Nature-nurture and the cloned human

Psychology, Behaviorism

The three levels in biopsychosocial theory are biological, psychological (e. g., cognitive and emotional influences), and social-cultural. The influences in the three levels generally interact with each other in accounting for the variability between individuals. However, if a person wanted to be cloned, the person and the clone should be genetically identical, i. e., a result of the first level. We do know that identical twins are essentially clones. Genetics can fully account for characteristics such as genetic sex, and also can influence or fail to influence otherpersonalitycharacteristics of identical twins. Influence, however, means that genetics interact with influences from the other two levels. Until the last paragraph of this paper, the assumption that evidence based on identical twins can be generalized to clones has been accepted.

The goal of psychologists studying personality is to account for the variability between individuals. Behavioral-genetic research, which has been furthering this goal, has been motivated by findings that similarities between identical twins do not vary as a function of whether the twins were reared together or apart, there is considerable between-twin variability, and adopted children do not share characteristics with their adoptive families but do share them with their biological families. There have been consistent findings that 40-50% of the between-individual variability in personality characteristics is attributable to genetics, and the percentage of variability accounted for by genetics depends on the characteristic being studied. Studies of genetics and IQ scores have provided evidence that genetics account for a large percentage of between-individual (but not between-group) variability in scores (whatever these tests actually measure!), though results can be

mediated by other influences, e. g., by social expectations (from level three) and cognition (from level two).

For example, children who do not care enough about their grades to appreciate the worksheet and memorization approach that passes for teaching at many schools (social expectations) may interpret these tests (cognitive influences) as yet another obstacle invented by the educational system. Nonetheless, if you score well on an IQ test, there's a high probability that your clone will too. There are genetic predispositions for many characteristics, with varying degrees to which non-genetic factors interact with genetic ones, e. g., depression, attitudes, alcoholism, altruism, shyness.

Need for Further Research

When people think of cloning, they seem to be asking questions such as, " if Einstein or Mozart were cloned, would the clone grow up to be a scientific or musical genius?" First, the clones and persons would differ in some or many of their experiences both before birth (i. e., in the womb, identical twins differ in their positions, access to nutrition, etc.) and after. The clones would be predisposed towards scientific or musical accomplishment. However, Watson and Rayner (1920/2000) demonstrated that classical conditioning resulted in " Little Albert" becoming frightened of anything furry after only two trials in which the presentation of a white rat was followed by a loud noise. So who knows what would happen if Einstein's or Mozart's clone tripped over an encyclopedia or violin?

However, Einstein and Mozart were at the extremes of scientific and musical genius, where genetics are a greater influence than for Aunt Edna, who teachesscienceat Dung Hill High School, or for Grandpa Patrick, who entertains hisfamilywith heart-warming renditions of " When Irish Eyes are Smiling." So there should be a high probability that Einstein's and Mozart's clones would make important contributions to science andmusic. To my knowledge, there have not been identical-twin studies, where one or both twins received historical recognition for their accomplishments. The second type of question is related to possible differences in reproduction and cloning. Increasingly sophisticated methods of monitoring brain activity, e. g., functional magnetic resonance imaging, have resulted in studies that have provided evidence that particular areas of the brain become activated as we develop new abilities and acquire new forms ofmemoriesand that over the course of development, there are permanent changes in a person's brain. Probably the most interesting possible change is related to our understanding that we have an internal world separate from others. Piaget (1952/1963) studied how such a sense of self-developed duringchildhood, and there's evidence that different brain areas are activated in response to self-relevant information than in response to other information. Thus the question arises: Is it possible for Aunt Edna and her clone to have a shared sense of self?

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