

Is the Nature/Nurture Debate Resolved?

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Word count: 1556

### Is the Nature/Nurture Debate Resolved?

The essence of a human has been one of the most debatable issues throughout the centuries (Sherry, 2009). Artists, philosophers, theologians drew up different conclusions claiming that a human as a being is endowed either by God and God's will, a culture and upbringing, or instinctual survival drives. As the existence of God is beyond the epistemological parameters of science, social scientists have debated the primacy of social (nurture) or hereditary (nature) influence (Sherry, 2009). The consideration of the dichotomy of nature and nurture, from the belief in the ability of the nurture to 'fix' any behavioral disorders to the wish to develop gene therapy to 'fix' the code, has an important implication for treating and teaching practices, as well as the general social context (Garcia Coll, Bearer, & Lerner, 2014). The data, collected in the excessive twin and adoption studies, has demonstrated that both heredity and environment affect the human traits (Polderman et al., 2015) and has made scientists suggest that the nature/nurture debate is resolved. However, though the studies have largely informed and transformed the debate, they have not resolved it.

To understand the change produced by the twin adoption studies, it is important to briefly review the history of the nature/nurture debate. Though the debate is believed to have been already old "when Ancient Greeks conceptualized it as conflict between *phusis* (nature) and *nomos* (law, custom, or convention" (Gander, 2004, p. 2), the modern understanding of the debate relates it mainly to the theories and schools of thought of the 19<sup>th</sup> and 20<sup>th</sup> centuries. The proponents of the preeminence of the biological explanation of human behavior relied on the theory of Charles Darwin, who largely influenced the 19<sup>th</sup> century science by suggesting that both the physiology and the psychology of a human are due to the processes of adaptation and natural selection. William James, a strong adherent to Darwin, further developed his theory of instincts as forces promoting and guiding human behavior. The most dangerous social expression of biological determinism took place in 1988, when Sir Francis Galton claimed that

nature is five times more influential than nurture and introduced a legislature known as eugenic laws aimed at biological selection (Sherry, 2009). The opposing position was based on the empiricism of Lock who believed that human beings are born as 'blank slates', on which the environment writes its information. Such environmental determinism was postulated by behaviorism and social learning theory scientists. They negated any inborn characteristic such as talent, capacity, temperament, etc. and suggested that any human behavior is due to sequenced social learning. Relying on the stimulus-response learning, behaviorist Watson prominently claimed he is possible to make any child grow up any person the researcher wishes regardless of his talents or ancestors (Sherry, 2009).

Eric Gender (2004) points out that though both sides of the nature/nurture debate had prominent proponents, after the Nazi war crimes and the political orientation towards equality, human *nature* endured a century-long period of exile. Therefore, the twin and adoption studies actually meant "the return of nature", which came to be appreciated along with the cultural influence (Gender, 2004, p.3). The 2015 study summarizing the fifty years of twin studies across 39 different countries clearly states there exists a compelling evidence that all human traits are heritable, that is there is no trait which heritability estimates to zero (Polderman et al., 2015). According to the study, the reported heritability across all traits is 49% (69% if the additive genetic variation is considered) (Polderman et al., 2015).

Though the findings of the studies clearly demonstrated that both nature and nurture account for the human behavior and traits, they have not resolved the debate. As it can be seen from some studies, appreciating the presence of two forces, the researchers still study and debate their greater or lesser role in the human essence. For example, Erik Plug and Wim Vijverberg (2003) use the adoption study to assess how much of the students' abilities are due to heredity or due to the superior schooling environments provided for them. Having concluded that 50-60% (about 70-75% considering alternative calculation) of the ability relevant for

school achievement is inherited, the researchers suggest that the policies aimed at improvement of schooling environment have little effect and should be revised (Plug & Vijverberg, 2003). The distinction between the nature and nurture and the comparison of their relevance is also present in the study of Boomsma, Busjahn and Peltonen (2002). The researchers conclude that genetics contributes significantly to the complex diseases and point out that the lifestyle risk factors, which are considered 'environmental', "might themselves be influenced by genes" (Boomsma, Busjahn & Peltonen, 2002). Another study, conducted by Burt has also revealed the supremacy of the natural contribution to the internalizing and externalizing disorders, with shared environment influences accounting to only 10%-19% (Burt, 2009).

The obvious turn to the *nature* has made many researchers 'stand for' the *nurture* now studying and pointing out the complex interplay of the two concepts. For example, Garcia Coll, Bearer, & Lerner (2014) specifically stress that the studies have proved that the genes play an important role, but they are not deterministic, "Quantitative genetic studies of behavior have not established genetic determinism, but rather have shown that both genetic and non-genetic factors contribute significantly to essentially all common phenotypes – illness phenotypes and normal variants phenotypes alike" (p.17). They suggest that there is a complex, not additive, interaction between the genes and the non-genetic factors (Garcia Coll, Bearer, & Lerner, 2014). Therefore, the researchers state the application of the dichotomy and asking the questions like "How much does "genes versus environment" explain individual differences in a particular trait or developmental process?" and "Is this particular behavioral trait not amendable to environmental interventions?" is initially wrong and unproductive. Garcia Coll, Bearer, & Lerner (2014) suggest that it is dynamic interactive operation of genetic and environmental domain that should be studied. Otherwise, the researchers simply go on the nature/nurture debate, singling the two notions out as if they can be separated during the genesis of behavior (Garcia Coll, Bearer, & Lerner, 2014). The authors of the research on parenting,

reach the results that prove that the interplay of genetics and environment in parenting is complex and unpredictable, as parenting, providing the environment for the children, is in its turn influenced by genetics (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). In the same time, the researchers position these results as a third way contradicting the suggestions of earlier researchers as well as of current critics, such as Harris and Rowe who see parental influences as insubstantial (Collins et al., 2000).

Plomin and Asbury (2005), too, suggest that the appropriate conjunction between *nature* and *nurture* is *and*, and not *versus*. The researchers point out that there is no environmental determinism and the environment works very differently from what it has been supposed previously. Still, the society should not overestimate environment rejecting genetic influence due to “a general sense of unease”, as the equality of abilities and the legal equality should not be mixed (Plomin & Asbury, 2005, p. 96). The researchers also point to the threat coming from the simplification and separation of the concepts combined with the advancements in science and development of gene therapy, which calls for careful legal, ethical, and policy considerations (Plomin & Asbury, 2005). Johnson, Turkheimer, Gottesman, & Bouchart (2009) who also appreciate the complex interplay of nature and nurture state that the twin studies should move beyond “specific estimates of heritability”, which are not very important, to the study of the causal effects of environmental circumstances.

It should also be noted that while the scientific debate over nature/nurture has changed dramatically, the general public discussion does not really reflect this change. For example, Garcia Coll, Bearer, and Lerner (2014) point out that though the interrelation of heredity and environmental factors are commonly appreciated in the scientific circles, this idea has not penetrated general thought and continues to exert its influence. Garder (2004) stipulates that the 20th century rejection of nature in favor of nurture still embraces many intellectuals, the contemporary philosopher and social critic Richard Rorty in particular. Sherry (2009) directly

addresses fellow communication researches asking them not to “remain enamored of an early 20th-century ontology and ignore the building evidence of biological influence on behavior” ( p.102).

To conclude, twin and adoption studies have dramatically transformed the 19<sup>th</sup> and 20<sup>th</sup> century nature/nurture debate, but have not resolved the nature/nurture debate as such. The debate has transformed in a number of ways. First, for some researchers, the debate is not resolved at all: instead of arguing the deterministic value of one of the concepts in general, they study and presuppose the deterministic value of one of the concepts in some particular trait. Second, there exists a group of researchers who oppose to the very dichotomy of nature and nurture and debate the validity and implications of the researches concerned with the relevancy of heretical and environmental influences. Third, the advances in science and possible advances in gene therapy have also informed the discussion making it call for legal and ethical rather than simply biological considerations, as they presuppose the absolutely new level of implications. What is more, it should be noted that though the scientific opinion concerning the nature/nurture opposition has changed dramatically in comparison to the previous century, the public and even intellectual discourse was not largely affected.

## References

- Boomsma, D., Busjahn, A., & Peltonen, L. (2002). Classical twin studies and beyond. *Nature Reviews: Genetics*, 3, 872-882.
- Burt, S.A. (2009). Rethinking environmental contribution to child and adolescent psychopathology: A meta-analysis of shared environmental influences. *Psychological Bulletin*, 135(4), 608-637.
- Collins, W.A., Maccoby, E.E., Steinberg, L., Hetherington, E. M., & Bornstein, M. (2000). Contemporary research on parenting: The case for nature and nurture. *American Psychologist*, 55(2), 218-232.
- Garcia Coll, C., Bearer, E.L., Lerner, R.M. (2014) *Nature and nurture: The complex interplay of genetic and environmental influences on human behavior and development*. Taylor and Francis.
- Garder, E.M. (2004). *On our minds: How evolutionary psychology is reshaping nature-versus-nurture debate*. London: The Johns Hopkins University Press.
- Johnson, W., Turkheimer, E., Gottesman, I.I. & Bouchard, T.J. (2009). Beyond heritability: Twin studies in behavioral research. *Current Directions in the Psychological Science*, 18(4), 217-220.
- Plomin, R., & Asbury, K. (2005). Nature and nurture: Genetic and environmental influences on behavior. *The Annals of the American Academy of Political and Social Science*, 600 (1), 86-98.
- Plug, E. & Vijverberg, W. (2003) Schooling, family background, and adoption: Is it nature or is it nurture? *Journal of Political Economy*, 111 (3), 611-641.
- Polderman, T.J., et al. (2015). Meta-analysis of heritability of human traits based on fifty years of twin studies. *Nature Genetics*, 47 (7), 702-709.
- Sherry, J.L. (2004) Media effects theory and the nature/nurture debate:

A historical overview and directions for future research. *Media Psychology*, 6(1), 83-109.