at least fall in the neighborhood of such arguments. It is often maintained that the best arguments that can be given in favor of the external world or scientific realism are abductive arguments, beginning with what we perceive and the beliefs we have formed and arguing in favor of realism in virtue of its explanatory power. In ethical theory, the debate continues to rage over the importance of 'moral intuitions', and even those who place some importance on 'moral intuitions' are not often clear about precisely how it is that they gain their epistemic force. But given that there are moral realists who are also prone to grant even *pro tanto* weight to moral intuitions, it is not implausible to suppose that such thinkers, implicitly or explicitly, believe that moral intuitions should be trusted because the best explanation for why we have them is that they are often produced by some means appropriately related to the realm of moral facts.[11]

Philosophical questions, by and large, are precisely those questions that cannot be settled by straightforward scientific means. And gone are the days in which very many philosophers believe that very many philosophical questions can be solved through 'pure reason', i.e., through purely logical, deductive and/or mathematical means. This is what makes philosophy such a challenging endeavor. If it were possible to solve questions about metaphysics, morals, political theory and theology by scientific or deductive means, surely these would not be the hotbeds of controversy and dissention that they are. Still, insofar as any progress is possible in these areas, it may be that abductive reasoning, and in particular abductive reasoning that begins with our initial beliefs in these areas, and reasons from the likely explanations of the origins of those beliefs to the truth of certain theories, is one of our best tools. Notice that such reasoning, viz. *self-referential abductive reasoning*, is plainly a form of genetic reasoning. Such reasoning, then, I believe, does have a particular importance, especially to philosophers.

Indeed, there may be reason to think that such reasoning, or something very much like it, is almost always at work on some level for highly reflective people, even when they initially reach a certain conclusion based on

straightforward inductive or deductive grounds. Earlier we considered case of my reassuring myself about my belief about the location of the next summer Olympics, a case in which I do not precisely remember the initial grounds on which I formed a belief. Consider also the following scenario. Suppose I have just completed what I take to be a fully deductive demonstration of some new mathematical theorem Q. If my proof is sufficiently intricate, and Q sufficiently surprising, after I have completed it, I may ask myself, *can it really be true, can I really have proven Q?* I might reassure myself by giving the following 'meta-argument'. The data are that I have in my hand a mathematical demonstration I take to be proof of Q. If I am confident in my mathematical abilities and my ability to construct a mathematical proof without making mistakes or leaving omissions, then I may conclude that the best explanation for my belief that I have succeeded in showing Q is that the proof is indeed a deductively sound demonstration of Q and my mathematical abilities are such as to recognize a demonstration as valid when and only when it is valid with a high degree of accuracy. The actual mathematical demonstration I hold in my hand, be it sound or unsound, is not a genetic argument. However, when it comes to my 'meta-argument', the matter is quite different. My reassurance about the proof of Q stems not from the demonstration itself, but my 'second-order' belief that I initially formed the belief that I have proven Q in a rational, reliable, manner. Here I am indeed reasoning about the origins of my beliefs: the argument is roughly of form (7) above.

IV. GENETIC COUNTERARGUMENTS

So far we have been concerned mainly with evaluations of individual beliefs or statements based on considerations of their causal or historical origin. Of course, sometimes, especially in philosophical contexts, we are interested in evaluating *arguments*. By and large, the same sorts of considerations applicable to genetic reasoning with regard to beliefs apply to genetic reasoning with regard to arguments. Whether an argument is *sound* depends entirely upon its logical validity and the truth of its premises, and these issues are largely independent of how the argument in question came to be advanced or held. Yet this is not to say that all cases of genetic reasoning used to evaluate an argument are fallacious. Just as certain belief-forming processes are reliable, i.e., more likely to result in true beliefs than false beliefs, it might be found that there are certain ways in which people are caused to advance or accept an argument that are more likely to result in the acceptance of a sound argument than an unsound one. This may provide all the grounds necessary for a genetic argument in favor of an argument's soundness.

Of course, considerations regarding the causal or historical origin of a belief or set of beliefs will certainly be relevant to evaluating an argument

when the argument to be evaluated is itself a genetic argument. If person T gives a genetic argument of the form (1), arguing that S's belief that p is true because S's belief that p was caused in part by the state of affairs making p true, then if I discover that S's belief that p was not caused by the state of affairs making p true, but in some other way, then I am warranted in rejecting T's argument. While I cannot, for reasons considered earlier, conclude from this alone that S's belief that p is false, I can conclude that T's argument is unsound. (Notice here that T's argument is only unsound, not invalid. Even if T is wrong about the origins of S's belief, T is not guilty of committing a logical *fallacy*.) Similarly, if instead, T gives an argument of form (2), then if I discover that S's belief was not the product of a reliable belief-forming process, then, again, while I cannot conclude that S's belief is false or even probably false, I can conclude that T's genetic argument is lacking.

A critic of a self-referential abductive argument, such as an argument of form (6) or (7), has an even easier task. All the critic needs to do is provide reason for thinking that the proposed best explanation is not the best explanation.[12] One fairly obvious way of doing this is to provide an alternative explanation for why S believes p. A realist about external objects who argues in the way described in the last section would likely be challenged by a neo-Berkelian idealist, e.g., with the suggestion that God's orderly nature provides as good an explanation, if not a better one, for why people have so many shared beliefs about the world of sense. Either the proponent or the critic (or both) may be mistaken about what the best explanation is for the belief or beliefs under discussion, but neither need be guilty of committing the 'genetic fallacy'.

Indeed, when it comes to providing a counterargument to a self-referential abductive argument, forms of rebuttal that come very close to the most notorious cases of the 'genetic fallacy' can actually be countenanced. If someone were to advance an argument in ethical theory based on appeal to his or her moral intuitions, suggesting that the truth of a certain moral theory provides the best explanation for why such intuitions exist, it might be perfectly appropriate to respond to such an argument by appeal to socioeconomic, sociobiological or other possible causal explanations for why that person has such moral sentiments. Indeed, a critic might even argue that the ethical theorist's moral sentiments are the result of her culture, race or historical situation, and in so doing, the critic may be providing a possible alternative explanation for her 'intuitions'. Again, while such an approach would likely not provide an argument to effect that her moral intuitions are wrong, they may be successful in undermining the ethical theorist's self-referential abductive argumentation.

Similarly, if someone argues in favor of historical Christianity with the argument suggested in the previous section, it might be perfectly appropriate, as a counterargument, to suggest that wishful thinking or simply pressure to conform provides a better explanation for why so many people

for so long may have accepted historic Christianity. Such considerations do not prove that Christianity is false, but they might at least be seen as undermining an argument in its favor. To avoid misunderstanding, I am not here arguing that these responses are indeed successful. The best explanations of these beliefs, ethical and religious, are controversial and difficult matters. All I mean to argue in this context is that, despite any initial appearance to the contrary, such responses need not be seen as committing the 'genetic fallacy'.

To put the point formally, the following argument scheme can be seen as a non-fallacious form of genetic counterargument:

(8)   T has given a self-referential abductive argument for the conclusion that S's belief that p is true, with a crucial premise being that the best explanation for why it is that S believes that p is X.
        But X is not the best explanation for why S believes that p (*instead*, *Y is, etc.*).
        Therefore, T's argument that S's belief that p is true is unsound.

It should not be difficult to recognize that this argument form is valid. Sometimes the causes of someone's belief are important for assessing that belief or arguments in favor of that belief, and sometimes they can even lead to a negative assessment. This is obviously the case when the argument to be assessed itself appeals to a proposed cause of the belief in question. Self-referential abductive arguments, in particular, are susceptible to counterarguments that attempt to provide better explanations for why it is something is believed. Such counterarguments might indeed appear at first blush to commit the genetic fallacy, but this appearance is mistaken. People seem most tempted to make use of genetic reasoning when evaluating the metaphysical, ethical, religious or political views of others. Indeed, many of the more notorious cases of genetic critiques discussed in the history of ideas, e.g., Nietzsche's genealogical critique of popular morality or Freud's psychoanalytic explanation and critique of the belief in God as a father figure, etc., fall into this category. Perhaps some light can be shed on this if I am indeed correct that self-referential abduction is also particularly prominent in reasoning about these issues – though certainly, I do not mean to defend any of these infamous uses of genetic reasoning (Cf. Kim, 1990).

V. ABDUCTION AND INDUCTION

Lastly, let us pause to consider an objection. It might be thought that some of the examples I've given as self-referential abductive arguments should really be best understood as inductive inferences. In the case of the location of the next Olympics, perhaps my reassurance really stems from observing about myself that I almost never form beliefs, or at least beliefs of a certain

sort, haphazardly. With regard to my other beliefs similar to my belief about the next Olympics, in all or virtually all cases in which I am aware of the origins of my belief, my belief was formed in a reliable way. I also know by experience that even when I do not remember the precise origins of a belief, when my conviction is as strong as it is with the Olympics case, my belief turns out to be right most of the time. Therefore, I have solid inductive grounds for trusting my belief. Similarly, in the case of the proof that Q, perhaps I know by experience that I have usually been right in the past when I accept a mathematical proof as sound after close examination. Therefore, I have good reason for thinking I am right in this case as well.

I do not deny that it is possible to regard these – and perhaps the other examples as well – as cases of inductive reasoning. Perhaps this should not even be very surprising, given that many authors have argued that induction and abduction, contrary to Peirce's original claim, are not to be understood as completely separate modes of reasoning. It has been argued by some that abduction can be reduced to a form of inductive or probabilistic inference (see, e.g., Fumerton, 1980; Niiniluoto, 1999), and by others that inductive generalizations and predictions are best seen as forms of reasoning to the best explanation (e.g., Harman, 1965, 1968). I do not mean to take sides on this debate, but there are things to be said in favor of both views. In any case, that the above examples can also be construed as inductive inferences does not set them apart from other abductive arguments. Arguably, the *best* explanation is the same as the *likely* or *most probable* explanation. To rehearse an example given by Richard Fumerton (1980, p. 591), the reason that a person's having walked on the beach recently is the best explanation for the presence of footprints in the sand on the beach is that the vast majority of (known) cases of footprints in the sand on the beach were produced by someone walking on the beach.

The question to be asked in this context, when we reconstrue the examples given above as inductive arguments, is whether or not factors involving the origins or causes of beliefs cease to be relevant and hence, whether or not these can no longer be seen as genetic arguments. My view is that these still must be understood as genetic arguments. It may appear otherwise. If we understand the reasoning involved in the mathematical proof case as the simple form, *in the past I have almost always been right when I've accepted a mathematical proof as sound; this is a case in which I've accepted a mathematical proof as sound, and therefore, I'm (probably) right in this case as well*, it might appear that I am not appealing at all to the causes of my belief. This appearance, is, I think, illusory. The form, nature, and extent of inductive validity is still a matter of debate among logicians. However, I believe the inference from a past observed regularity of phenomena of type of X and phenomena of type Y to the conclusion that the present X is probably also Y is not an immediate and unproblematic inference. At the very least, it must be assumed that there is a real regularity in nature, i.e., that the observed regularity is represen-

tative of the overall pattern, and that there is some relation, conceptual or nomological, between phenomena of types X and Y that grounds this real regularity. In case under consideration, in making the prediction that I am right in this case as well, I am assuming that there is some genuine connection between my accepting a mathematical proof as sound and its actual soundness. This connection is probably best understood as the supposition that the causal processes that generally lead me to accept a mathematical proof as sound are truth-sensitive or reliable. Whether we construe what is going on in this case as induction or abduction, certainly part of what is being reasoned about is the way in which I form beliefs.

Another way of getting at the same question is to consider what factors are relevant to evaluating such arguments. Even when construed as inductive arguments, responses involving the way in which the belief was produced can bear weight. In this connection it is worth mentioning a curiosity involving abductive, inductive and probabilistic reasoning that one does not find with regard to deductive reasoning. A deductive argument can never change from valid to invalid by the *addition* of premises. However, this is not always the case with other forms of reasoning (cf. Niiniluoto, 1999, p. 444). Consider a case of non-genetic reasoning that can be construed either as inductive or abductive. Suppose I see a man in a business suit entering a convenience store, and I infer that the man will buy something. My reasoning here may be seen as abductive, e.g., as supposing that the man's intending to buy something provides the best explanation for his entrance (an intention that is very likely to succeed). It might instead be seen as inductive: past experience has taught me that most men in business suits walking into convenience stores usually buy something. Either way we construe the argument, the argument does not seem fallacious. But if we add, as an additional premise, that the man is wearing a ski mask and brandishing a pistol, both the induction and the abduction fail. The abduction fails because the proposed best explanation, when we consider all the relevant information, is no longer the best explanation. The induction fails because it is not true that experience teaches us that most men in business suits wearing ski masks and brandishing pistols buy something. The additional features of the situation change the overall probabilities. In performing an abduction or induction, I must always keep in mind all the relevant information available to me.

We saw in the previous section that one can respond to a self-referential abductive argument by bringing to bear considerations that call into doubt whether the proposed explanation is indeed the best one, and that such considerations may involve the causal or historical origin of the belief. When such arguments are construed as inductions, it is possible to see such responses as bringing to light certain features of the situation that must be taken into account when considering the relevant probabilities. I may know by experience that usually I am right when I accept the soundness of a mathematical proof, and I may take this as inductive evidence that I am

right in thinking the proof I have just given of Q is sound. But here I cannot ignore other potentially relevant features of the situation in which I formed the belief that the proof of Q is sound. If it is pointed out to me that I formed this belief during a period of great stress, or pressure to publish, or when pressed for time, if all these factors are taken into consideration, the induction may no longer be justified. In general, those factors that may call into question whether or not a certain explanation is the best when such arguments are construed as abductions can also be seen as factors that may change the inductive strength of the these arguments when construed as inductions.

To sum up the conclusions of this section, it may very well be possible to construe self-referential abductive arguments as inductive arguments. However, this does not show that such arguments should not be seen as at least potentially non-fallacious forms of genetic reasoning, nor does it show that one cannot non-fallaciously refute such arguments by appeal to features of the situations in which beliefs are formed.

VI. CONCLUSION

To sum up the overall conclusions reached so far, the impression one gets from many textbooks, specifically, that one always commits a fallacy when attempting to evaluate a belief or position on the basis of its cause or origin, is surely oversimplistic. There are forms of genetic reasoning that are non-fallacious, specifically those that are able to identify features of the way in which a belief or argument came about that are relevant to assessing its content. This is not often as easy thing to do. Often whatever knowledge we have about the causes of belief derives from reasoning to the best explanation. While abductive genetic reasoning, and in particular, self-referential abductive reasoning, does have an important place, it is itself somewhat unstable, and susceptible to genetic counterargument. It is with possible responses to self-referential abductive arguments that we find non-fallacious modes of reasoning that otherwise appear to be most similar to the genetic fallacy. A little reflection will reveal that it bothers us when someone is able to identify the cause of one of our beliefs as being something other than the grasp of its truth or likely truth, even those of us (and perhaps especially those of us) with significant logical training. The textbook account of the genetic fallacy would make this a mystery. Close scrutiny of certain sorts of arguments, such as self-referential abductive arguments and the role they play in our cognizing, at the very least, provides some insight into why this is.

NOTES

[1]   For a history of the term, see Crouch, 1993.

[2]   Bridging the gap between these different understandings seems to have been the work of Hanson (1967), who lists quite a number of different formulations of the 'genetic fallacy'.

[3]   For a different explanation of this discrepancy, see Lavine, 1962.

[4]   For earlier 'partial' defenses of genetic reasoning, see Handy, 1959; Lavine, 1962; Pashman, 1970; Feuer, 1983; Kim, 1990; and Crouch, 1993.

[5]   Suppose S's belief that the cat is on the mat *now* was not caused by cat's being on the mat now, but rather by remembering that the cat is usually on the mat at this time of day. Such a belief may well be justified, even though it is not causally related to the actual state of affairs making it true.

[6]   And even this form of astrology is relatively rare. Most astrologers do not make very specific claims about the future of their subjects; they tend to make rather open-ended and vague assertions, e.g., 'a new love will enter your life' or 'you will have difficulties with your career'. Given the many interpretations of these claims, and the many ways in which they could turn out to be true, trusting such predictions is probably only an unreliable belief-forming process, and not an anti-reliable one.

[7]   On the other hand, Crouch (1991) has argued that certain feminist authors might be interpreted as arguing that men sometimes (often?) make use of certain male-biased belief-forming processes, and that such biased belief-forming processes usually lead to false beliefs. Crouch herself suggests that this line of critique has serious problems to overcome. But supposing such male bias does exist, and supposing that beliefs formed using biased processes are anti-reliable, it might be possible to make non-fallacious genetic evaluations of certain claims based in part on the gender of the person making the claim.

[8]   See, e.g., Peirce, 1982, pp. 180f. However, the identification of Peirce's 'abduction' with 'reasoning to the best explanation' has been recently challenged by Hintikka (1998).

[9]   What I mean by this is that, e.g., the reason an instance of (6) is logically valid is that the second premise seems to provide abductive support for the corresponding premise in an argument of form (1), thereby providing ultimate support for the conclusion by a combination of abduction and deduction.

[10]   Moreover, former US President Ronald Reagan reportedly justified his belief in Christian doctrine with an argument rather similar to example given (see Churchill, 1986, p. 448).

[11]   I suppose it might be strange to think of these intuitions as having been originated causally by moral facts. But if we enlarge our discussion to speak of all different ways of speaking of the 'origins' of belief, it is not implausible to suppose that the moral realist believes that our moral intuitions 'originate' in some way that bears some appropriate connection with the moral facts, so we have here a case of genetic reasoning.

[12]   Indeed, on some accounts of abduction, a distinction might be drawn between the 'best' explanation and 'correct' explanation, in which case the critic's job may be even easier, for it may be that all she needs argue is that the proposed best explanation, though perhaps the best, is not the 'correct' explanation.

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