

In 1995, a man named Stephen Mobley appealed his death sentence to the Georgia courts by claiming that his genetics were partially culpable for his crime of murdering a 25-year-old Domino's manager. Environmental factors, as well as mental illness, have long been accepted as causation for criminal behavior, but genic factor alone was a new defense. The introduction of this idea raises quite a few questions. Does a criminal gene exist? Is it ethical to test for? What should this information be used for? Is a criminal gene defensible? The easiest answer is, it depends.

The quest for a gene-linked factor to criminal behavior has been undertaken by researchers for over 200 years. Some of the early ideas revolved around the speculation that an extra Y chromosome made a person more likely to have difficulty with impulse control, leading them to participate in criminal activities. This idea was rejected by the criminal justice system. At this time, research and dealings with psychological sciences were not as welcome or understood in the courtroom as they are today. However, this setback did not stop the search for a genetic link to crime, which has led to many new and extraordinary findings.

There are several genes that are being researched for their correlation and connection to criminal behavior. The commonality between them is that they affect the levels of Serotonin, Dopamine, or both inside of the human brain. Serotonin influences a person's mood whereas Dopamine is connected to a person's ability to experience pleasure. An augmented ability to produce these chemicals, or their receptors, can cause a plethora of personality changes. A person with imbalanced Serotonin or Dopamine levels may experience difficulty with self-control, mood swings, hyper-sexuality, depression, impulse control problems, the comprehension of action and consequence, and many other psychological impairments. These chemical levels in the body are very common to consider by psychologists when assessing a patient outside of the justice system. It is much easier to assist a person and look at their genetic and chemical makeup when they are walking into an office of their own accord. It is much more difficult to make these assessments when a person is currently in prison.

The most common genes examined in studies attempting to link genetic factors to criminal behavior are Low-Variant Monoamine Oxidase Acid A (MAOA-L) and Dopamine Transporter (DAT1) which is the 10 R allele. As described by Colin Gavaghan and Amir Bastani, MAOA-L encodes the MAOA enzyme, which then metabolizes some very important neurotransmitters. These neurotransmitters Dopamine and Serotonin play a vital role in the regulation of emotion, mood, motivation, reward, punishment, and fight or flight. Stephen J. Watts and Thomas L. McNulty say DAT1 affects the reuptake process, which means less Dopamine is available. This affects the pleasure center of the brain. Therefore, people with less available Dopamine seek out pleasures that raise their Dopamine levels, whether those pleasures be legal or not. These are referred to as impulses because the person often has no outside thought beyond satisfying this feeling of need for these sensations. While these factors can be shown to directly cause impulse control issues, they do not negate the concept of free will.

MAOA-L and DAT1 are X-linked genes. When looking at XX chromosome individuals, the second X chromosome tends to compensate for the altered genes. Therefore, studies and tests are only done on those who have both X and Y chromosomes. This leads to a smaller pool of testable subjects and the inability for those with XX chromosomes to attempt to use a criminal gene defense in court. Keep in mind, this does not mean that an XX chromosome individual cannot have these signs and problems, just that we do not have the ability to fully and properly test for it. These genetic factors will from here forward be referred to as the "criminal gene".

The study of, and search for, genes with a link to criminal behavior is happening worldwide. In order to test the hypothesis of a genetic link to criminal behavior, Sweden ran a study on twins with both X and Y chromosomes, as well as sibling pairs that are within two years of age; the documentation for which was comprised by Kenneth S. Kendler et al. This study ran over the course of 15 years and had 69,767 subject pairs. It was only looking at the crimes to which its participants were convicted, not upon all crimes committed, so therefore there is a margin of error on available information. They also accounted for the understanding that each time a person was convicted, that a time lapse then ensued before a secondary criminal action could occur. Environmental factors were also considered, being whether the subjects had the same environment or different environments. The conclusion of the study found that these genetic influences on behavior had the greatest effect prior to the age of 24. It was found that there are two main types of offenders, being those prone to do so exclusively in adolescence, and those prone to do so for life. Environmental factors were found to play a key role, in conjunction with genetic influences, on criminal behavior. Considerable similar studies were also conducted by many other countries, with similar results.

A genetic influence on criminal activity, independent of environment, was unable to be substantiated in studies. Therefore, examining the combination of genetic and environmental factors became the new source of focus in research. Yi-Fen Lu and Scott Menard dove head first into the analysis of these two factors combined. They determined that there is genetic influence on youth peer group selection. Psychologically speaking, birds of a feather do in fact flock together. Those youth who carry the criminal gene were more likely to select delinquent peer groups and to become participants in gangs. The presence of the criminal gene primarily seemed to have an effect if the subject experienced some form of environmental trigger. This was usually linked to childhood abuse, trauma, or neglect. Those who had the criminal gene, but did not experience an environmental trigger, did not appear to have a higher tendency toward delinquent behavior. The greater influence on criminal behavior was deemed to be environmental. However, the crime gene affected the individual's decisions on which environmental factors they elected to be around, such as peer group, which led to the inclination toward criminal behavior.

While there is a plethora of other studies that have been documented about the link between criminal behavior and the crime gene, the aforementioned two discuss most of the same findings that were concluded by the other studies. The consensus is that there is in fact a gene that can be linked to criminal behavior, but that it is not a direct link. The criminal gene requires a combination with environmental triggers to be influential on the

individual's propensity toward criminal behavior. The studies also make note that, even with genetic and environmental factors, there is still free will. This free will is one of the reasons why the court system is so hesitant in considering the crime gene as a defense.

Whenever genetic studies are pursued, the matter of ethics must be addressed. Is it ethical to test a person for a criminal gene? Who is it ethical to share this information with? What should the outcomes of these studies influence? The idea of ethics in this matter has not yet been decided. Therefore, we must look at what could be concerning. It would be of great concern to test infants for the crime gene in order to predict criminal behavior. This gene in no way guarantees a future of criminal behavior. We must also consider, if a person is tested for it, who should be allowed access to this information. It is a medical test, and therefore should be held to the same standards of dispersion as all medical information is. It should not be made public or disbursed to anyone without the direct consent of individual. Should testing for this require consent? In my opinion, absolutely. It would seem unjust and a violation of privacy if this was tested for without consent. Should the information obtained from this test be used for any reason beyond research and as a means of defense in court? Once again, I emphasize that a positive result from a criminal gene test is not predicative of behavior. Therefore, I believe that it would be ethical to use the test results in ways to help those who do have the gene. It should not be used in any way for condemnation or accusation.

It is important to note that the argument for the existence of a criminal gene in court is not currently, nor do I predict it will be in the future, used as defense to deny culpability for a crime. To deny culpability would be a defense similar to self-defense or insanity. The criminal gene defense is not claiming that they are no longer criminally responsible for their actions. Colin Gavaghan and Amir Bastani take a very in-depth look at the way that the criminal gene is meant to be used in court, as well as how it will not be used. Even though the use of the criminal gene was cast aside as un-verifiable in the past in the United States, other countries have found a use for it in the criminal justice system. The argument is that the genetic influence on behavior should be taken into consideration for reduced sentencing. This reduction may be the difference between the death sentence versus life in prison, the reduction from first degree murder to voluntary manslaughter, or other, more minor reductions. It is a way of saying that perhaps this person would not have acted with no regard to consequence, or so impulsively if they did not have this gene, so therefore they may not need the highest charge for the crime.

The defendant wants the court to see that a small part of their behavior may not have been by choice. Courts take into account a person's environmental history when considering sentencing. This is merely an additional factor for them to consider. There are quite a few things that the courts could consider given this information. Does a person who has a disposition towards self-control issues, a drive towards impulsive behavior that will result in Dopamine release, and a difficulty associating action and consequence, deserve the same sentence as a person who does not have these genetic factors? Making that decision could prove to be very difficult for some. Not everyone believes that genetic disposition can overshadow free will. Not everyone believes that impulses are so difficult to suppress.

Even if the courts do not end up fully accepting the usage of the criminal gene as a defense for criminal action, all of the research into this topic need not be discarded. The approach of using this information to create better, more individualized rehabilitation programs for criminal offenders has started to surface. Kevin M. Beaver, Dylan B. Jackson, and Dillon Flesher have done a tremendous amount of research and examination into this particular area. Considering they found that 80 percent of offenders reoffend, this could prove to become a breakthrough for the criminal justice system. That makes this important for not only the lives of these individuals, but also an important consideration for the economic cost of incarceration. This research team first makes a point of noting that many rehabilitation centers already exist, but that the methods used at these facilities are only working for some of the people who use the resources. They suggest that offenders should be evaluated in several different ways prior to the type of treatment program being assigned. First, they should be evaluated on a three-tier system to determine their at-risk level for reoffending. Next, they should be assessed for criminogenic needs, meaning influences that may be linked to their criminal behavior. An example would be alcoholism or drug use, and treatments for such things. The final assessment would be for responsivity, meaning what type of cognitive treatment would be best for each individual. They describe how the current system assumes that one type of treatment is appropriate for every person, neglecting the aforementioned differences that are suggested to be tested for.

Genetic composition, environmental influence, and mental illness/addiction are argued to be extremely important for an accurate assessment to assign the proper rehabilitation programs. The current programs neglect the idea that each human is different. They neglect to acknowledge the need for specified treatment. It is not surprising that the current system fails so often at preventing offenders from finding themselves behind bars again and again. Doctors test and check patients prior to prescribing pharmaceuticals, so why is this not being done in the criminal justice system? The obvious answer may appear to be cost, but would it really cost more to do these tests and more specialized treatment programs than to fund repeat offender incarceration? Hopefully we will be afforded the opportunity to find out.

The research has been done, and it is conclusive, there is a criminal gene. I think it needs a new name though. The criminal gene does not define a person as a criminal, and it does not work alone. It should be called the "at-risk gene". This genetic factor merely puts a person at risk, when combined with trauma, abuse and/or neglect, toward criminal tendency. Just the knowledge that it exists means that we have the chance to help those who have it. We as a society should strive to eliminate abuse, neglect, and many of the other environmental factors that lead to criminal behavior. This discovery should not be viewed as just another way to excuse or deflect criminal behavior. It is an opportunity to help those susceptible to a life of crime. It is an open door to create better rehabilitation facilities and make more personalized and effective treatment programs for offenders. The problem isn't the gene, it is the knowledge that it exists, and the possibilities available if we just take the time to use it. The real question is, what are we going to do about it?

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