

## Article

# Rape with Murder and Suicide: The Evidential Argument from Evil against Naturalism

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**Abstract:** The problem of evil seems to have been the patent of theism for a long time. However, some philosophers notice that this is not necessarily the case and raise arguments from evil against atheism. In this paper, I follow this insight and raise the evidential argument from evil against naturalism. I argue that some human behaviors that cause evil and suffering contradict the principles of evolution and should not exist in a naturalistic world. Nevertheless, they do exist, and they accordingly disconfirm naturalism. To attain this conclusion, I first establish that psychological mechanisms as evolutionary causes are the ultimate causes of human behaviors if naturalism is true. Then, I argue that cases of rape with murder and suicide have contravened their relevant psychological mechanisms' adaptive functions and should not exist. Therefore, cases of these behaviors make it reasonable to believe that naturalism is not true. Both naturalists and theists now have to raise plausible explanations for various evils in the world. It is possible for theism to outcompete naturalism with respect to evil as a result.

**Keywords:** God; evil; naturalism; ultimate cause; evolutionary psychology



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## 1. Introduction

The problem of evil seems to have been the patent of theism for a long time. However, some philosophers notice that this is not necessarily the case and raise arguments from evil against atheism.<sup>1</sup> In this paper, I follow this insight and raise the evidential argument from evil against naturalism. I argue that some human behaviors that cause evil and suffering contradict the principles of evolution and should not exist in a naturalistic world. Nevertheless, they do exist, and they accordingly disconfirm naturalism. To attain this conclusion, I first establish that psychological mechanisms as evolutionary causes are the ultimate causes of human behaviors if naturalism is true. Then, I argue that cases of rape with murder and suicide have contravened their relevant psychological mechanisms' adaptive functions and should not exist. Therefore, cases of these behaviors make it reasonable to believe that naturalism is not true.

Before diving into the substantial argument, a few things need to be briefly clarified. First, naturalism and theism are treated as two competing theories for the existence of evil in this paper. In addition to the two theories, other worldviews may also be enlisted as a possible competing theory for evil. However, it is impossible to discuss all possible worldviews here. Since naturalism is often considered a plausible alternative to theism, I limit the current discussion to naturalism, leaving the other potential competing worldviews aside. Readers who are interested in other worldviews may be able to take a similar approach to investigate whether the worldview in question can better explain the existence of evil.<sup>2</sup>

Second, because naturalism and theism are treated as two competing theories regarding evil, imposing evidential problems of evil on naturalism can indirectly benefit theism. Naturalism is widely considered as being immune from the problem of evil, and so theism is defeated by naturalism whenever some evils cannot be plausibly explained by theism, and even if a plausible and global theistic account for each evil is at theists' disposal, theism is at best tied with naturalism concerning evil. In this situation, theists do their best only

to prevent theism from being wiped out by naturalism. The problem of evil tilts towards naturalism and presents a severe challenge for theism.

The evidential argument from evil against naturalism has reversed the disadvantage of theism. It renders naturalism also suffer from the problem of evil. Proponents of naturalism cannot simply criticize theistic defenses to the problem of evil without defending itself from this problem because the evidential argument from evil against naturalism significantly reduces the plausibility of naturalism with many cases of horrendous evil of rape with murder and suicide. Both naturalism and theism now have to raise plausible explanations for various evils in the world and develop more problems of evil for each other. Namely, the evidential argument from evil against naturalism is a game changer. Because of this argument, naturalism no longer enjoys the advantage of not having to explain the existence of evil. It is now possible for theism to outcompete naturalism with respect to evil.

## 2. The Evidential Argument from Evil against Naturalism

The evidential argument from evil against naturalism raised in this paper is as follows:

1. If naturalism is true, the ultimate causes of human behaviors (or traits)<sup>3</sup> are evolutionary causes.
2. If the ultimate causes of human behaviors are evolutionary causes, human behaviors that cause evils should have evolutionary causes as their ultimate causes.
3. If evolutionary causes are the ultimate causes of human behaviors that cause evils, human behaviors that cause evils should not contradict the principles of evolution.
4. Some human behaviors that cause evils do contradict the principles of evolution.
5. It is not the case that naturalism is true.

In the following discussion, I raise arguments to support the first and fourth premises of this argument. It is obvious that premise 2 is derived from premise 1. If premise 1 is true, so is premise 2. In addition, it is obvious that if premises 1 and 2 are true, premise 3 is true. One thing cannot betray the principles of its causes, or it will not exist. Human behaviors that have evolutionary causes as their ultimate causes should not contradict the principles of evolution, or they would not exist. Thus, I will mainly focus on premises 1 and 4. As for premise 1, I include a discussion of the proximate and ultimate causes raised by evolutionary psychologists to support that psychological mechanisms as evolutionary causes are the ultimate causes of human behaviors.

With regard to premise 4, I utilize resources from evolutionary criminology and psychology to argue that some human behaviors that cause evils contradict the supposed functions of their relevant psychological mechanisms and should not occur in our human society. However, they do occur. These evils, hence, disconfirm naturalism.

In addition, I raise an evidential rather than a logical argument against naturalism here, so I do not aim to prove that premises 1, 2, 3 and 4 are true. Instead, I argue that evidence supports that they are true, that is, it is reasonable to believe that they are true. As a result, I do not argue that the conclusion of this argument is true, but that it is justified to believe that it is true.

Because of its evidential nature, this argument does not exclude the possibility that, with further research, good evolutionary explanations would be available for the human evils in question one day. However, this possibility does not influence the validity of this argument. In so far as there are no plausible evolutionary explanations for human evils in question, these evils still constitute a great challenge to naturalism.

## 3. Evolutionary Causes as the Ultimate Causes of Human Behaviors

Because the natural and social sciences are conducted under the assumption of methodological naturalism,<sup>4</sup> they only look for natural explanations for things or phenomena in question. Since naturalists deny the existence of supernatural beings and powers, when explaining why a certain kind of behavior has appeared in our world, they should appeal to the causal explanations raised by the natural and social sciences. Naturalists are looking for pure natural explanations to identify causes of human behaviors, and those are what

the natural and social sciences have offered. In this section, I argue that evolutionary causes are the ultimate causes of human behaviors. I first use crime to illustrate the necessity of evolutionary causes for understanding human behaviors.

In criminology, criminologists have raised various theories to explain why criminal behaviors have appeared. They are looking for their causes with the hope that those criminal behaviors can be prevented or reduced with their causes clarified. Some of them focus on the inherent factors of perpetrators; others emphasize the influence of the environment and try to figure out what kind of factors in the environment have caused a perpetrator to commit a certain criminal behavior; some try to examine this matter from a more holistic view and include both innate and environmental factors in their explanations for crimes.

Among those who focus on the inherent factors are evolutionary psychologists and criminologists. They try to find the causes of various crimes in the history of human evolution. Evolutionary psychologists propose that psychological mechanisms are products of evolution and are the ultimate causes of human behaviors: 'The ubiquity of violent behavior at different levels of social reality suggests that its occurrence is not an aberration or a result of idiosyncratic factors, but rather represents the expression of basic psychological mechanisms (Vallacher and Brooks 2014, p. 187)'.

To understand human behaviors, it is necessary to search for these ultimate causes in the history of human evolution. Criminologists influenced by evolutionary psychology have developed their explanations for crimes on this basis. They propose that nonevolutionary theories must be supplemented with evolutionary accounts to illuminate the causes of crime.

Take rational choice theory as an example. The rational choice theory proposes that the basis and motive of human behaviors are 'expected utility'. This theory assumes that people act on the calculation, evaluation and expectation of what they will gain and lose from an act. When an act's expected benefits are greater than its cost to a certain degree, people will perform this action. Criminal behaviors are committed out of the calculation of gain and cost. In addition, the calculation and evaluation of the benefits and costs happen at every stage of a crime. Therefore, a perpetrator may suspend the crime at any stage when its cost is too great (Newburn 2017, pp. 299–300).

Further details of the rational choice theory will not be pursued here. What matters here is its proposal that a perpetrator acts according to the gain and cost brought about by an act. Whether perpetrators continue or stop their crime depends on the calculation of the expected gain and cost. The rational choice theory presupposes that the calculation of gain and loss, which is the basis of human behaviors, is a common and inherent trait of all human beings.

However, the rational choice theory does not explain where the mechanism of the calculation of gain and loss comes from. It just assumes that this mechanism exists. In order to better understand criminal behaviors, it is necessary to investigate whether this mechanism exists and why and how this mechanism has appeared. This investigation should be involved in evolution, since human beings are products of evolution according to naturalism. Why and how this mechanism emerged in human evolution needs to be explained.

Evolutionary psychologists try to elucidate how these innate psychological mechanisms have occurred in our ancestors in the process of evolution. They propose that human beings inherit many psychological mechanisms which are the fruits of natural selection. Those psychological mechanisms helped human ancestors survive and reproduce in the pristine environment in the Pleistocene epoch; therefore, they were selected and preserved as adaptations. Furthermore, the Pleistocene epoch is the most important stage for us to understand how human psychological mechanisms occurred and were selected in our ancestors. At that time, our ancestors lived a hunting–gatherer lifestyle on the African Savannah. In order to respond to ecological challenges and difficulties in that environment, those psychological mechanisms evolved and were selected correspondingly. Those psy-

chological mechanisms were later passed to their human offspring through inheritance (Brown and Richerson 2017, p. 108).

In short, evolution plays a crucial part in understanding criminal behaviors. For example, criminologists Anthony Walsh and Cody Jorgensen (Walsh and Jorgensen 2018, p. 520) say:

Without an evolutionary understanding, there is no scientific way to determine how a particular behavioral trait might have served the goal of enhancing survival and/or reproductive success over the course of time and how it can be coopted to serve other purposes, including criminal purposes.

According to them, evolutionary theory is essential for understanding criminal behaviors. However, to emphasize the importance of the evolutionary explanation is not to dismiss cultural and social factors but to remind us that evolutionary causes are indispensable for a full understanding of human behaviors. Evolutionary psychologists propose that humans' innate psychological mechanisms interact with and respond to environmental stimuli and, hence, lead to a certain behavior. Stimuli from the external environment, human internal traits or mechanisms and their interaction would together contribute to a certain behavior.

Therefore, figuring out what traits or mechanisms are behind this behavior and how they interact with environmental stimuli can help us understand why a specific criminal behavior has occurred. As a result, evolutionary causes are crucial for understanding criminal behaviors. This conclusion applies to other human behaviors as well. Evolutionary causes are also among the causes of other human behaviors.

In addition, evolutionary causes are also the ultimate causes of human behaviors. The distinction between proximate and ultimate causes can help illustrate this point.

Proximate causes 'are those that operate over the short term—the immediate causes of behavior' (Thornhill and Palmer 2000, p. 4). They are about how a specific trait or mechanism leads to one's certain behavior(s) in one's life. They 'include genes, hormones, psychological structures (including brain mechanisms), and environmental stimuli (including environmental experiences that affect learning)' (Thornhill and Palmer 2000, p. 4). Proximate causes are the immediate causes of a particular behavior.

In contrast, ultimate causes are about how and why traits or mechanisms underlying a specific behavior appeared from evolution. The following example can help delineate the distinctions between proximate and ultimate causes and their functions.

Though many people know that eating too much fast food is not good for their health, they are still attracted to it. They may eat too much fast food and, thus, have some health problems. The phenomenon's proximate causes may be that fast food companies' advertisements are rather attractive and successful, fast food is delicious and addictive, eating fast food can help release one's stress, etc. Identifying these proximate causes helps us clarify why people overeat fast food although they know that excessive fast food is not good for their health to a certain degree. However, these proximate causes do not completely delineate why people are prone to eating fast food and are easily attracted to it. The following evolutionary explanation can further clarify why fast food is such attractive. It proposes that the disposition for fast food serves some adaptive goals in the process of human evolution:

Droughts often occurred in the area of the African Savanna when human ancestors lived there, and droughts would cause famines. In this environment, the more fat accumulated in the body, the better. Fat could help human ancestors survive during a famine and could enhance the probability of reproduction by extending one's lifespan in this extreme environment.

Furthermore, diets containing high quantities of sugar and fat are efficient in human ancestors' accumulation of fat. Therefore, the human preference for foods with high quantities of sugar and fat was selected for in the process of evolution because these foods helped human ancestors survive in the extreme environments of the African Savanna. Although our lifestyle and environment are rather different from our human ancestors'

in the African Savanna, we are still programmed to ingest foods with high quantities of sugar and fatness. Fast food matches this preference, and, with suitable stimulus, people are easily attracted by fast food and may over-ingest it (Geher 2014, p. 19).

The preference for food with sugar and fat contents is the ultimate cause for the over-ingestion of fast food. The above evolutionary explanation further explains the behavior of overtaking fast food by investigating the evolutionary cause (i.e., the ultimate cause) of this behavior. Without revealing the ultimate cause, the behavior of overeating fast food cannot be well deciphered.

What lies behind the distinction between proximate and ultimate explanations is the idea that human behaviors are the products of the interaction of innate human mechanisms (or traits) and external environmental inputs. While proximate explanations clarify what the probable external environment inputs and innate mechanisms may be, ultimate explanations delineate how innate mechanisms leading to such a response (i.e., behavior) initially appeared. Human behaviors are not simply decided and shaped by environmental stimulus. Human innate mechanisms also play an important role. If human psychological or physiological mechanisms have changed, people will have different reacting behaviors even with the same external or environmental stimulus, as evolutionary psychologists John Tooby and Leda Cosmides (Tooby and Cosmides 2015, p. 55) say:

Value and behavior cannot be induced from the environment alone. No environmental stimulus intrinsically mandates any response or any value hierarchy of responses. In the tangled bank of co-evolved organisms that Darwin memorably contemplated at the end of the *Origin of Species*, naturally selected differences in the brains of different species cause them to treat the same objects in a rich and conflicting diversity of ways. The infant that is the object of caring attention by one organism is the object of predatory ambition by another, an ectoparasitic home to a third, and a barrier requiring effortful trajectory change to a fourth. It is the brains of these organisms that introduce behavior-regulatory valuation into the causal stream and natural selection that introduced into brains the neural subsystems that accomplish valuation. The same stimulus set cannot, by itself, explain differences in the preferences and actions they provoke, nor indeed, the preferences themselves.

Human behaviors are not simply molded by environmental factors. They have more profound causes which are to be found in the process of human evolution. Human behaviors, thus, have evolutionary causes as their ultimate causes.

#### 4. Evolution and Psychological Mechanisms

In the previous section, I argue that evolutionary causes are the ultimate causes of human behaviors. Now, I turn to the question of what kind of evolutionary causes should be investigated. Evolutionary psychologists have argued that human psychological mechanisms were selected as adaptations in the process of human evolution. They exist and are common simply because they contributed to human ancestors' survival and reproduction in the African Savanna in the Pleistocene epoch. Those psychological mechanisms interact with various environmental factors and lead to some human behaviors.

Here, I adopt the idea of evolutionary psychologists and aim to show that, as evolutionary psychologists propose, psychological mechanisms are the ultimate evolutionary causes of human behaviors. To begin, I first introduce some ideas concerning evolution.

The first idea relevant to evolution is reproductive success. Reproductive success 'is the idea that life forms evolved a host of features that facilitate the ability of the organism to reproduce (Geher 2014, p. 5)'. Understanding reproductive success is crucial for understanding why a specific kind of organism with certain features exists. A species of an organism exists now because this species can competitively and stably reproduce offspring, a certain proportion of which will survive. To achieve this result, organisms of this species must own features and traits that contribute to and enhance the chance of reproduction.

Otherwise, this species of organism would not have existed due to the fact of its ancestors' inability to reproduce.

In addition, according to this view, survival is only the instrument for reproductive success. An organism is 'designed' and 'optimized' for its survival in a given ecological condition because its survival is positively related to its reproductive success. A dead organism cannot give birth to any offspring, and with a longer life, an organism can produce more offspring. Organisms with traits that can enhance their chance of survival have greater advantages in reproductive success and will, hence, outcompete their competitors after generations:

Survival, from the perspective of evolution, is a tool that ultimately works toward reproduction . . . . A simple understanding of evolution is the idea that organisms that exist *must exist* because their ancestors had features that led to [reproductive success] (otherwise the organism in question couldn't exist). So any features of a species that are *species typical* may well have the *ultimate purpose* of increasing [reproductive success] (Geher 2014, p. 5, emphasis original).

According to this view, we should keep in mind that reproductive success is prior to survival. 'All things equal, qualities that facilitate reproduction are more likely to be selected than qualities that only facilitate survival (Geher 2014, p. 16)'.

Therefore, when trying to explain why a specific feature or trait of an organism has occurred, we can investigate how this feature or trait is relevant to the organism's survival and reproduction. In addition, as mentioned above, reproductive success is more critical than survival in evolution.

Another crucial idea is adaptation. By adaptation, I mean 'phenotypic features (morphological structures, physiological mechanisms, and behaviors) that are present in individual organisms because they are favoured by natural selection in the past' (Thornhill and Palmer 2000, p. 5). A trait favored by natural or sexual selection has the function of helping 'members of the species overcome some important survival or reproduction-based hurdles and facilitates reproduction (Geher 2014, p. 14)'. That is, if a trait obtained by an organism through mutation or some other methods can bring the organism some advantages in survival or reproduction, all things equal, this organism with this trait would have more offspring than other organisms without it. After generations, organisms with this trait will be dominant to a certain degree in this species. As a result, this trait will be common in this species.

Evolutionary psychologists explain the occurrence of human psychological mechanisms in terms of adaptation. Human psychological mechanisms, as physiological traits, are products of evolution. Those psychological mechanisms remain in modern humans because they are adaptations themselves or are related to an adaptation which contributed to human survival or reproduction in ancient times and was thus selected. According to this view, when seeking the evolutionary cause of a specific human behavior, it is necessary first to figure out the psychological mechanism behind it and then investigate how this psychological mechanism as an adaptation is related to the survival or reproduction of ancestral humans. Evolutionary criminologists Russil Durrant and Tony Ward (Durrant and Ward 2015, pp. 126–27) consider adaptation the key idea to deciphering the underlying mechanisms of criminal behaviors:

Because evolution via natural (and sexual) selection is an inherently competitive process that entails differential fitness, then—all other things being equal—any characteristic that advances survival and reproductive success at the expense of the reproductive fitness of conspecifics is going to be selected for. To the extent that crime involves the infliction of harm and the 'unfair' appropriation of resources from others then we would expect mechanisms that underlie such behavior to be the target of natural selection. One prominent approach taken by evolutionary psychologists is, therefore, to argue that crime—or the mechanisms that underlie crime—reflects the operation of evolutionary adaptations.

Criminal behaviors, together with other human behaviors, are related to evolutionary adaptations and have to be understood in terms of adaptations.

Furthermore, not all behaviors are themselves adaptations. They may be a byproduct of an adaptation. A psychological mechanism may lead to an act for which this mechanism is not originally designed.

For example, suppose that being aggressive in hunting had a positive effect on the survival and reproduction of human ancestors in ancient hunter–gatherer societies. Thus, this trait was selected and inherited by some human offspring as an adaptation. As a result, some people are more aggressive and more disposed to fight. Moreover, suppose that an evil gang has found this evolutionary fact and has recruited people with this trait to train them as killers. In this case, it cannot be concluded that the criminal behaviors of those people are adaptations. It is a byproduct of the adaptation of being aggressive in hunting. These criminal behaviors are byproducts of the adaptation of being aggressive but are not adaptations themselves. Different human behaviors and phenomena are related to adaptation in different ways. Criminal behaviors are related to adaptation at least in the following five ways.

First, criminal behaviors may be the selected adaptations themselves. Second, they may be conditional adaptations, which only appear in some population members under certain conditions. Third, they may be adaptations as the result of frequency-dependent selection. Individuals with these adaptive characteristics will only occupy a certain proportion of a population in a dynamic way in terms of their frequency in a group. Fourth, they may be byproducts of adaptations. They may supervene on or may be caused by adaptations and are not the adaptations themselves. Finally, they may be pathological malfunctions of an adaptation or multiple adaptations (Durrant and Ward 2015, pp. 127–28). These five situations can also apply to other human behaviors. Other human behaviors may be relevant to some adaptations in the five ways.

Psychological mechanisms are relevant to human behaviors in the above five ways. Some human behaviors are what their relevant psychological mechanisms are set to cause in some specific circumstances. They are related to psychological mechanisms in the first three ways; some are byproducts of one or multiple psychological mechanisms; and some are the result of the malfunction of one or several psychological mechanisms. To understand why certain human behaviors occur, it is necessary to examine the psychological mechanisms operating behind them. The same applies to behaviors that cause evil.

As a result, if naturalism is true, psychological mechanisms are human behaviors' ultimate causes. Human behaviors should not violate the principles of psychological mechanisms.

## 5. Raping and Then Killing the Victim

Raping and then killing a victim is a kind of gruesome human behavior that, without a doubt, causes great suffering for the victim and the victim's family and friends. Though raping and then killing a victim is not common compared to other crimes in human society, it is not rare either. It is sad that many people have become victims of this crime. What kinds of psychological mechanisms would lead to such a cruel behavior? Since this crime is most often committed by males and its victims are usually females, here I focus on the possible evolutionary accounts for a male's raping and then killing of a female victim. I examine evolutionary accounts of male rape and then conclude that raping and then killing the victim should not have appeared in the process of human evolution. Cases of this horrendous evil consequently are evidence against naturalism. To start with, let us examine the evolutionary causes of rape.

Whether rape is an adaptation of males is controversial. Some evolutionary psychologists have proposed that rape is an adaptation that can enhance the opportunity for copulation and, hence, can help the perpetrator produce more offspring,<sup>5</sup> whereas others do not agree with this conclusion and contend that rape is a byproduct. Evolutionary psychologists who suppose that rape is an adaptation often focus on the potential reproductive

benefits that could be brought about by rape. According to this view, rape can help males conquer some disadvantages in reproduction in some specific situations. For example, William F. McKibbin et al. (McKibbin et al. 2008, p. 89, emphasis original) propose that there exist five kinds of rapists:

(1) [D]isadvantaged men who resort to rape, (2) 'specialized' rapists who are sexually aroused by violent sex, (3) men who rape opportunistically, (4) high-mating-effort men who are dominant and often psychopathic, and (5) partner rapists motivated by assessments of increased risk of sperm competition.

William F. McKibbin et al. (McKibbin et al. 2008, pp. 89–92) argue that rape is a conditional mating strategy. These five types of rapists exist because they can increase the chances of reproduction, and each type of rapist is associated with a psychological mechanism in response to a specific environmental condition.

The first type of rapist has appeared because some men have less access to consensual copulation due to the fact of their lower social status, physical conditions or other reason. They find themselves in such a disadvantaged situation, and so some of them may rape to gain access to copulation. In this way, they can increase reproductive opportunities. As for the second type of rapist, for some reason, the second type of rapist is more sexually aroused by violent copulation and sex. Rape can help this kind of rapist perform copulation and, therefore, it is beneficial to the rapist's reproduction. The third type of rapist may have access to consensual sex. However, they desire to have additional copulation when there are opportunities, even if rape is involved. This kind of rapist can enhance the chances of reproduction by engaging in extra copulation.

The fourth type of rapist tends to be dominant and aggressive with respect to copulation. They are often characterized as psychopathic. Such rapists usually take a high-mating-effort strategy. They will pursue many partners without much investment and will fulfil their goals by coercion when necessary. This mating strategy also has a positive evolutionary value in increasing the reproduction of the rapist. Finally, men who are under the condition of sperm competition may rape their partners. Sperm competition means that the sperm of different males are accessible to the same women's egg. In order to beat other competitors in sperm competition, a man may aim to have greater numbers of sperm accessible to the woman's egg, even if he has to perform it coercively and violently. In this way, the rapist can enhance the chance of letting the woman conceive his sperm, and this strategy is thus also designed to promote the reproduction of the rapist.<sup>6</sup>

The above analysis of rapists shows that rape may be an adaptation that helps the perpetrator increase the frequency of copulation and enhance the chances of reproduction. In addition, the proposal that rape is an adaptation has also received some support from animals. Observations of the orangutan species show that sexual coercion is popular among this species. There exists evidence supporting that among sexually mature male orangutans, orangutans with a large size and weight, which normally weigh over 80 kg and are approximately twice as large as the small ones, are less likely to commit coercive copulations. Forced copulations may exceed more than 80% of a small orangutan's entire copulations at some orangutan sites (Huppin and Malamuth 2015, p. 638). This phenomenon of orangutans implies that some disadvantageous male orangutans adopt rape as a strategy for copulation. The same phenomenon may have also occurred among human male ancestors. For ancestral male humans, rape may be an adaptation that can positively contribute to the reproduction of the perpetrator.

However, the proposal that rape is an adaptation is controversial. For example, Eric A. Smith et al. (2001, pp. 132–34) have built a model to argue that rape is not an adaptation. They have listed several possible benefits and costs brought about by a single event of rape, and each benefit and cost is assigned a reproductive value. Their calculation suggests that a single event of rape will bring more cost than benefit to the rapist in ancestral human society: For a 25-year-old male, the value of the benefit of carrying out rape is 0.0078, while the value of the cost is 0.0762. The cost caused by rape is almost ten times greater than the benefit brought out by it. Therefore, it is improbable that rape is an adaptation



for ancient men. However, if rape is not an adaptation, then it may be a byproduct of other adaptations. Some evolutionary psychologists have tried to explain rape in this way. For example, Durrant and Ward (Durrant and Ward 2015, p. 151) advise that rape is a byproduct of a more general adaptation of men:

Although it is plausible to suggest that rape might have been specifically selected for (i.e., is an evolutionary adaptation), we think that our current best evolutionary explanation is more consistent with the view that rape is a byproduct of other evolved adaptations, in combination with particular developmental and ecological contexts. Specifically, a greater tendency for men (relative to women) to seek impersonal sexual relationships, to dominate and control the sexual behavior of women (especially their partners), and to employ force for instrumental purposes, means that for some men, under certain circumstances, the likelihood of perpetrating sexual offenses is increased . . . . [S]exual coercion is not uncommon among extant hominid species, although it is not the primary mode of obtaining sexual access to females in any of the species with the possible exception of orangutans. This suggests that the use of force to obtain sexual access to females reflects more general male tendencies to dominate and control females for reproductive purposes, rather than specific adaptations for rape.

According to this view, rape itself is not an adaptation. It is caused by men's more general psychological mechanism of gaining dominance over women for the sake of reproduction. However, even if rape itself is not an adaptation, the psychological mechanism that motivated it is still relevant to the enhancement of reproduction success. In Durrant and Ward's statements above, rape is caused by males' more general tendencies to put females under domination for the sake of reproduction. That means the end of the psychological mechanism leading to the behavior of rape is still to increase the chance of the reproduction of the rapist.

Therefore, whether rape is an adaptation or not, it is caused by psychological mechanisms that aim to increase the rapist's chance of reproduction.

In the cases of raping and then killing the victim,<sup>7</sup> the psychological mechanisms behind it must be the same or rather similar to those in cases of rape without killing, since many, or at least some, perpetrators of raping and then killing a victim only intend to commit rape, rather than murder, at the beginning, that is, they are sexually motivated, and it seems rather plausible that they are motivated by psychological mechanisms of rape.

If this is the case, then the behavior of raping and then killing a victim would be confusing. Psychological mechanisms that consciously or unconsciously motivate rapists to commit rape should not lead to the behavior of killing the victim. As mentioned above, the end of these psychological mechanisms is reproduction, so these psychological mechanisms would be triggered by certain factors in the environment and would lead the rapists to execute coercive copulations. The relevant psychological mechanisms selected in the process of ancestral humans have 'set' rapists to rape to attain the goal of reproduction.

However, by killing their victims after rape, the rapist not only gains no benefits in respect of reproduction, but also takes many risks that will threaten their lives. As a result, they have put their survival and reproduction at risk by raping and then killing their victims. For example, the rapist may be hurt and killed by the kin of the victim, especially in ancient times when no law would have forbidden people to seek revenge for their family. The behavior of raping and then killing has completely contradicted the functions of their relevant psychological mechanisms. The relevant psychological mechanisms of rape require the rapists not to kill their victim, because these psychological mechanisms behind this horrendous behavior have been 'designed' to increase the chances of their reproduction. The behavior of raping and then killing a victim, thus, contradict the psychological mechanisms of rape. This horrendous behavior disconfirms naturalism as a result.

Nevertheless, it may be objected that the psychological mechanisms of raping and then killing a victim are (at least partially) different from those of rape without murder.

Rapists kill their victims after raping because they want to escape possible revenge from the victims' family and friends or the jurisdictional system. They behave in this way for the sake of their own benefit of survival. Their psychological mechanisms designed to assure their survival have been triggered by some external factors accompanying the event of rape.

This objection suggests that the psychological mechanism for self-survival causes some rapists to kill their victims. This objection may look promising at first glance, but some critical problems remain for this objection.

First, this objection cannot account for rapists who kill their victims for reasons other than fear. Some rapists may commit this draconian crime for the sake of their survival. However, it is also true that some do this kind of behavior for other reasons and motivations.

For example, some rapists murder their victims because it allows them to target more victims and carry out more rapes. These rapists enjoy the behavior of rape itself, so they do not want to take the risk of letting their victims threaten their chance of rape in the future. Hence, they kill their victims. In such cases, what is behind their homicides is not a psychological mechanism for survival. In addition, psychological mechanisms relevant to reproduction cannot apply to them as well since they always murder their victims of rape. Accordingly, this objection fails to account for the cases in which perpetrators rape and then murder their victims for motivations and reasons irrelevant to their survival, and these cases still can disconfirm naturalism.

Second, this objection also contravenes some principles of evolution. As mentioned above, adaptations of reproduction are prior to adaptations of survival. Adaptations of reproduction are more likely to be selected. 'All things equal, qualities that facilitate reproduction are more likely to be selected than qualities that only facilitate survival (Geher 2014, p. 16)'. If this is the case, then the psychological mechanisms motivating rape should be dominant over the psychological mechanisms leading to the victims' homicide.

Imagine that there were two groups of humans in the Pleistocene epoch in which various human psychological mechanisms appeared and were selected. One group was equipped with psychological mechanisms that would lead to rape but not the murder of the victims; the other group, on the other hand, was equipped with psychological mechanisms causing not only rape but also the murder of the victims. All things being equal, the group with the psychological mechanisms that only motivate rape would have advantages in survival and reproduction over the other group. The group with the psychological mechanisms for both rape and killing, in fact, gained nothing by engaging in the horrible behavior of raping and then killing their victims. Instead, they put themselves at great risk by committing this behavior because they may have been hurt or killed by their victim, the victim's friends or kin, people who think their existence is a great threat to their spouses or daughters and the like.

As a result, psychological mechanisms that motivate men to rape should be prioritized over psychological mechanisms that motivate the perpetrators to kill their victims. The psychological mechanisms causing perpetrators to kill the victim should be compromised or dominated by the psychological mechanisms of rape. If the behavior of rape is initiated by the psychological mechanisms of rape or general psychological mechanisms relevant to reproduction, the murder of the victim of the rape should not follow, since this consequence is contradictory to the goal of those psychological mechanisms of rape, which aim to enhance the chance of reproduction. The behavior of raping and then killing a victim only brings risk to the perpetrators' survival and reproduction. Therefore, this objection contradicts some principles of evolution and does not stand.

In addition to the above objection, naturalists may raise the objection that rape and then killing are committed by people whose psychological mechanisms do not function properly. Something is wrong with their certain psychological mechanisms, and these malfunctioning psychological mechanisms then lead to the behavior in question.

However, supporters of naturalism cannot simply appeal to the malfunctions of some psychological mechanism. They have to first show that all cases of rape with murder are

caused by the malfunctions of some psychological mechanisms. It is indispensable to identify what the malfunctions are and how they appear. Simply appealing to malfunctions without proving their existences and indicating their cause looks like appealing to ignorance. It does not explain the problem away.

In summary, the behavior of raping and then killing a victim has breached its relevant psychological mechanisms' adaptive functions and purposes. Cases of this behavior constitute a problem of evil for naturalism and refute it.

## 6. Suicide

In this section, I argue that suicide contradicts the evolutionary functions of its relevant psychological mechanisms and, hence, disconfirms naturalism.

Human beings are different from animals in that we are more aware of our own existence. We know that we exist and are occupied with the idea of self. We always know that as human beings, we ourselves are distinguished from other humans, animals and objects. Our thoughts and deeds are always related to 'I, me, and mine'. Most of us will put ourselves as the first priority in a usual situation. We strive to satisfy our need to improve the quality of and extend the length of our lives. Our existences are among the most important things in our lives.

However, while many people get along with their existence well and try their best to serve the 'self', some are troubled by their own existence. They may even resort to suicide to end their own life.

People have suffered from suicide. So, what kind of psychological mechanism will lead to suicide? All of the human psychological mechanisms aim to ensure one's survival and procreation. Suicide has betrayed the adaptive functions of relevant human psychological mechanisms that were selected to increase the chances of survival and procreation. For example, suicide contradicts, among other things, the adaptive functions of emotions, since suicide may be accompanied by suicidal emotions.

Evolutionary psychologists have suggested that emotions play a critical role in human life. They are coordinators that can help solve the conflict of one's different physiological needs. For instance, in a jungle, if one is sleepy and is also hearing the steps of a lion coming from a nearby place, the function of fulfilling the need for sleep and the function of escaping from potentially dangerous assaults are in conflict. It is important to decide which need should be prioritized. The result of prioritizing the wrong need could be devastating. If one falls asleep and, thus, does not take the necessary instruments to prevent the lethal event of being assaulted by a lion, this person may be seriously hurt or killed by the lion. In order to avoid such consequences, emotions are evolved and selected to reconcile this kind of conflict and help an individual perform the more urgent function(s) to satisfy the more important need for the current situation.

In the above case, when hearing the sounds of a lion in a nearby place, we humans will automatically feel nervous and fearful. Under the influence of these emotions, our hearts will beat faster, muscles will contract in preparation to fight or escape and our senses and attention will be sharper. All of the following changes make it difficult to fall asleep and render a person more prepared for immediate danger. Therefore, emotions are adaptations selected to coordinate and orchestrate different physiological mechanisms (Tooby and Cosmides 2015, p. 58).

According to this view, emotions are adaptations that motivate people to perform actions to ensure one's survival or reproduction. However, if emotions are adaptations designed to coordinate different physiological mechanisms to help human beings survive or procreate, emotions should not motivate one to commit suicide. Cases of suicide with suicidal emotions have violated the adaptive functions of emotions. Aside from emotions, suicide also contradicts the adaptive functions of other human psychological mechanisms. All human psychological mechanisms aim to enhance the chances of survival and procreation. Human psychological mechanisms should not lead someone to commit suicide. Suicide is one of 'the two phenomena that have been most difficult to reconcile

with evolutionary theory, as both directly affect human reproductive fitness (Aubin et al. 2013, p. 6874).

Suicide should not be an adaptation since causing one to commit suicide contributes nothing to one's survival and procreation. It is suggested that suicide may be an altruistic adaptation, in which people who are seriously ill or old can reduce the burden on their kin by suicide. In this way, suicide can contribute to the prosperity of a group (Confer et al. 2010, p. 122). However, most cases of suicide are not altruistic and many of those who commit suicide are young and physically healthy. 'Across the world the great majority of suicides are egoistical . . . . Many of those who do it [suicide] are young (Humphrey 2018, p. 3)'. Suicide in those egoistical and young cases is not an adaptation, since suicide in those cases is contrary to the adaptive functions of human psychological mechanisms.

Accordingly, most cases of suicide are not adaptations. Additionally, because they are quite common, they are not the result of malfunctions of psychological mechanisms. They should be caused by some psychological mechanisms as responses to certain environmental factors and stimuli. For example, 'among today's American high school students, 60% say they have considered killing themselves and 14% have thought about it seriously in the last year (Garland and Zigler 1993, cited in Humphrey 2018, pp. 3–4)'. The situation has been exacerbated in recent years. 'Since 2007 . . . suicide rates [in the United States] have increased by 76 percent for ages 15 to 19 . . . . In early 2020, an estimated 1 out of 4 young adults contemplated suicide (Curtin and Heron 2019; Prior 2020, cited in Hutcherson and Williams 2021, pp. 4–5)'. The phenomenon of suicidal disposition is of a great scale such that it is not an occasional and random malfunction of some psychological mechanisms. There should be some psychological mechanisms that systematically cause the phenomenon of suicidal disposition under certain conditions.

Therefore, naturalists may contend that suicide is caused by some kind of mental illness. Human psychological mechanisms under some conditions may trigger some mental diseases and then lead to suicide. Nevertheless, attributing suicide to mental diseases may have the following problems.

First, whether everyone who has suffered from suicide can be classified mentally ill is doubtful. Although many cases of suicide are highly relevant to mental disease, it should not be taken for granted that each case is caused by mental diseases. As mentioned above, suicide is a rather common phenomenon among some groups. To conclude that each case of suicide is caused by mental diseases is a difficult task. Mental diseases seem unable to explain some phenomena of suicide, such as suicide memes. Suicide is contagious. A celebrity's suicide can provoke a wave of suicides (Humphrey 2018, pp. 4–5).

For example, Yukiko Okada, a famous Japanese idol, killed herself by jumping from a high building on 8 April 1986, when she was 18 years old. Her death initiated a wave of suicides. Within two weeks, at least 28 young people killed themselves (Snyder 1986), and her death 'triggered a wave of suicides among Japanese youths, pushing up the number of young women who committed suicide by jumping by more than threefold (Li 2020, p. 64)'. It is doubtful that people who kill themselves in this kind of suicidal wave are all diagnosed with some mental illness.

In addition, mental diseases do not occur from nothing. Appealing to mental diseases does not automatically solve all problems. It is still necessary to answer why those mental diseases have occurred in the first place. Proponents of this explanation have to delineate the underlying psychological mechanism(s) and relevant environmental factors that lead to mental diseases as the causes of suicide.

For example, it is possible to appeal to depression to explain suicide, but why depression has occurred in the beginning still remains unanswered. Depression may be the consequence of the interaction of some internal psychological mechanisms and external environmental factors. Then, it is critical to investigate what psychological mechanisms cause depression and how they appeared in the process of human evolution. It has been suggested that some adaptive psychological mechanisms function behind depression:

Many adaptive functions have been suggested for low mood or depression: facilitating disengagement from unreachable responsibility, expressing a need for help, and signaling the act of yielding in a hierarchy conflict. An increased fitness may result from sadness, pessimism and lack of motivation, in the way that they lead to the inhibition of certain behaviors, for example actions in the absence of a practicable plan, dangerous or futile challenges to dominant figures, efforts that would eventually damage the organism. Crying elicits empathy, comforting behaviors in observers and may help strengthen bonds and result in an increase in social support. Feelings of worthlessness and guilt might motivate introspective understanding of how its actions were problematic and may also elicit forgiveness from others involved in the situation (Aubin et al. 2013, pp. 6878–79).

Depression may have these adaptive functions for human beings. However, these adaptive functions aim at the subject's survival and reproduction as well. All these suggested adaptive functions imply that depression can help one avoid or escape from some detrimental situations to enhance one's welfare as regards survival or reproduction. If so, depression as an adaptation should not lead to the behavior of suicide. Depression as an adaptation is supposed to help one's survival and reproduction, but now it has operated the opposite function by producing suicide, which facilitates self-destruction. This phenomenon contradicts depression's proposed adaptive function. Appealing to mental diseases does not help naturalism evade the difficulties caused by suicide.

In summary, all human psychological mechanisms are programmed to enhance an individual's chance of survival and procreation. Additionally, many, or at least some, cases of suicide have violated this basic principle of human psychological mechanisms. Those cases, thus, disconfirm naturalism.

### **7. Appealing to the Coincidence and Randomness of the Mechanisms of Evolution and Heredity**

In the above two sections, I argue that the cases of rape with murder and suicide make it reasonable to believe that naturalism is not true. Proponents of naturalism may object that evolution is not perfect, and it is not unusual that something simply goes wrong in the process of evolution and heredity. Some confusing human behaviors appear because of coincident factors such as random genetic mutations or underdeveloped psychological mechanisms. Those behaviors occur because of the coincidence and randomness of the mechanisms of evolution and heredity. In this way, naturalism may be able to avoid the evidential argument from evil against naturalism while not having to identify the causes of the human behaviors in question.

However, this strategy does not work because the tenor of evidential arguments requires the proponents of naturalism to provide a plausible reason rather than simply appealing to coincidence or ignorance. Rowe's evidential argument from evil may help readers understand the necessity of identifying the reason. Rowe's argument is as follows (Rowe et al. 2017, p. 132):

1. There exist horrendous evils that an all-powerful, all knowing, perfectly good being would have no justifying reason to permit.
2. An all-powerful, all-knowing, perfectly good being would not permit an evil unless he had a justifying reason to permit it.
3. Therefore,
4. God does not exist.

To respond to this argument, theists cannot simply reply that God is so wise and powerful that he must have some justifying reason for the evil in question. This kind of response answers nothing. Theists are required to detail why God's wisdom and power lead to the evil in question.

Similarly, the evidential argument from evil against naturalism requires proponents of naturalism to delineate the causes of the behaviors in question. Naturalists cannot simply vaguely appeal to the coincidence and randomness of the mechanisms of evolution

and heredity. The relevant proximate and ultimate causes should be identified even if it is proposed that the evil behavior in question is coincidentally and randomly produced. Without clarifying the relevant proximate and ultimate causes, the proponents of naturalism in fact explain nothing and cannot defend naturalism.

In addition, proponents of naturalism surely can take the approach of skeptical theism to develop 'skeptical naturalism', but that is another story. The coincidence and randomness of the mechanisms of evolution and heredity need to be refined into a decent skeptical naturalism. Proponents of naturalism should delineate why coincidence and the randomness of the mechanisms of evolution and heredity can invalidate the evidential argument from evil against naturalism. The following brief introduction to skeptical theism may help clarify how naturalists should develop their skeptical naturalism.

To defend theism from the evidential argument from evil, skeptical theists reply that the plausibility of the first premise of the evidential argument from evil is based on the so-called noseem inference. The noseem inference works in the following way (Rowe et al. 2017, p. 146):

So far as we can tell (detect), there is no x.

So, it is more likely than not (perhaps significantly so) that

There is no x.

The noseem inference infers from our not conceiving x to the conclusion that there is indeed no x. It functions well in many cases. For example, one can infer from not seeing a dog in a classroom, all things being equal, the conclusion that there is not any dog there. However, in some cases, adopting noseem inference is problematic. For instance, one cannot infer from not seeing (detecting) a kind of virus in a room the conclusion that there is no such kind of virus there. That is because human beings are not equipped with the ability to detect things such as viruses with the naked eye. Whether a noseem inference is a plausible inference depends on our ability to detect a specific object in a certain environment. The noseem inference of the first premise of the evidential argument from evil can be summarized in the following two steps (Rowe et al. 2017, pp. 148–49):

Step 1: we do not conceive any possible good that would justify God in permitting those evils.

Step 2: it is very likely that there is no good that would justify God for those evils.

Skeptical theists propose that because of the epistemic gap between God and human beings, it cannot be concluded that God does not have justifying good for the evil he permits. God is omnipotent, omniscient and supremely good. Human beings cannot fathom God's will and wisdom. Humans are not equipped with suitable capacity to detect if God has a justifying reason for a seemingly gratuitous evil. God's will and wisdom are just beyond our ken. People should withhold their judgements on whether God has a justifying reason for a seemingly gratuitous evil in the world. The inference from step 1 to step 2, accordingly, is not a good move.

Skeptical theists do not only simply appeal to God's omni-attributes, but also develop different theories to explain why God's omni-attributes undermine the noseem inference of the evidential argument from evil. For example, Stephen Wykstra raises the epistemic principle CORNEA to decide if a noseem inference is plausible or not. The CORNEA is as follows (Wykstra 1984, p. 85):

On the basis of cognized situations, human H is entitled to claim 'It appears that p' only if it is reasonable for H to believe that, given her cognitive faculties and the use she has made of them, if p were not the case, s would likely be different than it is in some way discernible by her.

According to CORNEA, people are qualified to conclude that it appears that God does not have any justifying reason for an evil only if they can tell some differences when God has one. However, because of human cognitive limitations, it is not plausible to claim that

if God has justifying reasons, people would likely discern them. Therefore, the noseem inference in the evidential argument from evil is not plausible. Wykstra devises CORNEA to block the noseem inference in the evidential argument from evil to defend theism from this argument.

Wykstra's CORNEA is not without problems.<sup>8</sup> However, he raises an epistemic principle to explain why God's supreme goodness and omnipotence constitute a plausible reason for not judging that a particular evil is gratuitous. Naturalists who want to adopt an approach similar to that of skeptical theism should provide some epistemic principles to explain why the coincidence and randomness of the mechanisms of evolution and heredity can invalidate the evidential argument from evil against naturalism presented in this paper.

As a result, naturalists should indicate what psychological mechanisms work behind the behaviors in question and how they cause these behaviors, or develop skeptical naturalism to defend naturalism. Otherwise, the evidential argument from evil against naturalism still makes it reasonable to believe that naturalism is not true.

## 8. Evaluation and Conclusions

In this paper, I construct an evidential argument from evil against naturalism from cases of murdering a raped victim and suicide. I first argue that evolutionary causes are necessary for naturalism to explain why certain human behaviors have appeared in the world. Naturalism supposes that events and phenomena in the world have completely natural causes. Because human beings are the product of evolution, evolutionary causes as the ultimate causes are indispensable for a full delineation of a human trait or behavior. Furthermore, I propose that psychological mechanisms as evolutionary causes are the ultimate causes of human behavior. Psychological mechanisms interact with environmental stimuli and then lead to various responses (human behaviors). When explaining why a particular human behavior has occurred in our society, proponents of naturalism must delineate the psychological mechanism at work and how it has interacted with external factors.

After establishing that psychological mechanisms are the ultimate causes of human behaviors, I argue that some human behaviors that cause evils contradict the principles of their ultimate causes and should not occur. That is, these behaviors violate the adaptational functions of their psychological mechanisms. I first discuss the horrendous behavior of raping and then killing a victim. By killing the raped victim, the male perpetrator acts against the psychological mechanism of rape and brings no benefits to his survival and reproduction. This behavior betrays the functions and goals of its relevant psychological mechanisms. It should not occur in a naturalistic world. Second, I then argue that suicide also disconfirms naturalism because this behavior is solely harmful to people's survival and reproduction and is contrary to the adaptational functions of all human psychological mechanisms.

Therefore, these evils are inconsistent with naturalism. Each case of these evils is evidence against naturalism. Since there are many cases of these evils in the world, they will collectively constitute a great challenge to naturalism. They will make it plausible to believe that naturalism is not true. Furthermore, the evidential argument from evil does not limit itself to the cases of rape with murder and suicide. It is possible to include other human behaviors that cause evil to strengthen this argument.

As mentioned in the introductory section, this argument is a game changer in the sense that theism may be able to outcompete naturalism concerning the existence of evil. Now naturalism is also disconfirmed by the existence of evil. In response to this argument, naturalists may claim that naturalism can plausibly explain more cases of evil than theism such that it is still a more plausible hypothesis.

Nevertheless, first, the cases of evil that disconfirm naturalism are numerous. Without solving the evidential problem of evil raised in this paper, naturalism is still significantly disconfirmed by many cases of evil. It may be more plausible than theism, but it may be the case that both naturalism and theism are implausible theories for evil. Dismissing another

competing theory does not automatically fix the evidential problem of evil for naturalism. Naturalism is still a poor theory for the existence of evil.

Second, to make such a claim, naturalists have to first refute theistic explanations for evil and then show that naturalism indeed can plausibly explain more evil in the world. Before showing that, it cannot be reasonably concluded that naturalism is more plausible than theism concerning evil.

Similarly, to reverse the problem of evil, theists should develop plausible theistic explanations for evil and devise more problems of evil for naturalism. In this way, theism can defeat naturalism and become a more plausible and preferred hypothesis for evil. Namely, the evidential argument from evil against naturalism ends the ‘hegemony’ of naturalism over the problem of evil. The existence of evil may favor theism over naturalism as a result.

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## Notes

- <sup>1</sup> For example, see, [Adams \(2013\)](#); [Nagasawa \(2018\)](#). Adams argues that theism is more compatible with a world with evil. To some extent, her argument can be transformed to argue that atheism is not consistent with evil. Both of their arguments target atheism, but their arguments can apply to naturalism as well.
- <sup>2</sup> For an introduction to other competing worldviews, such as animism, pantheism, and panentheism, see, [Smith \(2023\)](#); [Levine \(2003\)](#); [Nagasawa and Buckareff \(2016\)](#). I would like to thank an anonymous referee for bringing these references to my attention.
- <sup>3</sup> For the sake of simplicity, I omit traits and only mention human behaviors in the rest of this chapter.
- <sup>4</sup> This assumption is not without controversy. For example, see [Forrest \(2000\)](#). My thanks to an anonymous referee for mentioning this point and the reference.
- <sup>5</sup> Notice that here I only discuss rape perpetrated by men on women, and only examine a specific kind of rape which can be defined as ‘the use of force or threat of force to achieve penile-vaginal penetration of a woman without her consent ([McKibbin et al. 2008](#), p. 86)’. The definition of rape in criminal law may be broader than the given one here. That is, it may not be limited to the behavior of penile–vaginal penetration. Other kinds of sexual offending behaviors may be also considered as rape, but this will not influence the discussion here.
- <sup>6</sup> For a brief introduction to the five types of rapists, see [Durrant and Ward \(2015\)](#), pp. 149–50).
- <sup>7</sup> Notice that here I exclude cases in which raping and then killing the victim is taken as an instrument of coercion or revenge, such as those committed by soldiers in an inhuman war. Psychological mechanisms motivating perpetrators in these cases may not be specifically relevant to reproduction. They may be more similar to psychological mechanisms of violence and war in which gaining and securing resources may be the major goal. On the other hand, in this section, I am talking about cases in which the perpetrators are motivated by sexual desires or factors relevant to sex. Therefore, the psychological mechanisms involved in these cases of raping and then killing the victim are the same as or rather similar to the psychological mechanisms in cases of raping without killing.
- <sup>8</sup> See, for example, [Boyce \(2014\)](#); [Draper \(2014\)](#).

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