

The Role of Genetics Factors in Human Happiness and Violence

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Abstract

Temperament/behavioral traits such as happiness and violence are mostly considered as acquired traits that are strongly influenced by environmental conditions. For example: modern theoretical foundations of happiness consider this concept as a variable state and state that people can be happier than they are and they can do this by improving their living conditions.

In the field of violence, we can also refer to the views of thinkers such as Bandura, Dillard, Miller, etc., who consider violence to be a phenomenon of social origin and believe that violence and aggression are acquired and controllable. In his perspective, under the title of social learning perspective, Bandura considers violence to be a learned thing that people learn through interacting in the social environment and observing other people.

Keywords: temperament/behavioral; happiness; violence; genetic factors; human personality.

Introduction

Other experts also propose the frustration-aggression hypothesis, which is one of the broadest views about aggression. According to this point of view, aggression is the result of a process where failure of a person to achieve goals is the main factor of aggression. In other words, failure occurs when the goal that a person is trying to achieve is opposed or prevented by environmental conditions. Therefore, according to some existing views, temperamental/behavioral characteristics, including happiness and aggressiveness, are acquired characteristics. But if happiness and violence are acquired and influenced by environmental conditions, why do they show high levels of similarity among families, tribes and nationalities¹?

In contrast to the viewpoints that consider temperamental/behavioral characteristics such as happiness and violence as acquired characteristics, there are viewpoints that present them as static and unchangeable characteristics. Based on such views, people are born with certain temperamental and behavioral characteristics. For example, happy or aggressive people are originally born with such a temperament. Therefore, they classify happiness and violence as hereditary characteristics that most likely have a neuropsychological structure and continue in different generations based on genetic mechanisms [1].

Proponents of this point of view have done various researches to confirm their theories. According to the existing researches, characteristics such as happiness and violence have genetic bases. The first efforts in the field of the role of heredity in happiness go back to the last decade of the 20th century. In 1989, a group of researchers investigated the role of genetics in happiness in an extensive study called the Minnesota Twin Family Study (USA) by comparing identical, non-identical twins and other family members. The results of these studies were published in an article in 1996, in which 50% of the happiness variance was attributed to heredity. After that, various researches were conducted which showed that in 80% of cases, identical twins are similar to each other in the characteristic of happiness, and only 20% of this characteristic is different in this group, which can be explained by the environment. Therefore, heredity is considered a stable component in the explanation of good life and happiness. It has also been determined that happiness is caused by a number of genes, such as: the serotonin transporter gene (SLC6A4, HTR1A), the DRD4 gene, the DRD2 gene, the MAO-A gene, the 5HTTLPR gene, the cannabinoid receptor gene (CNR1) and several genes. Other, it is affected [1].

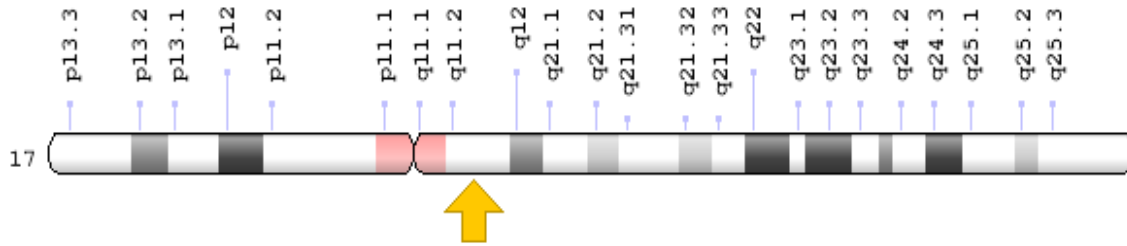


Figure 1: Schematic view of chromosome number 17, where the SLC6A4 gene is located in the long arm of this chromosome as 17q11.2 [1].

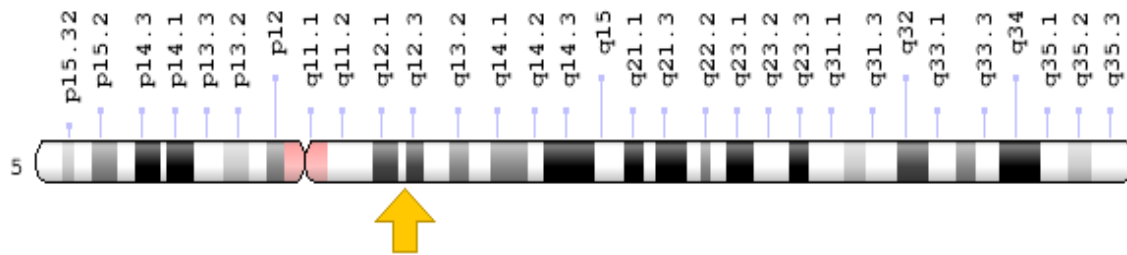


Figure 2: Schematic view of chromosome number 5, where the HTR1A gene is located in the long arm of this chromosome as 5q12.3 [1].

Also, in the field of violence, it should be said that many researches based on the study of twins, normal siblings and adopted children emphasize the heritability of violence. For example: by examining the available studies, it has been determined that the probability of violence and criminal behavior in monozygotic twins is higher than that of dizygotic twins and

normal siblings. Based on these researches, on average, monozygotic twins are about 51.5% and dizygotic twins are about 20.6% similar in the occurrence of violent and criminal behaviors, and this can be a strong proof of the heritability of violence. Therefore, it can be estimated that the contribution of genetic factors in the occurrence of violence and aggressive behavior is more than 50% [2].

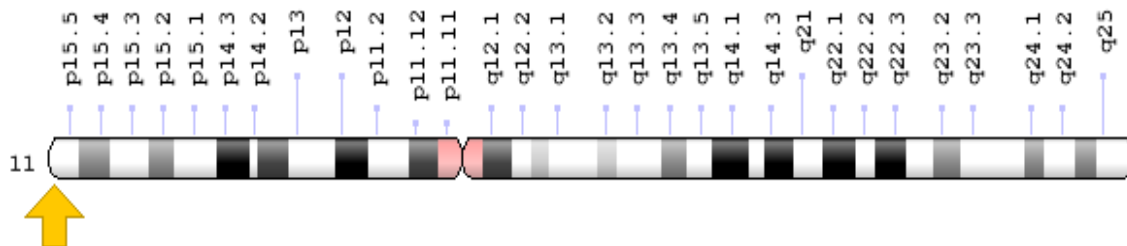


Figure 3: Schematic view of chromosome number 11, where the DRD4 gene is located in the short arm of this chromosome as 11p15.5.[2]

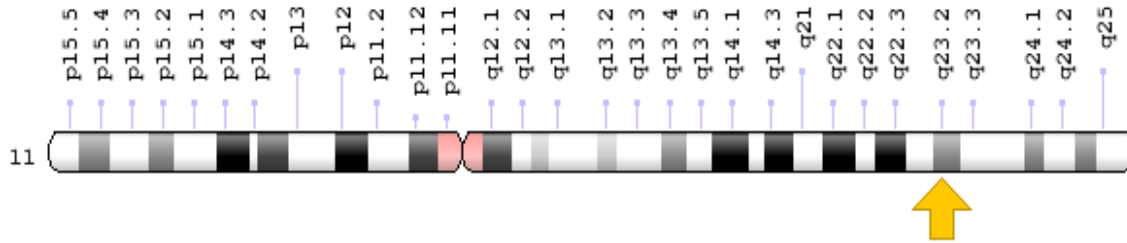


Figure 4: Schematic view of chromosome number 11, where the DRD2 gene is located in the long arm of this chromosome as 11q23.2 [2].

Various researches have been conducted in connection with the identification of genes and genetic polymorphism of aggressive and violent behaviors that can be considered in the etiology of violence. Among these genes, the genes located in the sex chromosome Y (men), the 5HTTLPR gene, the DAT1 gene, the DRD2 gene, the DRD4 gene, the COMT gene, the MAO-A gene, and... as effective genes. They have been identified in the occurrence of violent behaviors, some of them have a provocative role and others have a deterrent role in the occurrence of violent behaviors [3].

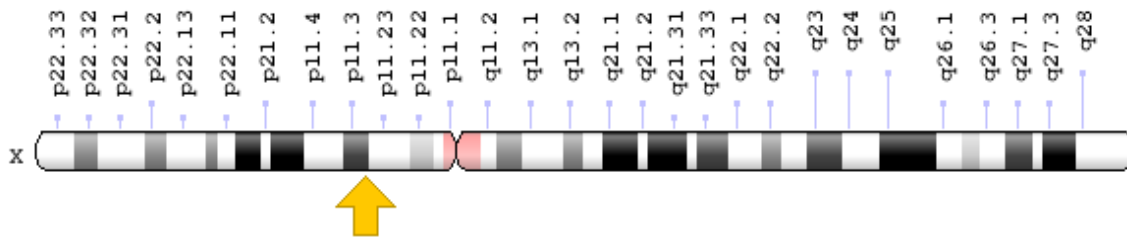


Figure 5: Schematic view of sex chromosome X, where the MAOA gene is located in the short arm of this chromosome as Xp11.3 [3].

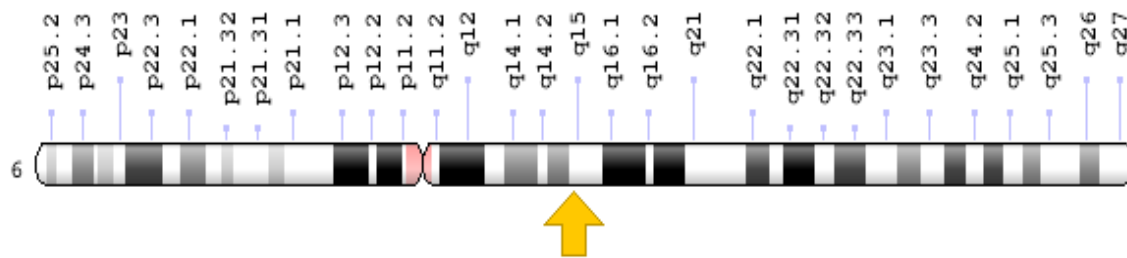


Figure 6: Schematic view of chromosome number 6, where the CNR1 gene is located in the long arm of this chromosome as 6q15 [3].

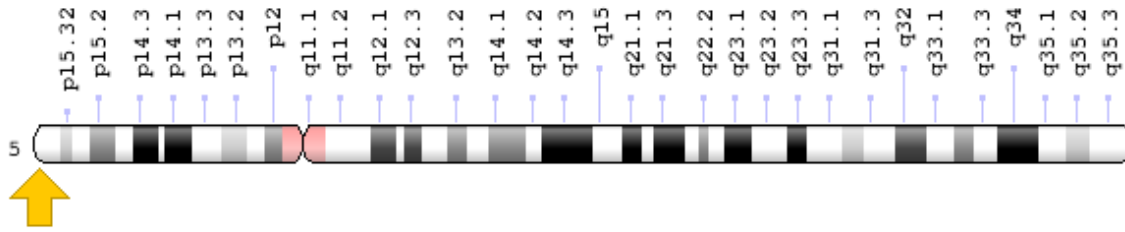


Figure 7: Schematic view of chromosome number 5, where the DAT1 gene is located in the short arm of this chromosome as 5p15.33 [3].

| Temperament characteristics | Function | Locus | Gene |
|--|--|-------------------|--------------|
| Behavioral disorders, aggression, Bruner syndrome | encoding the enzyme monoamine oxidase A | Xp11.3 | MAOA |
| Aggressive behaviors and depression | Effect on serotonin function | 17q11.2 | SLC64A |
| Aggression, antisocial behavior and schizophrenia | Effect on dopamine receptors | 11q23.2 | DRD2 |
| Antisocial personality and aggression | Effect on serotonin receptors | 6q14.1 | HTR1B |
| Panic disorder, aggression and violence | Breakdown of catecholamines | 22q11.21 | COMT |
| Hyperactivity, behavioral disorders and aggression | Effect on dopamine receptors | 11p15.5 | DRD4 |
| Drug and alcohol addiction, smoking addiction, bipolar disorder, aggression and violence | Stopping dopamine activity | 5p15.33 | SLC6A3 |
| Schizophrenia, violence and aggression, anorexia | Effect on serotonin function | 13q14.2 | HTR2A |
| Antisocial behaviors, depression, violence and suicide | Restriction in serotonin synthesis | 11p15.1 | TPH1 |
| Violent behavior | Protein coding | 16q23.3 | CDH13 |
| Schizophrenia, violence and aggression | Effect on serotonin function | 11q23.2 | HTR3A |
| Depression, abnormal sexual behavior and aggression | Effect on the catabolism of dopamine, serotonin and adrenaline | Xp11.3 | MAOB |
| Narcissistic personality disorder, antisocial personality, sadism | Protein coding | 1p13.1 | TTF2 |
| Antisocial personality | Protein coding | 20p12.2 | SNAP25 |
| Antisocial and aggressive | Effect on GABA receptor function | 5q34 | GABRB2 |
| Eating disorders, emotional disorders, long term depression, violence and aggression | Effects on the central nervous system | 11p14.1 | BDNF |
| Aggressive behaviors | Protein coding | 13q13.1 | RXFP2 |
| Bipolar disorder, depression and suicide | Effect on the function of cytokines | 6p21.33 | TNF α |
| Depression, bipolar disorder, aggression and drug addiction | Stop the activity of noradrenaline | 16q12.2 | SLC6A2 |
| Depression and suicide | Protein coding | 5q31.1 | DCANP1 |
| Eating disorders, obesity, suicide, aggression, smoking and cocaine addiction | Encoding serotonin receptors | 13q14.2 | 5-HT2A |
| Depression, bipolar disorder and suicide | Protein coding | 7q21.11 | PCLO |
| Childhood schizophrenia, bipolar disorder, crime | Effect on the function of diamino acid oxidase | 13q33.2; 13q34 | DAOA |
| Suicide and murder | Protein coding | 17q22 | SKA2 |

Table 1: Types of genes that prevent and accelerate violent behavior in humans.

The Role of Epigenetic Processes in Happiness and Violence:

According to what has been said, happiness and violence are acquired characteristics that have certain genetic foundations, and it can be said

that happiness and violence are inherited as acquired characteristics, and perhaps such a view can be justified through epigenetic processes [4].

The epigenetic perspective has provided a new understanding of the relationship between environment and genetics in temperamental/behavioral traits such as happiness and violence.

Researchers have shown that experiencing misbehavior in childhood and facing challenging events throughout life creates symptoms of happiness and depression in people who genetically have the short allele of the serotonin repressor gene (5-HTTLPR). In people who have this allele, a decrease in serotonin levels is observed, due to which, these people show higher levels of happiness. Also, the long allele of this gene itself has two versions: A and G, where only the A version is related to the increase in serotonin levels, and the G version has the same function as the short allele of the 5-HTTLPR gene. Therefore, the short allele acts as an inhibitor in happiness and as an accelerator in violence, and the long allele of the 5-HTTLPR gene acts as an inhibitor in violence and as an accelerator in happiness.⁴

In addition, COMT gene polymorphism is also relevant in the field of violent behavior. This gene is responsible for breaking down catecholamines such as dopamine, epinephrine and norepinephrine. Therefore, the COMT gene plays a central role in terminating the synaptic activity of these nerve messengers. This gene has two main genotypes: the allele that encodes the production of the amino acid methionine and the allele that encodes the production of the amino acid valine. Methionine allele is associated with lower levels of COMT gene activity compared to valine allele. Since the COMT gene is related to the breakdown of messengers that are involved in the occurrence of violent behavior, its low levels, which are caused by the activity of the methionine allele, increase the likelihood of aggressive and violent behavior. Therefore, the methionine allele can be considered a gene that accelerates violent behavior, while the valine allele does not have such a role [4].

There are various examples of these genetic polymorphisms associated with happiness and violence. These matters indicate changes in gene expression that can be explained by epigenetic mechanisms. Epigenetic mechanisms are related to a set of environmental factors that include various aspects of temperamental/behavioral characteristics and explain the tendency of certain temperamental characteristics such as happiness and violence [4].

In fact, environmental characteristics before birth can activate epigenetic mechanisms and cause genetic changes and make people happy or aggressive. Although epigenetic changes are not as stable as the genome, they still maintain genetic information and their activity reflects their relationship with the environment. In this regard, alcoholism and drug addiction can be mentioned as a form of self-directed violence that can be transmitted to the next generations by creating epigenetic changes and making the next generations susceptible to drug addiction and make

alcohol In this regard, some researchers have shown that alcoholism increases DNA methylation levels by 10%. Also, some studies show that the history of violence in the living environment leads to epigenetic changes such as: increased DNA methylation of endocrine regulating genes and increased methylation of serotonergic genes in future generations, and the possibility of self-directed violence and It increases the social in them. In this way, violence is inherited as an acquired trait through genes to future generations [4].

Discussion and Conclusion

In the field of happiness, research shows that: if our ancestors lived in rich and happy environments, then their happiness can become a genetic trait and be transmitted to generations by using epigenetic changes in genes. After that, transfer.

Therefore, according to the materials mentioned in the field of genetics of violence and happiness, it can be concluded that behavioral epigenetics is based on the belief that individual differences in temperament, personality, and behavior can be the result of acquired characteristics in genes. In fact, personality traits have a multi-gene nature, which means that several genes in the body, some of which are inhibitors and some of which are accelerators, play a role in the emergence of these human personality traits. On the other hand, outside the body, environmental conditions can play a role of inhibition or acceleration in this field. Based on the concepts raised in behavioral epigenetics, personality traits such as happiness and violence, which are considered acquired states, can appear in successive generations as a genetic trait due to the changes that the environment creates in the way of gene expression. Environmental conditions can activate epigenetic mechanisms including DNA methylation and histone modifications and lead to the inheritance of acquired personality traits such as happiness and violence during successive generations [1-4].

References

1. Asadi S, (2022) Human Genetic Memory Book, Amidi Publications, Iran.
2. Asadi S, (2020) Human Genetic Personality Book, University Press Publications Iran.
3. Asadi S, (2016) The God Gene of Adam & Eva Book, Scholars Press Publications, Germany.
4. Asadi S, (2017) The Love Gene Book, Lambert Academic Publications, Germany.



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