

Is criminal behavior  
innate or shaped?



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The 'nature vs. nurture' debate is one of the oldest issues concerning psychologists and the extent to which both factors influence personality is an enigma that remains unresolved to this date. Many questions have been raised and one such question is: 'Is criminal behavior innate or is it shaped by the environment?' and this paper will attempt to throw some light on the topic.

Crime and violence have existed in society since the time of Abel and Cain and people have been intrigued as to what makes a person turn out to be a 'bad seed' and behave in violent ways and conduct unspeakable acts. Such people, previously known as 'psychopaths', do not feel normal emotions, willingly break rules, do not get socialized, and lack morality and a human connection. However, labeling such people as criminals creates the problem of stereotyping and might lead to misjudgment of the cause which can often be psychological. Psychopathy is now labeled as the 'Antisocial personality disorder' (APD) attributed to people who show 'a pervasive pattern of disregard for, and violation of, the rights of others'. Such people usually have a history of APD since childhood and are not shaped by environmental factors as they grow older.

A lot of family, twin and adoption studies have been conducted to find the basis for the nature vs. nurture debate in criminal behavior. To calculate the effect of genes or environment on antisocial behavior, a few family studies have been carried out. A Dutch family was found to have a mutation in the structure of the MAOa gene, which leads to low levels of 5-hydroxyindole-3-acetic acid (5-HIAA) in cerebrospinal fluid, leading to impulsive and aggressive behavior in the men of the family. This study showed the effect of

genes on criminal behavior, however, such studies lack a lot of credibility as it is not possible to isolate either genes or environment to study the impact on behavior and the results cannot be replicated.

Twin studies compare monozygotic (MZ) and dizygotic (DZ) twins and a genetic influence can be assumed if criminal behavior is more in accord in MZ twins than in DZ twins. A few studies have been conducted on MZ and DZ twins reared apart and some have shown the influence of heritability while others have negated it. Such studies, however, can lack validity and the ability to filter out genetic or environmental influence.

Adoption studies are of vital importance as nature and nurture influences have been separated as children are reared apart from their birth parents. Research showed that adopted children born to offenders showed greater antisocial and criminal tendencies. However, one research showed that children born to parents convicted of property crimes were more prone to be violent themselves than those of people convicted of violent crimes, an interesting result indeed. Similarities of the children with genetic parents are genetic influences while similarities with the adopted parents are environmental influences. However, adoption studies can be complicated by factors such as the difference in the socioeconomic status of the birth and adoptive parents.

Cadoret, Cain and Crowe conducted adoption studies in Iowa by choosing a variety of samples from different psychopathological disorders. The dependant variable was the number of adolescent antisocial behaviors used, the genetic variables were antisocial and alcoholic background as most

biological mothers had antisocial personalities and were convicted for some crime, and the environmental variables were the adverse adoptive-home conditions and the age at which the child was adopted. Sex factor was also taken into account. The results have been discussed in the conclusion.

Biologically, it has been found that neurochemicals, such as monoamine oxidase (MAO), epinephrine, norepinephrine, serotonin, and dopamine are responsible for antisocial behavior. Low levels of MAO are shown to be related to antisocial behavior, impulsivity and aggression and are also related to norepinephrine, epinephrine, and dopamine, which are all related to the personality factor of psychosis. Dopamine is linked to emotionally driven and predatory aggression and is involved with the Attention Deficit Hyperactivity Disorder (ADHD) which is linked with violent crimes according to one study. Another neurochemical, serotonin, has been found to play a vital role in depression, anxiety, bipolar disorder, conduct disorder (CD), impulsivity and aggression. Such results can be used to validate the claim that genes play a significant role in determining characteristics that can lead to antisocial behavior. However, it is argued by some that a well defined causation is not proved as it is not entirely certain if the low levels of such chemicals trigger a violent response or if violence leads to the low levels.

Disorders – such as ADHD, Oppositional Defiance Disorder (ODD) and CD – which can result in violent adult behavior, are usually found to exist since childhood. ADHD is hyperactivity and the inability to focus which leads to antisocial behavior as such children cannot reflect upon and learn from previous mistakes. Children with ODD are argumentative, irritable and noncompliant. They become worse over time, indulging in lying, cheating,

vandalism and aggressiveness. As ADHD or ODD worsen, they are often likely to be diagnosed with CD which is a violation of norms. All these disorders can result in the antisocial personality disorder (APD) as such children emerge into adulthood and acquire the personality traits of aggressiveness and impulsivity, two heritable traits that are associated with criminal behavior as they can predict antisocial behavior and delinquency.

Physiologically, there exists an abnormality in the central nervous system of such people which make them unable to feel emotional arousal – such as empathy, fear, guilty or anxiety – or react to the threat of punishment. This lack of physiological arousal is what differentiates a person with APD from others. In addition, people with APD also have lesser gray matter and an impaired frontal-lobe functioning, the area responsible for planning and impulse control, leading to impulsivity. Brain damage can also lead to the impairment of the frontal-lobes. It was also once believed that men with an extra Y chromosome were more prone to violent behavior but the argument was not proved.

Even though most of the above mentioned results show genetics to be a factor, it is important to examine the role of the environment, i. e. family and peers, in nurturing such behavior. Not all recent studies have supported the earlier findings of genetic influences. It is shown that families can influence the hyperactivity of kids with ADHD. Upbringing, communication, care, financial status, disciplinary techniques, family structure and bonds, education, etc are some of the factors that vary from family to family and can have a positive or a negative impact on the child. Moreover, abused or neglected children have a fifty percent greater risk of indulging in crime.

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Physically abused boys, who have a deficient gene too, have been proven to indulge in more violent crimes. Moreover, age also determines the impact of heritability or environment and kids are more likely to be influenced by their environment as they cannot choose their own surroundings and are more likely to be molded according to it. Adults, however, have a choice and their personality traits can only be positively or negatively reinforced by the surroundings they choose to reside in.

Social learning theory also indicates that children observe the behavior of those around them, such as parents and siblings and if they see aggressive behavior around them to be a norm, they will more likely act similarly, although this is in contrast to the genetic theory. Aggressive families usually lack in disciplinary techniques and monitoring which reinforces a child's behavior and is essential in leading to antisocial behavior.

Peer groups are also vital in producing antisocial behavior. When young children behave in an antisocial manner, they are more likely to be shunned by their peers which results in the further reinforcement of such behavior as these kids are then unable to develop peer relationships. They are also forced into the midst of other such antisocial children and are pushed towards crime as they get reinforcement from their group. This is also in accord to the belief that genes influence the type of interactions humans have.

Eysenck came up the PEN Model which is based on psychoticism, extraversion, and neuroticism. In his model, ' Psychoticism is associated with the traits of aggressive, impersonal, impulsive, cold, antisocial, and un-

empathetic. Extraversion is correlated with the traits of sociable, lively, active, sensation-seeking, carefree, dominant, and assertive. Finally, neuroticism is associated with anxious, depressed, low self-esteem, irrational, moody, emotional, and tense'. He believes psychoticism is the difference between criminals and non-criminals, extraversion is a better predictor for younger people and neuroticism for older. It has been shown that low arousal levels in the brain, such as lack of interest, sleepiness etc, are related to criminal behavior and extravert people hunt for more stimulation in high risk activities to increase their arousal. However, adding on to his model, the belief that there is an interaction between genes and the environment is supported by the general arousal theory of criminality which implies that there is interaction between the factors and also an interaction between the environment and genes to create such an individual.

Although research studies have generally lacked the ability to be able to isolate the effects of genes or environment on the shaping of a person's personality, both sides of the nature vs. nurture argument hold a lot of merit. There are people known as primary sociopaths who lack morals and the ability to feel responsible as a result of their genotype. Secondary sociopaths, however, are a consequence of the environment they are raised in and even though there is some degree of heritability, there is a greater environmental role. Coming to a conclusion, it is generally agreed upon that genes do in fact have a lot to do in influencing behavior, and factors in the environment account for what cannot be explained by the genes. As a result, personality is shaped by the interaction of both factors and it was found out that a certain combination of environmental factors with genetics essentially

plays a vital role. Inherited genes when combined with the right environmental conditions can result in a catastrophic birth of a criminal. According to Joseph Alper, however, research on these issues is too basic to be decisive and of much help in treating disorders. It is however, the role of the society, for its own good and out of moral obligation, to make sure children with such personality traits are treated and rehabilitated, rather than shunned out and stigmatized.