

An Endless Debate on Nature, Nurture, and Human Behavior

Dr. Jyoti Sharma, Prof. (Dr.) R.K. Jain, Dr. Vishvas Chand
Shobhit Institute of Engineering and Technology (Deemed to be University), Meerut
Email Id- Jyoti2@shobhituniversity.ac.in, Rakesh.jain@shobhituniversity.ac.in,
vishvas.chand@shobhituniversity.ac.in

ABSTRACT: *The goal of this paper is to settle the never-ending argument over whether such behavioral traits are a consequence of nature (i.e., genetic inheritance), diet (i.e., acquired learning), or a combination of both. Despite the philosophical conflict between nativists, who hold an outlandish innate position such as attributing everything to sustainably grown variables (nature), as well as preservationists, who believe that the way humans are raised absolutely administers the mental aspects of our youth's development through learning, it's indeed difficult to accept both of these extraordinary positions today. There are basically too many "realities" on both sides of the debate that clash with a "all or none" perspective. So, rather of determining whether the child's progress is due to nature or nurture, the question has been rephrased to "How much?" Which is more important, given how both genetics and environment influence who we become as individuals? This is the one-on-one question that has to be answered. In conclusion, but in no way, shape, or form least, determining the cause and effect is not a straightforward academic problem. If we really want to make a difference in people's lives, it's critical that we strike the nail on the head.*

KEY WORD: *Family adversities, Genes and environmental interaction, Nature, Nurture, Parental discord, Pediatric mental disorders.*

1. INTRODUCTION

Nature, in our perspective, is pre-wiring and is influenced by genetic heritage and other natural variables, while support is seen as the effect of external factors after origination, such as the consequence of openness, experience, or learning on a person. The proponents of nature are concerned about the general commitment that both have an effect on human behavior. Various aspects of brain study often use one approach over the other. Natural brain research, for example, emphasizes the importance of inherited traits and natural influences, while behaviorism focuses on the impact of the environment on behavior. The debate over nature vs. nurture is perhaps the most well-known in brain research. The focus of the debate is on the broad contributions of genetic heritage and environmental factors on human outcomes. Some philosophers, such as Plato and Descartes, suggested that some things are inherent, or that they occur naturally without regard for natural influences. Nativists believe that all or the overwhelming majority of our behaviors, as well as our characteristics, are the result of inheritance. People are just the byproduct of progress, according to proponents of this viewpoint. Hereditary characteristics passed down from parents have an effect on the distinctive differences that make each person unique[1].

Are naturalists also known as empiricists on the other end of the spectrum? Their basic premise is that, upon entering the world, the human mind is a blank slate (a blank record), which is gradually "filled" via participation and learning (for example, behaviorism). Watson, for example, believed that people might be prepared to accomplish and become anything, regardless of their genetic background. For example, when a baby forms a connection, it is reacting to the affection and attention it has received; language is learned by copying others' speech; and intellectual development is dependent on the level of incitement in the environment and, more broadly, on the development within which the child is raised. Bowlby's theory of

connection, which views the bond between a mother and her child as an inherent measure of endurance, is an example of an outlandish nature viewpoint in brain research. Furthermore, the suggested language is obtained via the use of a built-in language acquisition device. Another example of nature is Sigmund Freud's theory of enmity as a natural desire (called than Atos). Surprisingly, Bandura's social learning theory says that animosity is discovered via observation and imitation from the environment. This may be found in his famous Bobo doll test. Skinner also agreed that language is learned from others via behavior shaping techniques[2].

1.1. Interaction between nature and nurture:

It is well recognized that genetics and climate do not operate independently. Rather than defending exceptional nativist or naturalist viewpoints, most mental scientists are now interested in investigating the ways in which nature and sustainability interact. In psychopathology, this means that a psychological problem requires both a genetic proclivity and the right environmental triggers. Given recent advancements in inherited characteristics, this acknowledgement is very important. The Human Genome Project, for example, has sparked a lot of interest in tracing particular types of behavior to specific strands of DNA on specific chromosomes. If these advances are not to be mismanaged, a better understanding of how science interacts with both the social environment and the individual choices that people make about how they choose to spend their lives will be required. There is no perfect or simple way to unravel these remarkable and equal influences on human behavior[3].

An ideal pitch is the ability to recognize the pitch of a melodic tone without reference, which is an excellent example of nature and cooperation. Analysts found that this ability appears in typical conflict families and concluded that it may be linked to a single characteristic. In any event, they've discovered that just possessing the quality isn't enough to build up this capability. Overall, melodic preparation throughout adolescence is critical to allowing this learned ability to manifest.

1.2. Mental problems in children and the impact of genes (nature):

Heritability refers to the degree of the fluctuation explained by hereditary components, whereas change refers to how much a characteristic change across individuals in the population being studied. The heritability of most mental characteristics has been shown to be approximately 50%. This means that genetic differences between individuals account for about half of the observed differences in a population. Conduct geneticists have been making the spectacular argument for years that a shared family environment has almost little, if any, effect on general mental characteristics; family likenesses are almost entirely inferable from shared qualities rather than shared climate. Direct problems are a probable exception to this rule, with most studies showing that there is minimal genetic commitment to such behavior and that shared environment is the primary reason for these difficulties running in families. On the contrary, responsibility for mental illness may have a heredity of more than 90%. It is important to mention that juvenile mental disorders are often observed in conjunction with other anomalies and as a component of certain genetic diseases. For example, raised paces of modesty, disinhibition, chemical imbalance range issues, psychosis, serious attentional challenges, leader brokenness, and social aggregate inconsistency are all reported neuropsychiatric as well as social problems associated with miniature cancellation condition [DiGeorge disorder (DS), velocardiofacial condition (VCFS), as well as construal inconsistency face syndrome]. A set of approximately 3 million DNA building blocks (base sets) on one copy of chromosome in each cell is absent in people with tiny cancellation. Experts have confirmed that the loss of a

particular characteristic on chromosome TBX1 is most likely to blame for a significant number of the disease's symptoms (for example, heart deserts, a congenital fissure, unmistakable facial highlights, hearing misfortune, or low calcium levels). According to certain studies, a cancellation of this characteristic may also contribute to conduct problems. A lack of another quality, COMT, in a comparable region of chromosome may also help to explain the increased risk of social problems and psychiatric instability. The absence of other characteristics in the erased district most likely contributes to the erratic highlights of erasure disorder. There are 30 to 40 characteristics in this region. a revealed micro deletion in two out of 16 FISH inspected cases with neurodevelopmental messes (12.5 percent); one was analyzed at 11 years old years and the other at 9 years old years, with accompanying inherent coronary illness and hypocalcemia in both cases, mellow intelligent inability in one of them, and explicit learning jumble in the other[4].

1.3.Mental illnesses in children and the environment:

1.3.1. Adversity in the family

A rise in the incidence of one or more pediatric mental illnesses is linked to a number of well-known familial variables. As a result, it's all too easy to fall into the trap of thinking that a correlation equals causation. On the other hand, many juvenile mental illnesses are linked to well-documented familial adversity, but no one can say for sure if this implies reverse causation. Nonetheless, we can be certain that when both coexist, things might go any way, or there could be a third cause (confounder) at work behind both juvenile mental illnesses and familial adversity. Children and adolescents from impoverished and/or discordant homes are more likely to attend bad schools, play with disruptive friends, and be open truants, as is widely documented. Why is this? Is this because a poor home environment actually encourages truancy, or is the family disadvantage merely a marker for truancy-inducing local schools? Regrettably, negative influences tend to concentrate inside each child's social environment. Overcrowding at home, for example, has been related to unemployment, poverty, parental mental illness, and a variety of other risk factors[5]. This implies that determining whether or not a relationship is causal is very difficult. A kid with unmanaged Attention Deficit Hyperactivity Disorder (ADHD) on the other hand, may result in frequent parental criticism, coldness, wrath, punitiveness, and detachment. As a result, a child's hyperactivity may elicit considerable parental hostility, resulting in further harm to the child's development. Stimulant medicines, on the other hand, that decrease a kid's hyperactivity ultimately enhance parental warmth and the amount of quality time the youngster and his family may spend together. Adversities in the family may be shared or not. Nonshared or unique surroundings refers to the environmental impacts that are not shared by relatives living together, such as being hit by a bus or having a best friend who is a drug addict. Shared or common environment refers to environmental factors that affect the entire family, such as poverty, damp housing, or air pollution, whereas nonshared or unique surroundings refers to external cues that are not got to share by relatives living together, such as being hit by a bus or having a best friend who is a drug addict. A severely under-stimulating or negligent home setting may be uncommon in general, yet it may have a significant effect on all or most of the children in the household. Children are more affected by experiences they do not share with their siblings; when parents give more attention to one sibling than the other, it is more hurtful than when both siblings get less parental care than the "average kid."

Conduct disorder in boys and emotional problems in both sexes are linked to parental conflict, furious fights, antagonism, and criticism. Discord may be a risk factor in and of itself, or it may be a sign of the existence of additional risk factors such as poverty, a lack of regulations, or

inadequate supervision. Because family conflict is so openly linked with bad discipline, the lack of warmth in family connections is not as important as the existence of discord as a predictor of poor result. Children may learn that engaging in unpleasant activities is a particularly unappealing method to gain parental attention. Children seem to have absorbed their parents' interaction style through time, "repeating the same pattern in subsequent interactions." During the first year after divorce, parents often feel worried, sad, angry, rejected, and inept, with these feelings decreasing in the second year. Inconsistent parenting of children, particularly of boys, is common[6].

Environmental variables that are not related to the family Despite the fact that autism has a heritability of over 90% , all experts believe that it is one of the most perplexing illnesses with a complicated etiology. It is widely known that both environmental and genetic variables play a role in the genesis of autism. assessed the hair levels of mercury, lead, and aluminum and explored their potential environmental exposure sources in a group of autistic children compared to their matched controls as an example of studies that investigated environmental risk factors for the development of autism. Autistic children in Heir's study had substantially higher levels of the evaluated toxic heavy metals than controls, indicating that environmental exposure to these toxic heavy metals at critical developmental stages may have a causative role in autism. On the other hand, simple Gaussian distributions of the enzyme that triggers brain calcitriol, in combination with widespread prenatal and/or early childhood vitamin D insufficiency, may explain both the genetics and epidemiology of autism. If that's the case, he claims that most of the illness is iatrogenic, caused by medical advice to stay out of the sun. An Egyptian study compared the pervasiveness of Autism Spectrum Disorders in vitamin D deficient/insouciant rachitic infants and children to age and sex matched healthy controls as well as found mild to moderate autism in 25.71 percent of vitamin D deficient/insouciant rachitic comparison to none of the controls. Moreover, 25 (OH) vitamin D has been shown to be inversely associated with overall Childhood Autism Rating Scale (CARS) scores, indicating that the lower the 25 (OH) vitamin D, the higher the entire CARS scores, and the more severe the autistic symptoms[7].

2. LITERATURE REVIEW

Mysterud et al. studied about Matt Ridley's Nature through Nurture: Genes, Experience, and What Makes Us Human received a positive review (see record 2003-88284-000). The nature-nurture argument is one of the most contentious and fascinating topics in academic discussion. Matt Ridley has presented Nature via Nurture: Genes, Experience, and What Makes Us Human, in the tradition of wanting to contribute consilient or vertically/conceptually integrated approaches to link scientific results from different fields. After presenting three renowned and outstanding works on evolutionary approaches to animal and human behavior and genetics in the past decade, he is a great writer who is well-prepared for the job. Nature vs. Nurture is a false dichotomy, according to the primary premise of Nature through Nurture. Ridley's excellent synthesis and presentation taught me a lot. People like Ridley, who use a great pen and a clear intellect to make sense of scientific contributions in a variety of areas, are urgently needed in our society. I think we can all agree on his conclusion (the final two lines of the book): "Nature vs. nurture is no longer a debate. Nature will survive on thanks to nurturing." However, you must study Nature through Nurture yourself to properly comprehend the ramifications of these assertions[8].

Hernandez et al. investigated the Over the last century, we've made significant progress in lowering illness rates and improving people's overall health. Sanitation, better cleanliness, and

vaccinations, as well as decreased occupational dangers, novel medicines and clinical procedures, and, more recently, a greater knowledge of the human genome, have all contributed to increasing the length and quality of human life. However, research over the last several decades indicates that this development, which was mostly focused on examining one causal component at a time—often via a single field or by a small group of practitioners—can only go so far. *Genes, Behavior, and the Social Environment* looks at a variety of well-known gene-environment interactions, evaluates the status of the science in studying them, and makes recommendations for research priorities as well as workforce, resource, and infrastructure requirements[9].

Genomic interactions are of importance not just for the study of human behavior, but have become a subject of research on other species, according to Fuller et al. In Pigliucci's latest book, he analyzes recent advances in the area of plasticity studies, which examines such interactions. *Phenotypic Plasticity* is the first in a series of monographs on integrative biology published by Samuel Scheiner. It presents the findings of research in a variety of fields, devoting equal attention to plants and animals. Recent discussions concerning the effects of nature and nurture on human behavior have sparked interest in this subject. Jensen and other genetic determinists believe that human intellect is determined by genetics, while Gould, Lewontin, and others have highlighted the significance of environmental variables. Because phenotypic plasticity often arises from non-additive interaction between genotype and environment, Pigliucci proposes it as a means of going beyond the gene-environment dichotomy[10].

Palumbo and colleagues looked at The study of the interaction of nature and nurture in creating human behavior has regained popularity in the past two decades. Individual weakness to aversive experiences, including such stressful or traumatic life events, is associated with distinct polymorphisms of genes that code for polypeptides that control neurotransmitter metabolic and synaptic function, according to behavioral genetics, and may result in an increased risk of developing psychopathologies associated with violence. Recent research, on the other hand, suggests that unpleasant experiences regulate gene expression through imparting persistent modifications to DNA without changing its sequence, a process known as "epigenetics." For example, adversities experienced during periods of maximum sensitivity to the environment, such as prenatal life, infancy, as well as adolescent years, may leave lasting methylation patterns in genes that affect brain maturational processes, favoring the emergence of dysfunctional behaviors in adulthood, such as exaggerated aggression. Behavioral genetics and epigenetics are offering a new tool to study the molecular processes that underpin aggressiveness, revealing fresh insight on the delicate interplay between genes and environment. The results of these research have significant consequences not just for neuroscience, as well as for social sciences such as ethics, philosophy, or law[11].

3. DISCUSSION

To recapitulate, the argument over whether some elements of behavior are a result of nature (inherited i.e. genetic), nurture (acquired i.e. taught), or their interplay is never-ending. Despite the philosophical conflict between nativists who take an extreme hereditary position, blaming everything on genetic differences (nature), as well as environmentalists who believe that how we are raised (nurture) completely controls the psychosocial factors of our early childhood through learning, neither extreme position is widely accepted today. There are just too many "facts" on both sides of the debate that contradict a "all or none" viewpoint. Instead of asking if a child's development is influenced by nature or nurture, the issue has been rephrased as

"How much?" that is, given that both genetics and environment have an impact on who we become, which is the more important? personalized question that has to be addressed. Finally, but certainly not least, determining what is the source and what is the effect is no simple intellectual exercise. It is critical to do it right if we are really aiming to improve people's lives.

4. CONCLUSION

To summarize, the issue is how fundamental elements of behavior are influenced by the product of either nature (inferred). Genetics, for example), nutrition, or interaction with them (i.e., learning). Despite the philosophical conflict between nativists who embrace an exceptional innate position such as crediting it all to organic elements (nature) and tree huggers who accept that now the way we are raised (sustain) absolutely administrates the mental parts of our youth development through learning, it is difficult to admit both of these exceptional positions today. There are just as many "realities" on both sides of the debate that clash with a "all or none" perspective. So, rather than determining whether the child's progress is due to nature or nurture, the question has been rephrased to "How much?" For example, if both genetics and climate have an effect on the person we become, which is more important? This is the one-on-one question that has to be answered. Finally, but in no way, shape, or form least, determining the cause and effect is not a simple scholastic problem. If we really want to make a difference in people's lives, it is critical that we strike the nail on the head. On both sides of the argument, there are just too many "facts" that contradict a "all or none" perspective. Instead of asking whether nature or nurture influences a child's development, the topic has been reframed as "How much?" that is, given that both heredity and environment affect who we become, which is the more important? customized question that has to be answered. Last but not least, figuring out what is the source and what is the impact is not an easy mental exercise. If we really want to enhance people's lives, we must do things correctly.

REFERENCES

- [1] C. Fine, J. Dupré, and D. Joel, "Sex-Linked Behavior: Evolution, Stability, and Variability," *Trends in Cognitive Sciences*. 2017, doi: 10.1016/j.tics.2017.06.012.
- [2] B. Fox, "It's nature and nurture: Integrating biology and genetics into the social learning theory of criminal behavior," *J. Crim. Justice*, 2017, doi: 10.1016/j.jcrimjus.2017.01.003.
- [3] C. G. Coll, E. L. Bearer, and R. M. Lerner, "Introduction: Nature and nurture in human behavior and development: A view of the issues," *Nature and Nurture: The Complex Interplay of Genetic and Environmental Influences on Human Behavior and Development*. 2014, doi: 10.4324/9781410609830.
- [4] K. Davids and J. Baker, "Genes, environment and sport performance: Why the nature-nurture dualism is no longer relevant," *Sports Medicine*. 2007, doi: 10.2165/00007256-200737110-00004.
- [5] S. W. G. Derbyshire, "DNA and Destiny: Nature and Nurture in Human Behavior," *BMJ*, 1997, doi: 10.1136/bmj.314.7087.1137.
- [6] F. C. Da Silva Porto, P. C. Paiva, R. F. Waizbort, and M. R. M. P. Da Luz, "Brazilian Undergraduate Students' Conceptions on the Origins of Human Social Behavior: Implications for Teaching Evolution," *Evol. Educ. Outreach*, 2015, doi: 10.1186/s12052-015-0044-5.
- [7] E. Ahmed Zaky, "Nature, Nurture, and Human Behavior; an Endless Debate," *J. Child Adolesc. Behav.*, 2015, doi: 10.4172/2375-4494.1000e107.
- [8] I. Myserud, "Long live nature via nurture!," *Evol. Psychol.*, 2003.
- [9] L. M. Hernandez and D. G. Blazer, *Genes, behavior, and the social environment: Moving beyond the nature/nurture debate*. 2006.

-
- [10] T. Fuller, "The Integrative Biology of Phenotypic Plasticity," *Biol. Philos.*, 2003, doi: 10.1023/a:1023948505327.
- [11] S. Palumbo, V. Mariotti, C. Iofrida, and S. Pellegrini, "Genes and aggressive behavior: Epigenetic mechanisms underlying individual susceptibility to aversive environments," *Frontiers in Behavioral Neuroscience*. 2018, doi: 10.3389/fnbeh.2018.00117.