Evolutionary Explanation of Psychopaths

Abstract
Psychopaths are brutal individuals, having no empathetic concern for others. Initially, the existence of psychopaths seems to be a mystery from an evolutionary point of view. On close examination, however, it can be accommodated by evolutionary theory. Brutal individuals excelled meek individuals in the desperate circumstances where they had to fight their competitors over natural resources for survival and reproduction. This evolutionary explanation of psychopaths receives support from Pinker's observation of the history of brutality. We have good reasons for predicting that psychopaths are likely to die out in the future.

Keywords: Brutality, Cheater, Evolution, Psychopath, Resources

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1. Introduction

Brutality comes in degrees. Some are slightly brutal, and others are highly brutal. The word, 'psychopaths' is not amenable to a precise definition, but it refers to individuals with the highest degree of brutality. They do not feel empathetic pain when they kill innocent people. Nor do they feel remorseful for what they have done. When they premeditate murder, they choose murder weapons, victims, and crime scenes without feeling nervous. They feel good when their victims beg for life in a helpless state, thinking that they completely conquered their victims. Some of them do not discard their murder weapons but stash them away because for them these objects are associated with good memories. Such inner traits, however, are concealed by their opposite outer traits. They are superficially intelligent professionals at work and charming fathers at home. They make conscientious efforts to build and maintain good reputations. People around them are shocked when their inner traits are disclosed to the world. This paper concerns the violent individuals who have the foregoing gruesome features.

The existence of psychopaths seems to be an anomaly to evolutionary theory. It is not clear why they exist from the evolutionary point of view. After all, they seem to have a lower chance to survive and reproduce than non-psychopaths. If one acts on his propensity to kill others, he is likely to be caught in the end and punished by others, thereby lowering the probability of propagating his genes. Psychopaths are also likely to be harmful to the preservation of the group they belong to because they tend to reduce the population of the group. This paper attempts to account for the existence of psychopaths in terms of evolutionary theory. I will argue that on close examination, atrocious individuals and groups were more likely to perpetuate themselves than meek individuals and groups in certain circumstances to be depicted below. Finally, I will predict that psychopaths are likely to die out in the future.

2. Different Explanations

Some researchers argue that there is a genetic basis for psychopathy. Individuals having

certain genes have the potential for antisocial behaviors.

> Recent data suggests that there is indeed a genetic contribution to the emotional dysfunction facilitating antisocial behaviors. (Blair, Mitchell, and Blair, 2005: 29)

Thus, a genetic explanation can be given of psychopaths, viz., some individuals possess psychopathic traits because they have what might be called brutality genes. The brutality genes predispose individuals to be aggressive and indifferent to social norms. The genes get activated under certain environmental conditions, leading to gruesome crimes.

Some researchers discovered the properties of the brain responsible for psychopathy. May and Beaver (2012), and Beaver, Vaughn, DeLisi, Barnes, and Boutwell (2012) claim that neuropsychological deficits are consistently related to psychopathic traits. Parez (2012) contends that psychopathic tendencies are associated with significant impairment in a region of the brain. These studies indicate that the properties of psychopath's brains are different from those of non-psychopaths' brains, and that certain dysfunctions in the brain are responsible for psychopathy. Thus, there can be a neuropsychological explanation of psychopaths, viz., psychopaths behave as they do because of the dysfunctions in their brains.

Other researchers argue that psychopathy can be explained from a developmental point of view, viz., child abuse is responsible for psychopathic traits. From traumatic experiences in childhood, a person develops bitter feelings toward the world, and this antipathy culminates in heinous crimes. However, the developmental explanation is controversial. Some studies support it, but other studies undercut it. For example, Hare (1993: 158) notes that psychopathic traits are manifested at a very early age, which indicates that they are independent of child abuse. In contrast, Gao, Raine, Chan, Venables, and Mednick (2010) find that childhood abuse is correlated with high psychopathy scores in adulthood. Thus, further research needs to be done to determine to whether or to what extent child abuse leads to psychopathic traits.

What is important for my purpose here is that even if the genetic explanation, the neuropsychological explanation, and the developmental explanation are true, they need not exclude the evolutionary explanation that will be proposed below. Suppose that childhood abuse causes psychopathy by activating the dormant brutality genes. Thus, without the childhood abuse, potential psychopaths would not actually become psychopaths. Even so, it is legitimate to ask: Why do some people have the psychological mechanism such that if they go through abuse and neglect in childhood they become psychopaths? Why do they have the brutality genes that activate when they are abused and neglected in childhood? There can be an evolutionary answer to these questions. The genetic explanation, the neuropsychological explanation, and the developmental explanation invoke the proximal causes, whereas the evolutionary explanation invokes a distal cause to explain psychopathy. The different explanations are not exclusive of each other but complementary to each other.

To use Goldman's analogy (1999: 15-16), suppose that an earthquake occurs, a ceiling beam collapses, and John dies. Why did John die? There can be two different answers. The first one says that he died because the ceiling beam fell down. The second one says that he died because there was an earthquake. The proximal cause figures in the first explanation whereas the distal cause does in the second explanation. The two explanations are legitimate, complementing each other. The first one satisfies those who know that the earthquake occurred but do not know specifically what injured John. The second one satisfies those who know that the ceiling beam fell down but do not know why it fell down. The two explanations jointly provide a richer picture of why John died. Analogously, the genetic explanation, the neuropsychological explanation, the developmental explanation, and the evolutionary

explanation of psychopaths jointly yield a more complete picture of psychopaths.

3. Evolutionary Explanations

3.1. The Analogy to Pregnancy Nausea

How was it possible for psychopathy to be in our current gene pool? One possible explanation is that it is a congenital mental dysfunction. A genetic mutation accidentally produced it in the past. Luckily, it has been passed on from generation to generation without perishing, although it decreased the probability that an organism or a group prospers, because it did not significantly reduce the fitness level. A problem with such an explanation is that it appeals to luck, and there might be an interesting explanation that provides an apt reason why the relevant phenomenon is likely to occur.

An explanation of a property becomes interesting when it is dramatically shown to have an evolutionary advantage. Consider, for example, that a woman suffers from nausea during pregnancy. At first blush, the psychological property seems to be a maladaptation. After all, it discourages a pregnant woman from eating food, and if she eats less food, her embryo might suffer from malnutrition. It seems to follow that pregnancy sickness lessens the chance to have a healthy baby, that it is a disadvantageous trait lowering a woman's fitness level, and that it is a mental dysfunction causing only trouble to the woman and her baby. On close examination, however, pregnancy nausea does have an adaptive value. According to Sherman and Flaxman (2002), it is beneficial both to a pregnant woman and to her embryo because the nauseating food might contain chemicals that cause deformation or miscarriage:

> Rather, nausea and vomiting of pregnancy is an intricate mechanism that probably evolved to serve a useful function: protecting the pregnant women and embryo from food-borne infections and toxins. (Sherman and Flaxman, 2002: S190)

It is not surprising that pregnant women who suffer nausea are more likely to have healthy babies than those who do not, that we inherited the mental property from our ancestors, and that it is in our current gene pool. This is a paradigm example where a seemingly disadvantageous trait dramatically turns out to be an advantageous trait from an evolutionary point of view. Like pregnancy nausea, psychopathy can be unveiled to confer an evolutionary advantage on individuals or their groups.

3.2. Cheater Hypothesis

Some theorists (Frank, 1988; Mealey, 1995; Murphy, 2006) advance the cheater hypothesis to explain the existence of psychopaths, viz., psychopaths were selected like other cheaters in nature in our evolutionary history. In the evolutionary context, cheaters "are individuals that receive benefits from partners without reciprocation" (Sachs and Simms, 2006: 585). To take an example, cuckoos do not build nests of their own and do not brood their eggs. Instead, they lay their eggs on the nests of altruistic birds, e.g., wagtails. After hatching, the cuckoos' offspring kick the wagtails' offspring out of the nests. The parenting wagtails take the young cuckoos to be their own offspring, providing food and shelter for them until they grow up and leave the nests. Cuckoos have been spreading their genes by taking advantage of cooperative birds. Similarly, psychopaths are adept at concealing their brutality at home and at work as noted earlier. They have been persisting by cheating others.

There is an important condition that needs to be satisfied for cheaters to persist in nature. Their numbers should remain at a low frequency in their groups. For example, the population of cuckoos cannot exceed a certain threshold in relation to the population of the altruistic birds which they can exploit. After all, as the population of cuckoos increases, the

population of the cooperative birds will decrease, and as the population of the altruistic birds decreases, the population of cuckoos will decrease as well because the cuckoos will have a decreasing chance to propagate their genes. Too many cuckoos would mean too many deaths of the altruistic birds, and the extinction of the cooperative birds would lead to the extinction of cuckoos. Analogously, the number of psychopaths should remain below a certain level in relation to non-psychopaths. As a matter of fact, "approximately 1% of the general population is thought to be highly psychopathic" (Glenn, Kurzban, and Raine, 2011: 374). Thus, psychopaths were selected in the past because they were rare in the general population. Frank (1987) and Mealey (1995) call this kind of selection "frequency-dependent selection." The idea is that some organisms are selected because they take up only a small proportion of the population of their group.

Evolutionary biology suggests that there can be an arms race between cheaters and non-cheaters. Once cheaters appear in a population, non-cheaters develop a method to detect and punish cheaters. Cheaters in turn enhance their ability to exploit non-cheaters without being detected:

> We can expect an arms-race as cheaters evolve to be even better at exploiting others and the others evolve to become better at detecting cheaters and avoiding them. (Murphy, 2006: 302)

As the race between cheaters and non-cheaters goes on, their physical and mental properties become more complex and sophisticated. Given that psychopaths are a kind of cheaters, there can be an arms race between psychopaths and non-psychopaths. Recall that psychopaths are good at disguising their brutality. In the future, non-psychopaths may acquire the ability to detect psychopaths by perceiving a slight deviation of psychopaths' behaviors from non-psychopaths' behaviors.

The cheater hypothesis sheds light on some interesting facts about psychopaths from an evolutionary point of view, and on how they could have evolved, viz., they are cheaters, they are rare in the general population, and there can be an arms race between psychopaths and non-psychopaths. But it provides an incomplete explanation of psychopaths in that it does not capture the salient characteristic that sets them apart from other cheaters, viz., they are merciless individuals who do not have the emphatic concern for others. The cheater hypothesis leaves it unexplained how such psychological and behavioral properties raised the fitness level of psychopaths. Thus, another hypothesis is called for to complement, but not to replace, the cheater hypothesis.

3.3. Brutality Hypothesis

Let me provide a story as to how brutality raised the probability that organisms and their groups would have prospered in certain circumstances in the distant past. In the distant past, our ancestors migrated from place to place in search of fruit, water, and other animals which they could hunt down. Imagine that there were three groups: Group 1, Group 2, and Group 3. They all migrated to a certain place and settled down temporarily close to each other. The environment they lived in was perfect for their survival. The climate was temperate. There were enough fruit, water, and other animals to sustain all the populations of the three groups. The ample natural resources obviated the need to fight against one another.

Group 1 consisted of two kinds of members. Some were brutal, and others were meek. In contrast, all the members of Group 2 and Group 3 were gentle. Unfortunately, a natural disaster, say a drought, occurred on Group 1's turf, and it deprived Group 1 of food and water. Group 1 knew that a drought did not strike Group 2's turf. Group 1 formed a sort of task force and conquered Group 2, using not such modern weapons as missiles and bombs but tooth and

claw, or at best such ancient weapons as sticks and stones. After wiping out Group 2, Group 1 moved to Group 2's turf and took their resources. With the trophies, Group 1 could survive the drought. The warriors in the task force were treated as heroes, being granted bountiful awards.

Recall that some members of Group 1 were brutal and others were soft. Naturally, the task force of Group 1 was also composed of merciless and merciful warriors. The ruthless warriors did not hesitate to slay the members of Group 2. The awards enabled them to attract females. They were good fathers to their family members, hiding their cruel identity. The humane warriors, in contrast, experienced empathetic pain when they slaughtered the members of Group 2. After the massacre, they suffered from guilt feelings and bad dreams, being unable to get the horrible memories off their minds. Some of them committed suicide, and others stayed alone refusing to meet other members of their own group. The psychological trauma was an obstacle for them to form families. To sum up, the brutal warriors were less humane but more professional than the meek warriors.

Recall that there also was Group 3 in a neighboring turf, and that the members of the group were all meek like those of Group 2. A drought also hit them. As a result, there were not enough food and water to support them. They heard that Group 1 invaded Group 2 and extorted resources from Group 2. They were not, however, willing to attack Group 1. They thought that it was barbarous and savage to kill other organisms of their own kind. They could not even imagine stealing resources from Group 1. Not surprisingly, they all died of famine. They were at a disadvantage in the bloody competition for survival and reproduction.

The foregoing story is intended not to be a truthful representation of what actually happened but to be a speculative narrative illustrating how brutal organisms prospered and propagated their genes successfully in the past. The gist of the story is that cruel individuals were more successful than mild individuals in the past in the desperate circumstances where there were not enough resources to sustain the entire population. Thus, brutality had an adaptive value in certain circumstances. And this trait has been transmitted from generation to generation down to the present day. Let me call this view on the origin of psychopaths the brutality hypothesis. It explains why there are psychopaths today, and it implies that the lack of resources was one of the environmental factors that contributed to the persistence of brutality in our gene pool over the course of our evolutionary history.

The brutality hypothesis receives support from the history of violence. Providing extensive data from archaeology, anthropology, and criminology, Pinker (2011) argues that homicides, war, torture, infanticide, child abuse, and gruesome punishments were pervasive and ordinary features of life before the emergence of agriculture, cities, and governments about five thousand years ago. All these forms of violence began to dwindle thanks to governments' efforts to coordinate the interests of competing individuals and to control the behavior of violent individuals. Before the emergence of state societies, the probability that one could die at the hand of another human being was 15% (Pinker, 2011: 48). With the advent of state societies, however, the rate of violent death has been declining significantly. Accordingly, violent deaths amount to "only 3 percent of the deaths in the 20th century" (Pinker, 2011: 50). Pinker's figures have an interesting implication in regard to the topic of psychopaths, viz., the past environment that our ancestors lived in was much bloodier than the present environment, and psychopaths had far more opportunities to outperform non-psychopaths in the past than in the present.

Pinker's study on the history of brutality and the role of government is congruent with Hobbes's account of the state of nature and the social contract. Hobbes speculated well before Pinker that if there were no government, there would be a war of all against all:

> Hereby it is manifest, that during the time men live without a common Power to keep them all in awe, they are in that condition which is called Warre; and such a warre, as is of every man, against every man. (Hobbes, 1651/1985: 185)

Human beings are selfish by nature, so they would do whatever they can to secure resources for their self-preservation, if there were no government to set up rules, enforce them, and punish those who violate them. For example, I may take your possessions, your wife, and even your body simply because they come in handy to preserve my life. For me, you have a worth only to the extent that you are a means for my desire-satisfaction. Thus, in the absence of government, our life would be "solitary, poore, nasty, brutish, and short" (Hobbes, 1651/1985: 186). The hypothetical situation depicted by Hobbes does not seem to be far removed from the real situation of the prehistoric era when 15% of human beings died at the hands of other human beings.

Two caveats are in order concerning the brutality hypothesis. Firstly, it does not claim that brutal individuals had a better chance to preserve themselves than meek individuals in general. As mentioned earlier, offenders may lose the chance to survive and reproduce if they are caught by others, and they can only be rare in the general population. Besides, many females prefer gentle males to heartless males because they are afraid that violence might be directed toward them and their children. Sexual selection is one of the important engines that drive evolution. Secondly, the brutality hypothesis does not assert that brutal individuals contributed more than mild individuals to the flourishing of humanity in general. After all, other things being equal, the size of the entire population in the world would have been greater without than with psychopaths. From an evolutionary point of view, a world free of psychopaths is preferable to a world having even one psychopath.

Will psychopaths persist as they did before? The brutality hypothesis predicts that they are likely to perish in the future. As Pinker observes, violence has been declining with the emergence of state societies about five thousand years ago. Thus, psychopaths have fewer opportunities to exercise their brutal traits than before. Moreover, child abuse was part of daily life during the violent prehistoric era, but these days it is widely condemned as being immoral and illegal. As noted earlier, a developmental explanation of psychopaths asserts that some potentially violent individuals become psychopaths due to the trauma they have experienced in childhood. If this developmental explanation is true, we have some reason to believe that there will be fewer psychopaths in the future.

The prediction about the prospect of psychopaths is strengthened by the consideration of how a war is conducted in the present time. A war breaks out today between rivaling nations over resources like food, water, and energy. An interesting fact about today's warfare is that it is carried out by means of modern weapons, such as missiles and bombs, not by means of tooth and claw or by means of ancient weapons, such as sticks and stones. A noteworthy difference between ancient and modern weapons is that less brutality is required in the use of the latter than in the use of the former. Our ancestors had to be merciless, when they killed their enemy with tooth and claw, or with sticks and stones. Chances are that they used their weapons repeatedly on the same individuals to inflict further injury on them until they died. Today, in contrast, a naval officer does not see his enemy's face when he presses a button to launch a Tomahawk missile from a nuclear submarine hundreds of kilometers away from his enemy. Therefore, present psychopaths have fewer opportunities than past psychopaths to be professional and useful in the workplaces.

4. Objection and Reply

One might object that if the brutality hypothesis is true, psychopaths today should kill only

people of other groups with a view to acquiring the resources needed for the continued existence of their own groups. The reality is, however, that they kill people without regard to which group their victims belong to. For example, Ted Bundy, a notorious serial killer in the US, killed Americans as opposed to non-Americans. Also, psychopaths sometimes kill people for emotional reasons as opposed to for economical reasons. Thus, they sometimes kill wrong people for wrong reasons. It is not clear how these features of psychopaths can be accommodated by the brutality hypothesis.

Regarding killing insiders, let me say that we must think about the difference between past societies and modern societies. Before the emergence of state societies, our ancestors traveled around in search of food in small groups, and a small group consisted of individuals related to each other by blood and by acquaintances. They knew each other well and interacted with one another in their daily activities, such as hunting, eating, and sleeping. In contrast, we now live in large-scale societies where individuals live by and large in anonymity. Your neighbors do not belong to your group, although they live physically close to you, because you do not interact with them in your daily activities. People you see on the street are outsiders because you do not have intimate social bonds with them. Therefore, as far as Ted Bundy was concerned, his victims were all outsiders.

Regarding killing people for emotional reasons, let me argue that brutality is on the same boat as other psychological features, such as the taste for sweet things, in that they all have both positive and negative aspects in terms of viability and fertility. Sweetness is beneficial to us. After all, we eat fruit largely because it tastes sweet, and fruit is good for our health. Without the taste, human beings would have gone extinct long time ago. But it is harmful to us too. After all, we eat white sugar because it tastes sweet, and it is bad for our health. The taste for sweet foods is an adaptation, not an accident, although it lowers our fitness level by disposing us to eat white sugar, because its benefit outweighs its cost. Similarly, psychopathy was an adaptation, although it had a negative impact on the perpetuation of an individual and a group to a certain extent, because its benefit outweighed its cost. It had a positive impact on the perpetuation of the individual and the group under the circumstances delineated above.

For now, our mind is coarse-grained with respect to fruit and white sugar, and with respect to killing for emotional reasons and killing for economic reasons. Given the right kind of heritable variation, it may become fine-grained in the future. A genetic mutation may occur that will enable us to differentiate between fruit and white sugar in terms of taste. Specifically, a pleasant gustatory sensation and an unpleasant gustatory sensation may arise in response to fruit and white sugar, respectively. Likewise, given the right kind of variation, a pleasant emotion may arise in psychopaths' minds in the future when they attempt to kill people outside of their groups with a view to acquiring resources, but an unpleasant emotion may arise otherwise. The unpleasant feeling would discourage them from killing others for the wrong reasons.

I am not contending that future psychopaths will definitely have or be likely to have the pleasant emotion and the unpleasant emotion. It is well-known that the theory of evolution is incapable of making specific predictions. We cannot predict exactly what variations will occur in the future, and which organisms will survive and reproduce, because we do not have the knowledge about the specific conditions of the future environment. The theory of evolution makes only a general prediction that only the fittest will tend to survive and reproduce. Thus, all we can say about the prospect of further variation among psychopaths is that psychopaths killing outsiders for resources will be fitter than psychopaths killing insiders for emotional gains, and hence that the former will probably outperform the latter in the struggle for existence.

5. Conclusion

Evolutionary theory can account for the existence of psychopaths, despite the initial appearance to the contrary. Brutal individuals and their groups were at an advantage in desperate circumstances where there was bloody competition for survival and reproduction. The brutality hypothesis receives support from Pinker's study on the history of brutality and from Hobbes's observation of human nature. Psychopaths are a legacy of the brutish evolutionary history that our ancestors went through. Their heyday, however, ended about five thousand years ago with the advent of governments which have been detecting, arresting, and punishing criminals. Moreover, less brutality is required to wage a war today. Therefore, they are likely to die out in the future.

How can we advance the day when there will be no psychopaths on the streets? This paper shows that psychopaths did not choose to become psychopathic. They are products of evolution, predisposed to be brutal, remorseless, and deceptive by genetic and neuropsychological properties. Thus, changing their violent behavioral patterns requires changing their genetic and neuropsychological properties. They cannot shake off their psychopathic traits simply by going through moral education. Moral education is ineffective in evoking empathy and remorse in their minds. For now, the best way to protect innocent people from psychopaths on the streets is that governments make more efforts to detect and arrest them.

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