

DARWINIAN AND TELEOLOGICAL EXPLANATIONS: ARE THEY INCOMPATIBLE?

René van Woudenberg

It has often been remarked that the true genius of Darwinism is that it offers non-teleological explanations in a context where teleological explanations had always been presumed essential (Dawkins 1986; Dennett 1995; Cartwright 2000; Richards 2000). Darwinian explanations, it is often claimed, have made teleological explanations obsolete; their very possibility shows that teleological explanations must be false. This paper is an investigation of this claim. More specifically, it investigates whether or not teleological and non-teleological explanations are incompatible. Still more specifically, it investigates whether or not teleological explanations are incompatible with so-called evolutionary psychological explanations (EP explanations, for short) of certain specific human traits such as moral behavior.

This paper is organized as follows. Section 1 seeks to give rough and ready characterizations of teleological and non-teleological explanations. The next section argues that both types of explanation are not necessarily incompatible, although sometimes they are. This clears the ground for an inquiry into the (in)compatibility of Darwinian (EP) explanations of specific human traits. Section 3 provides a characterization of EP explanations, whereas section 4 investigates the (in)compatibility of an EP and a teleological explanation of the same phenomenon.

1. Teleological and non-teleological explanations: clarifications

I will be using the notions involved as follows. Teleological explanations are explanations in which at least one of the following concepts figure essentially: 'goal' (or 'purpose', or 'end'), 'intention', 'actor' ('designer'), and 'reason'.¹ These concepts form a fairly tight circle that cannot be broken into from the outside. By this I mean that they are needed in each others' definitions. For example, something cannot be a 'goal' unless it is intended; and what is intended is always a certain goal. Furthermore, the only sort of being that can intend something is an actor, i.e. a being with consciousness, beliefs as well as certain abilities for acting. Finally, the goal that an actor is aiming at is the, or a, reason for his doing what he does. Given this understanding of these notions, we can say that to give a teleological explanation of what has happened², is to indicate that what happened, did so because thus a certain goal is achieved; it is to indicate that what happened, is due to an actor who intended it to happen; it is to indicate that what happened did happen because some actor had a reason for making it happen.³ A teleological explanation of the event that consists in the breaking of a particular ladder, may therefore consist in indicating that John had sawn halfway through the rung for revenge. This explanation refers, either explicitly or by implication, to a goal (the breaking of the ladder when climbed by a particular person), an actor (John), an intention (to

¹ It is the *concepts* of 'goal' etc. that figure in such explanations, and not necessarily the words 'goal', 'designer' etc. For, as the examples to be given in the text indicate, teleological explanations of events can be given in which the words 'goal', 'designer' etc. do not occur.

² Teleological explanations may also be given of what is happening currently. In order to avoid cumbersome locutions, however, I will be talking about teleological explanations of what has happened in the past tense.

³ It should be noted that in explanatory contexts 'reason' may also indicate a non intentional cause, as when it is said that the reason why the iron expanded was that it was heated. In this paper, however, I will be using 'reason' exclusively in the sense of something that motivates an actor to pursue a certain goal.

make a particular person fall off the ladder) and a reason (the sawing halfway through of the rung for revenge).

Since the concepts I have mentioned are interdefinable, the explanations that involve any of them may be named ‘teleological explanations’ as well as ‘intentional explanations’, ‘agent explanations’, ‘design explanations’, and ‘reason explanations’. In what follows I will use mostly the first two names.

Darwinian explanations, by contrast, are non-intentional in that they do not involve any such concepts as ‘goal’, ‘intention’, ‘designer’, or ‘reason’. Darwinian explanations explain what has happened not as something that was aimed for by an agent for a reason, but as something that is due to mechanical causes. To give a non-intentional explanation of what has happened is to indicate that what happened is due to causes that have no intentions. A non-intentional explanation of the warming of a particular stone is that the sun shone on it for many hours. The sun, most of us think, has no intentions; still it is responsible for the warming of the stone. It is responsible for that in the sense that the shining of the sun somehow necessitates the warming of the stone.

To be sure, many evolutionary biologists nowadays are much less shy about using the term “teleological” than their predecessors were some decades ago. They say, for instance, that animals, and even plants, “do things for a purpose”. But they don’t mean by this that animals (save perhaps the higher primates) have intentions and “do things for a reason” (as I have defined that expression in fn. 3) and hence use that expression in a different sense than I do.⁴

2. When do teleological and non-teleological explanation exclude each other?

There is, of course, much more to be said about both kinds of explanation.⁵ But no more needs to be said in order for us to be able to see that both kinds don’t necessarily exclude one another. For example, the breaking of a particular ladder may not only be (intentionally) explained by indicating that John had sawn halfway through the rung for revenge, but also, non-intentionally, by pointing out that Henry, who climbed the ladder, was very heavy and the rung was weakened. Likewise, Jack’s stealing of the car may be (intentionally) explained by pointing out that Jack wanted to impress his friends; but it may also be explained (in a non-intentional manner), by indicating that Jack had a deprived childhood. As a final example, Mary’s looking after her elderly mother may be explained (intentionally) by pointing out that she cared about her mother’s happiness; but it may also be explained (non-intentionally) by pointing out that Mary was brought up to care for the well-being of others.

Intentional and non-intentional explanations, then, don’t always exclude one another. But sometimes they do. Suppose Mary fell on the floor during a reception. An intentional explanation of this might be that she wanted to cause a diversion, and a non-intentional one that she fainted. These explanations cannot both be true and hence are incompatible. The same holds for the explanations of Richard’s failing the examination. An intentional explanation might be that he failed because he didn’t want to seem cleverer than his friend; and a non-intentional one that he simply wasn’t clever enough.

So, sometimes intentional and non-intentional explanations of one and the same event are compatible, and sometimes they are incompatible. This gives rise to the question what it is about pairs of intentional and non-intentional explanations of one and the same event that makes one pair of explanations compatible, and the other pair incompatible?

⁴ For a discussion of various notions of “teleology” used by biologists, see Kuss 19XX, ch. 10.

⁵ For instance that I have used ‘teleological explanation’ such that it isn’t equivalent with ‘functional explanation’ and hence that my handling of these notions differs from Ernest Nagel’s; see Nagel 1961, 23.

One possible answer would be that the explanations in one pair are compatible when the non-intentional explanations point to what is sometimes called the *immediate cause* of an event, whereas the intentional explanations point to what may be often called the *remote cause* of the event. Let us see whether this answer is correct. Is, in the ladder case, heavy Henry's stepping on the weakened rung, the immediate cause of the breaking of the ladder, whereas John's having sawed the rung halfway through its remote cause? This is not an easy question to answer, due to familiar problems that beset the notion of a cause. As has been pointed out often enough, what we usually call 'the cause' of a certain event is mostly that element of a complex that is, in our eyes, the most salient one in its bringing about. Of course, it is likely that the ladder would not have broken, hadn't John sawed the rung. Thus we call John's having sawed the rung 'the cause' of the breaking of the ladder, for this feature is salient in our eyes. But the ladder wouldn't have broken either, hadn't Henry been that heavy, or hadn't the ladder been made of such materials that if the rung had been sewed half through it would not be strong enough hold heavy Henry. Therefore Henry's weight and the ladder's material also contribute to the ladder's collapse and hence may be called 'causes'. However, since we don't consider these things salient enough, we don't call them by that name. Suppose, however, we call everything that contributes to the bringing about of an event 'a cause' (and we may call the set of all of these The Cause), is there any use for calling some of these causes 'immediate' and others 'remote'? Although a thing may be 'immediate' or 'remote' relative to another thing in different senses, viz. spatial, temporal, and maybe other, it is clear that the sense in which John's having sawed the rung is 'remote' relative to the collapse of the ladder is a temporal sense. Likewise the sense in which stepping on the weakened rung is more 'immediate' with the collapse of the ladder is a *temporal* sense too.

Ample reflection on the ladder case reveals another problem for how to think about causes – one that has a bearing on the subject matter of this paper (and one that has been widely recognized by philosophers). I said that John's sawing the rung halfway through is a cause (or, in the sense just explained 'the cause') of the ladder's collapse. Formulated this way, the cause of the collapse is an *event*, viz. the event that consisted in John's sawing the rung. But it is also natural for us to say that *John* is the cause of the collapse. Formulated this way, however, the cause is not an *event* but a *person*, or, as is sometimes also said, an *agent*. This reflection has inspired a number of philosophers to distinguish between two kinds of causation, event-causation and actor-causation. The rock's hotness is caused by the event, consisting of the shining of the sun, whereas the rung's being sawed halfway through is not caused by an event but by an actor, John, who operated the saw. Much more can be said about this distinction, but I won't do that now. I will simply assume that there is an important difference between event causation and actor causation.⁶ This distinction is relevant for my purposes in the following way: intentional explanations point to causes that are agents, whereas non-intentional explanations point to causes that are not.

Let me sum up what was said about the ladder case thus far. The collapse of the ladder may be given a true non-intentional explanation by pointing to a certain event, viz. the event that consists in heavy Henry's stepping on a weakened rung; this is the immediate cause of the collapse. It may also be given a true intentional explanation by pointing out that the collapse is caused by John who sawed the rung and who is the ultimate cause of the event. We noted that these explanations are compatible. And they are compatible, I suggest, because they point to different members of the set that constitute The Cause. The non-intentional explanation points to an immediate event-cause; the intentional explanation to a remote agent

⁶ One difference is that the conditions that have to be satisfied for X to be the agent cause of event E include the condition that it was in X's power *not* to bring about E. This condition is absent from the set of conditions that have to be satisfied for X to be the event-cause of E. The shining of the sun caused the warming up of the stone; but it was not in the sun's power *not* to heat the stone. Two powerful expositions of the notion of agent-causation are Chisholm 1976, ch. X and O'Connor 1995, 173-200.

cause. And these causes can co-exist because the remote agent-cause can, so to speak, ‘use’ the immediate event-cause in order to achieve his goals. The relation between an agent-cause and an event-cause is like the relation between an actor who selects certain means to attain his goals. At least, that is the way it looks in this particular example. It needs to be seen whether we can generalize over this case.

Jack’s stealing of the car, I said, may be intentionally explained by pointing out that Jack wanted to impress his friends, but also, non-intentionally, by pointing out that he had a deprived childhood. In this case too, it would seem, there is both an immediate and a remote cause. In contrast with the ladder case, however, in this case the immediate cause is an agent-cause, and the remote cause an event-cause. Here we cannot say that the agent-cause ‘used’, or brought about, the event cause in order to attain its goals. No such instrumental relation obtains in this case. Still, the causes to which these explanations refer are serially linked. Somehow Jack’s deprived childhood caused Jack to want to impress his friends. Since in the ladder case the causes are serially linked too, we may launch the hypothesis that explanations are compatible, provided the causes to which they point are serially linked.

Let us test this hypothesis by looking into the pairs of incompatible explanations. Recall Mary’s falling on the floor. That event may be teleologically explained by pointing out that she wanted to cause a diversion, and non-teleologically by pointing out that she fainted. These explanations, I claimed, are incompatible. The reason for this is, as the hypothesis I launched a moment ago suggests, that the putative agent-cause and the putative event-cause cannot be serially linked. And, indeed, it seems implausible that they can. For, it is implausible to think that a person’s wish to cause a diversion can cause her to faint, and implausible as well to think that someone’s fainting can cause her to wish a diversion. It would seem, then, that the hypothesis survives the Mary case. And it survives the Richard case as well. For Richard’s not being clever enough cannot cause Richard’s not wanting to seem cleverer than his friend. Nor can his not wanting to seem cleverer than his friend cause him to be not clever enough. The event-cause and the agent-cause involved are not, and cannot possibly be, serially linked.

If my hypothesis is true, we have a handle on the claim that Darwinian non-teleological explanations have made teleological explanations of the same phenomena intellectually illegitimate, or obsolete, or redundant. For, if the causes of whatever it is that Darwinian explanations aim to explain can be serially linked with an agent cause, a teleological explanation of the same phenomenon is still possible, and hence cannot be rejected as intellectually sub-standard, or obsolete, or redundant. For it is, I think, a fact that where a teleological and a non-teleological explanation of the same phenomenon are compatible, the former provides a genuine intellectual insight into the explanandum. That Jack sawed halfway through the rung so that it would not carry heavy Henry (who is the only user of the ladder) provides a genuine intellectual insight into the ladder’s collapse. A non-teleological explanation of the ladder’s collapse is blind to Jack as agent-cause, and hence misses something of utmost importance. It misses out on something that is essential for understanding what has happened, it cuts off genuine insight. It is tempting to say that the teleological explanation affords ‘more’ insight into, or provides ‘more’ understanding of, the explanandum than does a non-teleological one. But since there is no measure for ‘insight’, or ‘understanding’, we should presumably leave this unsaid and simply state that where a pair of explanations (of the sort I have been dealing with) are compatible, the teleological explanation, if true, provides insight, or understanding, or intellectual illumination that the non-teleological explanation, even if true, cannot possibly give. Of course, one may willingly abstain from teleological explanations. But any such decision comes with the price of not even allowing oneself to seriously consider the possible illumination that teleological explanations may afford. And since, as I should think, one of the aims of the intellectual life is to gain insight, understanding, or illumination, we are ill-advised to ban teleological

explanations without a hearing, all the more so when such explanations are not necessarily incompatible with non-teleological ones.

The question now before us is whether whether the causes that Darwinian explanations point to can be serially linked with an agent.

3. Darwinian and EP explanations: clarifications

In order to be able to deal with this question, I need, of course, a more informed explication of what a 'a Darwinian explanation' of some phenomenon *is* (it is radically insufficient to know that such explanations are non-teleological). Since such explanations figure within the framework of evolutionary theory, I will first give a thumb-nail sketch of that theory and on that basis erect a definition of 'an EP explanation of a phenomenon'.

We can think of evolutionary theory as the conjunction of the following theses, together with what they imply:⁷

1. Organisms tend to produce more offspring than can possibly survive.
2. Some organisms have more offspring than others.
3. Offspring vary among themselves.
4. Some of this variation is passed down by inheritance to future generations.⁸

From these theses the following famous principle can be derived:

Principle of natural selection: If many offspring must die (for not all can be accommodated in nature's limited ecology), and individuals in all species vary among themselves, then on average survivors will tend to be those individuals with variations that are best suited ('fitted') to changing local environments. Since genetic hereditary exists, the offspring of survivors will tend to resemble their successful parents. The accumulation of these favorable variants through time will produce evolutionary change.

If the four theses plus the Principle together constitute the theory of evolution, then we may ask what 'an evolutionary (or Darwinian) explanation of a phenomenon' *is* and what kinds of phenomena fall within its scope? As to the latter, the phenomena that are the objects of evolutionary explanation may be such phenotypical traits as having a trunk, walking in an upright position, and turning white in the winter. As to the former: if we assume that 'an explanation' is a statement, we may say that an evolutionary explanation of a phenomenon is a statement that interprets that phenomenon in the light of the Principle of natural selection. More specifically, it is a statement that interprets the coming about of a certain phenotypical trait as the result of years of natural selection acting upon ancestral populations. Still more specifically, it is a statement that interprets the trait to be explained as conferring an adaptive advantage on the organism that has it, in the environment it happens to be in. Whether or not a trait may be considered as conferring an adaptive advantage is measured by the relative number of offspring it produces, or, in terms of Dawkins gene-machine view, by the relative frequency of genes it is able to get into the subsequent generation.

Many evolutionists, however, don't confine themselves to evolutionary explanations of phenotypical traits of organisms. They also aim to explain what have traditionally been thought of as specifically human 'mental' or 'psychological' traits. For this reason such

⁷ What follows is based on Gould (1997) 138.

⁸ Darwin, of course, did not know the Mendelian mechanism of heredity.

explanations are often referred to as ‘psychological evolutionary explanations’. Says Janet Radcliff Richards:

[The idea of natural selection] raised, more seriously than ever before, the idea that no supernatural life breathed into matter to make it animate, and that no soul was infused to make it conscious. Consciousness and all that goes with it --culture, art, science, philosophy, moral ideas-- are just things that appear when matter gets into these arrangements, and the idea of natural selection shows in principle how these arrangements are possible. ... [T]he threat of their being taken up into a Darwinian synthesis opens the way for the[ir] scientific explanation.... It may mean that [they] ... are ultimately to be explained as devices that exist only because they have been successful in achieving our evolutionary survival (Richards (2000) 23)

Richards tells us, I take it, that such phenomena as consciousness, culture, art, science, philosophy, and moral ideas are explained in an evolutionary psychological manner when it has been made clear that they exist only because they have been successful in achieving our evolutionary survival. Presumably we have to think of these phenomena as traits or properties of human organisms. And the idea is that these traits are explained in an evolutionary psychological way, when it has been made clear that these traits enhanced the evolutionary success of their bearers, i.e. conferred adaptive advantages over their competitors. Assuming, again, that an explanation is a statement, the rough and ready idea of evolutionary psychological explanations (or EP explanations, for short) can be put as follows:

Statement S is an EP explanation of trait X of a human organism =df. S makes it clear that the human organism has X only because X has been instrumental to its evolutionary success (or: only because it is fitness enhancing).

And, as I have said before, an organism’s evolutionary success depends on the measure in which the organism is able to maximize its ‘genetic legacy’ in the environment it happens to live in, i.e. on the measure in which the organism, within the environment it inhabits, is able to get its genes into the next generation.

The definition just given stands in need of further clarification. First, what exactly is it for a statement “to make it clear” that an organism O has X only because X has been instrumental to O’s evolutionary success? It is this: it tells us how, given the thesis of natural selection (i.e. the thesis that survival is the result of selective pressures), X can be interpreted as the result of years of selection acting upon ancestral populations.

Second, the explication just given doesn’t set a very rigorous standard for EP explanations. It says only that the trait to be explained ‘can be interpreted’ as the result of selection working on ancestral populations. And I presume that with sufficient imagination and ingenuity it is always possible to concoct a story (an interpretation) in which the environment is such that, given the traits of various organisms, natural selection favors certain (types) of organisms over others. But this concocting of stories is hard to take seriously in the context of science. If they are to be taken seriously, various constraints will have to be placed on the interpretative stories. They should be reasonable, justified, evidence-based, coherent with other things we know, and the like (they should be truth related). Let us call stories that satisfy these constraints ‘serious interpretations’.

I take it that offering an EP explanation that meets these constraints is a daunting affair. Fortunately however, given the goal of this paper, I need not go into this. For all I am presently interested in, is whether or not EP and teleological explanations of the same phenomenon can be compatible. The way to answer this question is to see whether the causes these explanations refer to, can be serially linked.

4. Are EP explanations and teleological explanations of morality incompatible?

I now want to investigate whether or not EP explanations are compatible with teleological explanations. I want to focus this investigation on the moral life. More specifically, I want to focus attention on the explanations of the following two facts (I won't argue for it, but I do take [A] and [B] to be facts):

[A] that human beings have the propensity to form beliefs about what ought and ought not to be done,

[B] that human beings perform acts that, from a more or less traditional or commonsensical point of view can be described as 'morally right acts'.

A teleological explanation of [A] might go something like this: human beings have the propensity referred to, because God *intended* them to have that propensity and brought about what he intended. The cause, the agent-cause, of fact [A] is God. Of course, this explanation doesn't go into any detail as to *how* God brought about human beings with that propensity. But this, I hold, is nothing against its being a teleological or intentional explanation.

Let us now take a look at Michael Ruse's and Edward O. Wilson's EP explanation of [A] (Ruse & Wilson 19XX). Human beings, they hold, have innate dispositions that incline, but don't determine, them to act in certain ways. Among these dispositions is the propensity to believe certain things. Some of the things they believe concern what *ought* to be done, for instance that one ought to help one's fellows, or that one ought to keep one's promises. Humans believe furthermore, say Ruse and Wilson, that morality is "objectively based", by which they presumably mean that moral beliefs are objectively true or false, i.e. that their truth or falsehood in no way depends on what humans believe, or think, or accept. Ruse and Wilson explain this propensity to form such beliefs as follows:

Our belief in morality, is merely an adaptation put in place to further our reproductive ends. (310)⁹

This statement, of course, isn't a full blown EP explanation. After all, it merely *asserts* that the human capacity for having moral beliefs is instrumental to their evolutionary success, but it doesn't *make it clear* that it is (as required by my definition of an EP explanation). Ruse and Wilson, however, hold that the well-known theories of kin-selection and reciprocity do just that: they make it clear that the capacity for having moral beliefs has survival value.¹⁰ The

⁹ To this they add: "In an important sense, ethics, as we understand it is an illusion fobbed off on us by our genes to get us cooperate. ... Ethics [shared moral beliefs, RvW] is a shared illusion of the human race. If it were not so, it would not work". I take this to mean that none of our moral beliefs are true—all are false. The argument for this claim is this: "Suppose that, instead of evolving from savannah-dwelling primates, we had evolved in a very different way. If, like the termites, we needed to dwell in darkness, eat each other's faeces and cannibalise the dead, our epigenetic rules [i.e. the rules that incline us to certain sorts of behavior] would be very different from what they are now. Our minds would be strongly prone to extol such acts as beautiful and moral. And we would find it morally disgusting to live in the open air, dispose of body waste and bury the dead." (311)

The argument seems to be that since humans could have been a very different sort of creature, their current moral beliefs are false. I don't think this argument is any better than this one: we could have been a very different sort of creature, therefore our current mathematical beliefs are all wrong. In both cases it is very hard to see how the conclusion follows from the premise. I won't therefore pay any attention to the morality-is-an-illusion claim. So, the way I am constructing "an EP explanation" is such that it doesn't carry with it any commitment to moral antirealism.

¹⁰ These theories are due to W.D. Hamilton and Robert Trivers respectively. Discussions of these theories that I found particularly helpful are Richards 2000, 162-168; Cartwright 2000, 74-89; Cronin 1991, ch.11; Irons 1996; Vine 1992, ch.4.

first theory suggests in what ways a particular type of morally ‘right’ behavior, namely altruistic behavior with respect to kin, furthers the cause of reproductive success. The basic supposition of this theory is that the unit of selection is not the individual organism, but the gene.¹¹ And its basic claim is that it makes clear how the gene may do better if the organism shows some degree of altruism to other organisms. The way it claims to make this clear goes something like this: a particular human organism HO shares half of its genes with its own offspring as well as with its siblings, and it shares a quarter of its genes with its cousins and grandchildren. In acting upon the moral belief that one should help one’s kin, HO in effect helps to get its own genes into the next generation, for part of HO’s genes are the same as theirs.

The theory of kin altruism, even if true, does not explain altruism to unrelated others. The second theory, the theory of reciprocal altruism, aims to explain just that. Heavily based on game-theory, it suggests in what ways reciprocity with non-kin may further the cause of reproduction of an individual organism. The theory’s basic point is that, as the Prisoner’s Dilemma makes clear, the pay-off of cooperative behavior is much greater than the pay-off of purely selfish behavior.

Let us assume that these theories do what Ruse and Wilson want them to do: they explain the occurrence of altruistic behavior, and since they think of such behavior as resulting from moral beliefs, they explain our *having* moral beliefs and our having the *propensity* to form moral beliefs as well. So, let us assume that moral beliefs incline us to acts that further the cause of reproduction. These explanations, we may say, indicate *the cause* of human’s having moral beliefs as well as having the capacity of forming moral beliefs. The cause is natural selection operating on organisms in a certain environment. Organisms in which this capacity is operative have an evolutionary advantage over organisms in which it is not. Of course, this isn’t a full description of The Cause as I have defined that earlier. But it singles out a salient part of it and hence may be called the cause.

Let me now make the final step in my discussion of [A]: do the teleological and EP explanation of that fact exclude one another? This question translates into: can the causes that these explanations refer to be serially linked? It seems to me that they can: God, the agent-cause of there being humans with the propensity to form moral beliefs, can make use of the cause that the EP explanation refers to. Natural selection can be the means by which God brings about the occurrence of humans with this propensity.¹²

This last assertion may give rise to some doubts. For it may be asked how something that involves chance or randomness, such as natural selection that works on random genetic mutation, can be an instrument in someone’s hands. As has been argued by various philosophers, however, something’s involving randomness doesn’t forestall its being a means to attain a certain goal (Ratzsch 1998; Van Woudenberg 2002; Van Inwagen 2003). One rather quick way to make this point is by drawing an analogy (due to Van Inwagen 2003, 354). Mathematicians have designed a device for calculating the surface of areas that have irregular boundaries. Those who use the device, then, aim at something, they want to calculate the surface of areas with irregular boundaries. However, the means by which they do so, the device, involves randomness. For this is the way it works: after you have drawn the area on the device’s screen, the device selects random points on the screen and sees whether or not it falls within the area. As the number of selected points increases, the ratio of the selected points that fall within the area to the total number of selected points tends to the ratio of the area to the total screen.

I probably need not stress the fact that this claim to compatibility has no implications whatsoever with respect to the truth of the EP explanation offered. All that is claimed is that

¹¹ This theory’s supposition is often referred to as “the gene machine view”. See Dawkins 1976.

¹² This view is espoused by, among others, Peacocke 19XX.

both explanations do not exclude one another, not that both are *true* (although both *may* be true). So, there being an EP explanation of fact [A] in no way counts against there being a teleological of the same fact, vice versa.

Let us now turn to [B] and its explanations. To be sure, facts [A] and [B] aren't neatly separated, so neither will be their explanations. But there are important differences between them. [A] is a fact about a certain propensity we have, viz. the propensity to form moral beliefs, [B] is a fact about a certain class of acts, viz. the class that from a traditional point of view can be described as 'morally good acts'. Another difference comes out when we reflect on possible teleological explanations of [B]. It will, I believe, facilitate the discussion when we focus on cases of 'morally good acts' such as the following:

- a- Wilberforce's relentlessly striving for the abolition of slavery
- b- Jack's saving a child that is about to drown
- c- Jane's helping her sister who is suffering from financial problems.

Teleological explanations of these acts involve the intentions, goals, and reasons that Wilberforce, Jack and Jane have for doing what they do. We may say that Jane helps her sister for the reason that her sister is having financial problems and is in need of help. We may also say that Jane acts on certain beliefs, such as the belief that her sister is suffering financial problems, the belief that her sister is in need of help, the belief that she is able to help, and the belief that she ought to help her sister. Similar things may be said about Jack. We may say that he jumped into the water for a reason, e.g. the reason that there was a child about to drown. But we may also say that he acted on certain beliefs, such as the belief that there is a child in the water that seems to be drowning, the belief that we have the duty to help those who are in danger, the belief that he has the duty to help this child that is in grave danger. There is currently a discussion going on about the question whether explanations in terms of reasons and beliefs are reducible to one another, and there is still debate about Hume's old assertion that a person's beliefs don't motivate her to act—it is, Humeans assert, exclusively passions and feelings that do.¹³ But whatever one's position in these debates, both reason-explanations and belief-explanations of actions are teleological explanations. They refer to an agent cause, that performs an act out of a certain intention.

So there is this big difference between teleological explanations of [B] and [A]: our performing acts that can be described as 'morally right acts' is due to human agent causes, whereas the *propensity* to form moral judgments and beliefs is not.

EP explanations of [B], however, are closely related with EP explanations of [A]. For when it is claimed that natural selection selects for the propensity to form moral beliefs (beliefs that are claimed to motivate us to certain types of behavior), what is in fact claimed is that what is selected for is a propensity not just to form any old belief, but a propensity to form highly specified sorts of belief, namely beliefs that from a traditional point of view have been described as *moral* beliefs. The theories of kin selection and reciprocity are then again invoked to do the explanatory work. What this comes to is that Wilberforce, Jack and Jane do their deeds because their kind of beings, i.e. beings that perform acts that can be described as 'morally good acts', is what natural selection selects for.

The question now before us is whether the teleological and EP explanations of [B] are compatible. This boils down to the question whether the causes that are referred to in these explanations can be serially linked. And it would seem that they can be. For if natural selection selects for beings that are agents that have certain beliefs and a display a certain repertoire of actions (viz. ones that can be described as 'morally good') then agent-cause and

¹³ For this discussion see McNaughton 1988.

non-agent cause (natural selection) seem to be serially linked. The analogue here is with the case of Jack, that I discussed earlier in Section 2. And hence both types of explanation are compatible.

So, my conclusion is that EP explanations of [B] (or of individual acts a-, b-, and c- that have traditionally been described as morally right acts) are compatible with teleological explanations of the same fact.

What I have been arguing may give rise to the following worry. Haven't I, so to speak, been giving much too much away to EP explanations of actions that have traditionally been described as "morally good acts"? After all, EP explanations proceed from the assumption that all actions that have traditionally been described as a morally good acts are actions that are fitness enhancing. And isn't this assumption itself already objectionable? Don't explanations that proceed from this assumption necessarily denigrate or debunk moral actions? Doesn't this assumption tell us that "at the bottom" moral actions are "really" action that are fitness enhancing?

No doubt, some advocates of EP explanations of so-called moral behavior do want to denigrate en debunk the moral quality of those actions that we like to think of a morally right actions. However, nothing in EP explanations as such commits one to taking a debunking stance. The thing to see is that one and the same act may have both the properties of *being an act that is morally good* and *being an act that tends to be fitness enhancing*. To put the same point differently, one and the same act may fall in the extension of both 'morally good act' and at the same in the extension of 'act that tends to be fitness enhancing'. But this does nothing to show that these properties are "at bottom" really the same property. Here is an analogy. It is a fact that every vertebrate with a heart has a liver, and every vertebrate with a liver a heart. We may therefore say that there are animals that have the property of *being a vertebrate with a heart* as well as the property of *being a vertebrate with a liver*. Clearly, the fact that one and the same animal has both of these properties, does nothing to show that these properties are "at bottom" the same property. And so it is, one might think, with the properties of *being an act that is morally good* and *being an act that is fitness enhancing*. It is clearly possible that one and the same act has both of these properties. Whether *every* moral act is such that it is fitness enhancing is, as far as I can see an open question. But even if it is answered in the affirmative, this need not have any debunking implication.

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