

Study of genetics and developmental psychology



**ASSIGN
BUSTER**

To explain human behaviour as being part genetic and part developmental has been a controversial subject for many years for theorists exploring the concept of Nature versus Nurture. To understand genetics and developmental psychology is to understand what we inherit and how environmental input affects us. Genetics and developmental psychology in which Plomin accepts the important role of Nature and Nurture is the subject I will be presenting I will discuss past, present and future factors that emphasize that both nature and nurture are relevant and conclude that nature and nurture are complementary and work together, showing that both heredity and environment plus their affects on determining one's development and behaviour is of utmost importance.

“ By nature we mean inborn biological givens – the hereditary information we receive from our parents at the moment of conception. By nurture we mean the complex forces of the physical and social world that influence our biological makeup and psychological experiences before and after birth.”

(Berk 2010, p. 7).

Past

Over a century ago Sir Francis Galton started studying genes and theorized that parents passed on such traits as intelligence and personality. “

Character, including the aptitude for work is heritable like any other faculty

(Galton 1908, p. 291). In contrast John B Watson believed that much

behaviour was introduced to humans by the environment. “ Behaviourism is the scientific study of human behaviour. It is simply the study of what people do.” (Watson 1928).

Studying how environment and genes interact, have been a constant experiment to find the truth. Ongoing study of twins and adoption has shown that personality and cognitive abilities as well as mental disorders such as schizophrenia are not only heredity but the environment played almost an equal part in the making of our personality. The many studies of twins has provided social scientists with the knowledge that identical twins are alike more so than unidentical twins. Therefore if one identical twin was schizophrenic, the other had 45% chance of being schizophrenic. For non identical twins the percentage was much lower. Scientists studying schizophrenia, conclude although not been proven beyond doubt that schizophrenia is a disease which has just one single cause, but has a range of causes This suggests that schizophrenia can be attributed to either heredity or environment.

An important matter including both twin and adoption studies, is that research within the environments of adopting and biological families, is often underpinned by assumptions and as a result, it is difficult to use these studies in the argument of heritability of intelligence.

“ Twin studies are a vastly important tool in dissecting the nature versus nurture argument. Identical twins, or monozygotic twins, are siblings whose genotypes are duplicates of each other. They are most likely the best indicator of whether biology affects traits and psychopathology in human beings. For example, if one twin has dark hair, then the other twin has dark hair as well; this concept of identical genes would ideally distribute itself toward the phenotypes of behaviour and personality of identical twins” (Plomin, DeFries, McClearn, & Rutter, 1997).

<https://assignbuster.com/study-of-genetics-and-developmental-psychology/>

According to Plomin (Plomin, DeFries, et al., 2001) “ For nearly every area of psychology that has been studied, twin and adoption studies have shown genetic as well as environmental influence.” .

“ Arguments for environmental influences are compelling; at the same time there is growing evidence that genetic influence on intelligence is significant and substantial” (Eysenck, 1998; Mackintosh, 1998; Plomin, 1994; Steen, 1996). Plomin seems to acknowledge both genetic and non genetic factors make us who we are.

Present

Current research in developmental psychology mostly focuses on “ how” individuals are different. Genes increase in influence as we age. For example: Schizophrenia appearing in adolescence rather than in childhood is not necessarily because genes are able to turn themselves on and off, which is quite possible, but we all have specific genes that cause specific actions. Therefore what activates these genes? Is it when for example a serial killer is old enough for their serial killer genes to evolve, or does something in the environment trigger this particular gene? Plomin suggests that:

“ the “ nature vs nurture” debate has become sterile and that, in the Nineties, the two camps have started to come together. The task today is to study how genes and environment interact, not how one takes precedence over another. Traits that are genetic need not be immutable, because the environment can be modified so that the genes never become manifest ”

Cited

Cognitive ability commonly known as Intelligence can be measured by the use of IQ tests. Plomin's research, has opened the possibility that the environment can have influence over cognitive development . Plomin (1991) " suggests other factors such as parental affection, birth order, gender differences, experiences outside the family, accidents, and illnesses may account for differences in IQ between siblings". One of the most interesting yet virtually unknown findings regarding cognitive ability has emerged from Multivariate Genetic Analysis which focuses on the connection between traits rather than the variance of each trait. " Findings from Multivariate genetic analysis is that the same genetic factors may influence different abilities". (Petrill, 1997) Suggesting, that the same genes are largely responsible for genetic influence throughout development perhaps due to individuals creating environments that advance genetic abilities.

Future

The greatest event in the history of genetics is the discovery of DNA (Watson & Crick, 1953). Which led to two major functions, storage of an organism's genetic information and control of the production of proteins " The Human Genome Project" completed in 2003 found that there is not one simple human genome but we all have a unique genome

The fact that DNA contains genetic information that allows all living things to function, grow and reproduce. Helps us to understand part of DNA's role. That is long term storage of information. Geneticists apply this information to identify genetic and inherited diseases. Finding a disease mutation allows geneticists to treat the cause and allowing identity in other family members,

perhaps preventing further development of a disease. For example a gene detected in 1993 that increased dementia later in life (late-onset Alzheimer's disease or LOAD; Corder et al., 1993). This gene can now help us understand its developmental effects and its effect on other types of dementia and other mental disorders as well as any connection with environmental disorders. Furthermore DNA testing compared to quantitative studies is relatively cheap and is easily obtained.

This 'top-down' behavioural level of analysis is likely to make important contributions towards prediction, diagnosis and intervention greatly improving our abilities to ask more powerful questions regarding development. The answers to these questions will open up immense potential for behavioural sciences. " For example psychologists can ask how the effects of specific genes unfold in behavioural development and how they interact and correlate with experience" (Plomin, DeFries, Craig, & McGuffin, 2003).

Conclusion

In conclusion I feel that Plomin's view of the role of environmental factors in the study of genetics and developmental psychology allows both genetic research and heritable influence to play a part of developmental studies. If we all have genes that can make us become serial killers and these genes can be turned on and off over our lifespan. What triggers this gene if not environmental influences?. Plomin recognises that genetics can explain up to half of the variance in psychological traits, therefore environment must play an important role in nature and nurture.

My understanding is that genetics affect environments through our actions and the association between human and environment therefore is a combination of each. The question of human nature is not only biological but genes and environment contribute to our development.

“ The transformation of the social and behavioural sciences from environmentalism to biological determinism is happening so fast that I find I more often have to say Yes genetic influence are substantial but environmental influences are important too” Plomin. R (cited in Weiten 2001).