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THE ROLE OF INNATE AND ACQUIRED FACTORS IN PERSONALITY DEVELOPMENT

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Abstract. This article examines the relative contributions of innate factors, including genetic and biological predispositions, and acquired factors, including social and educational influences, to personality development. It reviews biogenetic, sociogenetic, and convergence approaches, considers the perspectives of Eastern scholars, and discusses contemporary evidence from twin studies, gene-environment interplay, and epigenetic research. The article argues that personality develops through the continuous interaction of innate predispositions, environmental influences, and individual experiences. It also highlights the implications of this integrative perspective for parenting, education, and psychological assessment.

Keywords: personality, personality development, heredity, environment, temperament, convergence theory, epigenetics, parenting styles, attachment.

Introduction. What plays a more significant role in personality development: the biological potential with which individuals are born or the social environment and upbringing they experience throughout their lives? This question represents one of the longest-standing debates in psychology and is commonly associated with the nature-nurture debate.

The relevance of this issue lies in its implications for educational policy and practice, the early identification of children's developmental needs, the selection of appropriate parenting strategies, and the provision of psychological support. In the context of ongoing educational reforms, particular attention is being paid to creating conditions that promote the comprehensive development of the younger generation.

Innate factors include genetic predispositions, characteristics of the nervous system, temperamental tendencies, and biological influences operating during prenatal and perinatal development. Acquired factors include family relationships, educational institutions, peer interactions, cultural influences, mass media, and individuals' own activities and experiences. These categories are analytically distinct, but their effects are closely interrelated throughout development.

The aim of this article is to examine the respective contributions of innate and acquired factors to personality development, analyze the mechanisms through which they interact, and synthesize relevant theoretical perspectives and empirical findings from contemporary psychology.

The study employs theoretical analysis, comparative-historical analysis, and conceptual synthesis of findings from international psychological and behavioural-genetic research.

Literature Review and Methodology.

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Biogenetic, sociogenetic, and convergence approaches. Historically, three major approaches have been used to explain the development of personality: biogenetic, sociogenetic, and integrative approaches based on the interaction of internal predispositions and external conditions.

The biogenetic approach emphasizes the contribution of heredity, biological maturation, and individual differences in physiological functioning to personality development. In psychoanalytic theory, Sigmund Freud considered early childhood experiences and the development of instinctual drives through psychosexual stages to be central to the formation of personality. Although Freud's theory differs from contemporary biological approaches, it represents an influential historical perspective on the origins and development of personality.

Hans J. Eysenck proposed that major personality dimensions, particularly extraversion-introversion and neuroticism, are associated with individual differences in biological and physiological functioning. He also emphasized the contribution of genetic factors to personality variation. The Eysenck Personality Inventory (EPI), developed within this research tradition, has been used to assess extraversion and neuroticism in psychological research. Its suitability for a particular population depends on the instrument's validity, reliability, and cultural and linguistic adaptation.

The sociogenetic approach, by contrast, emphasizes the role of social experience, learning, and cultural conditions in personality development. Albert Bandura's social learning theory demonstrated the importance of observational learning, imitation, and the consequences of behaviour in shaping behavioural patterns. Children can acquire new behaviours by observing others and learning how particular actions are reinforced or discouraged.

Lev S. Vygotsky's cultural-historical theory proposes that higher mental functions initially emerge through social interaction and subsequently become internalized as psychological processes. His concept of the zone of proximal development highlights the importance of guided learning and collaboration with adults or more capable peers. This approach does not deny the biological foundations of development; rather, it emphasizes the role of social interaction and cultural mediation in the development of specifically human psychological functions.

The convergence approach, associated with William Stern, explains development in terms of the interaction between internal predispositions and external environmental conditions. From this perspective, personality cannot be understood adequately by examining either heredity or the environment in isolation.

Jean Piaget's constructivist theory similarly emphasizes the active interaction between the developing individual and the environment. According to Piaget, cognitive development involves assimilation, through which new information is incorporated into existing cognitive schemas, and accommodation, through which those schemas are modified in response to new experiences. Although Piaget's principal focus was cognitive development rather than personality as a whole, his theory contributes to a broader understanding of the active role individuals play in their own development.

John Bowlby's attachment theory also illustrates the relationship between biological predispositions and environmental experience. The attachment system has a biological basis, while the quality and consistency of interactions with caregivers contribute to the development of internal working models of relationships. These

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models may influence subsequent expectations, emotional regulation, and patterns of interpersonal interaction, although later experiences can also modify them.

Diana Baumrind's research on parenting styles further demonstrates the importance of the family environment. Her original classification distinguished authoritative, authoritarian, and permissive parenting styles. Subsequent research has examined how different combinations of parental responsiveness and demandingness are associated with children's behavioural, emotional, and social outcomes. These relationships should not be interpreted as universal or strictly causal, because parenting effects may vary across cultural and social contexts.

Perspectives of Eastern scholars on personality development. The relationship between innate characteristics and acquired influences has also been addressed in Eastern philosophical and scholarly traditions.

Abu Ali ibn Sina examined human physical and psychological characteristics through the concept of mizaj, or temperament, and recognized the importance of individual natural predispositions. At the same time, his writings on education emphasized the significance of upbringing, daily routines, physical activity, and the selection of appropriate teachers. His views can therefore be interpreted as recognizing both natural differences and the role of educational guidance in human development.

Abu Rayhan Beruni explored the relationship between human conduct, knowledge, and the natural and sociocultural conditions in which people live. His emphasis on learning, observation, and intellectual inquiry highlights the importance of knowledge and education in human development.

In the philosophical and literary works of Alisher Navoi, the ideal of the “komil inson”, or morally and intellectually developed human being, occupies a central position. This ideal emphasizes the cultivation of human potential through knowledge, moral education, social relationships, productive activity, and personal self-improvement.

Although the ideas of these scholars emerged within historical and philosophical frameworks that differ from contemporary empirical psychology, they provide valuable perspectives on the relationship between individual predispositions, education, and personal development. Their works should therefore be interpreted in their historical contexts rather than treated as direct empirical evidence for modern psychological theories.

Evidence from behavioural genetics. Since the second half of the twentieth century, twin and adoption studies in behavioural genetics have made it possible to investigate the relative contributions of genetic and environmental differences to psychological characteristics.

Research using the Five-Factor Model of personality generally suggests that genetic differences account for a substantial proportion of the variation in personality traits. Heritability estimates for the Big Five traits are often reported within an approximate range of 40-50%, although the estimates vary according to the trait, population, measurement method, and study design.

A major meta-analysis by Polderman et al. (2015), which synthesized findings from five decades of twin studies, found that genetic influences contribute to variation across a wide range of human traits. The results support the importance of both

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genetic and environmental influences, although the relative contribution of each varies across characteristics and populations.

Eric Turkheimer (2000) summarized three influential principles of behavioural genetics. First, individual differences in behavioural characteristics are influenced by genetic differences. Second, the effects of being raised in the same family are often smaller than might be expected, although their magnitude varies across traits and environments. Third, much of the variation in psychological characteristics is associated with non-shared environmental influences and other sources of variation not accounted for by genetic differences or shared family environments.

These principles require careful interpretation. Heritability is a population-level statistical estimate of the proportion of observed variation associated with genetic differences under particular environmental conditions. It does not mean that a specific individual is composed of a particular percentage of genetic and environmental influences. Nor does a high heritability estimate imply that a characteristic cannot be modified through education, intervention, or changes in environmental conditions.

Gene-environment correlation and interaction. Genetic and environmental influences do not operate independently. The concept of gene-environment correlation describes situations in which genetic differences are associated with differences in the environments individuals experience.

Scarr and McCartney (1983) distinguished three forms of gene-environment correlation: passive, evocative, and active.

Passive gene-environment correlation occurs when parents provide both genetic predispositions and an environment associated with their own characteristics. For example, parents who are strongly interested in reading may transmit genetic characteristics associated with certain cognitive tendencies while also providing books and encouraging reading at home.

Evocative gene-environment correlation occurs when an individual's characteristics elicit particular responses from other people. For example, a child's sociability, persistence, or emotional reactivity may influence the ways in which parents, teachers, and peers respond to them.

Active gene-environment correlation occurs when individuals increasingly seek out or create environments that correspond to their interests and predispositions. For example, a young person with a strong interest in music may independently pursue lessons, join musical groups, or participate in related activities.

These processes can change over the course of development as individuals gain greater autonomy and opportunities to select their environments. However, their expression also depends on family circumstances, socioeconomic resources, cultural expectations, and access to educational opportunities.

Gene-environment correlation should be distinguished from gene-environment interaction. Correlation refers to an association between genetic differences and environmental exposure, whereas interaction occurs when the association between an environmental condition and a psychological outcome varies according to genetic differences, or when genetic effects vary across environmental conditions.

Robert Plomin and other behavioural-genetic researchers have emphasized the importance of considering these relationships when investigating individual differences. Consequently, contemporary approaches increasingly move beyond a

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simple opposition between nature and nurture and instead examine how biological predispositions and environmental experiences jointly contribute to development.

Epigenetics and the biological effects of experience. Epigenetic research provides further insight into the relationship between environmental conditions and biological development. Epigenetic mechanisms can influence gene expression without altering the underlying DNA sequence. One mechanism investigated in developmental research is DNA methylation, which can be associated with changes in the regulation of particular genes.

In a frequently cited study, Weaver et al. (2004) investigated the effects of differences in maternal care on stress-related gene regulation in rats. The researchers reported associations between early caregiving experiences, DNA methylation, and the expression of a gene involved in stress regulation.

These findings contributed to the understanding of how early environmental conditions may be associated with lasting biological changes. However, animal studies cannot be directly generalized to human personality development. The interpretation of epigenetic findings also requires consideration of tissue specificity, developmental timing, environmental conditions, and the distinction between association and causation.

Epigenetic research therefore provides evidence for biological pathways through which environmental experiences may influence development, but it does not establish that all acquired experiences produce permanent or heritable changes. Rather, it highlights the complexity of the relationship between biological predispositions and environmental influences.

Implications for Education, Parenting, and Psychological Practice. The theoretical and empirical evidence reviewed above has several implications for education, parenting, and psychological assessment.

First, children's temperamental characteristics and individual differences may influence how they respond to educational demands, disciplinary practices, and social situations. The same educational or parenting strategy may therefore produce different outcomes in different children. An individualized approach that considers developmental needs, strengths, interests, and emotional characteristics may help improve educational support.

Second, parenting practices and the emotional climate of the family may contribute to the ways in which children's predispositions are expressed. Research has frequently associated authoritative parenting, characterized by a combination of responsiveness, warmth, and appropriate behavioural expectations, with favourable developmental outcomes. Nevertheless, these associations vary across contexts and should not be interpreted as evidence that one parenting style produces identical results in every family or culture.

Third, the quality of early caregiver-child relationships is relevant to emotional and social development. Secure attachment is associated with several positive developmental outcomes, although attachment is not the sole determinant of later personality or interpersonal functioning. Subsequent relationships and experiences may also influence developmental trajectories.

Fourth, standardized psychological instruments may support the systematic assessment of personality characteristics and parental attitudes. The Eysenck Personality Inventory and the Varga-Stolin Parental Attitude Questionnaire are

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examples of instruments used in psychological research and practice. Their use should be guided by appropriate psychometric evidence, standardized administration procedures, cultural and linguistic adaptation, and professional interpretation. Assessment results should not be treated as definitive descriptions of an individual or as substitutes for comprehensive psychological evaluation.

Finally, recognizing the contribution of heredity does not diminish the importance of upbringing and education. On the contrary, understanding individual differences may help educators and psychologists tailor support more effectively, develop children's strengths, and identify developmental difficulties at an early stage. A developmental approach should focus not on fixed predictions based on innate characteristics but on creating conditions that support learning, adaptation, and personal growth.

Conclusion. The analysis indicates that the opposition of innate and acquired factors as mutually exclusive explanations of personality development is not consistent with contemporary integrative approaches in psychology. Genetic predispositions, temperament, and characteristics of the nervous system contribute to individual differences, while family relationships, education, cultural conditions, social experiences, and personal activity influence how these predispositions are expressed and developed.

Findings from behavioural genetics, gene-environment research, and epigenetics support the view that biological and environmental influences are interconnected. However, their relative contributions vary across psychological characteristics, developmental stages, populations, and environmental conditions. Heritability estimates should therefore be interpreted as population-specific statistical measures rather than as fixed indicators of the determinants of an individual's personality.

The perspectives of Eastern scholars, including Ibn Sina, Beruni, and Navoi, also provide historically significant insights into the relationship between individual predispositions, education, knowledge, and personal development. Although these perspectives differ from contemporary empirical models, they reinforce the longstanding recognition that human development involves both individual characteristics and the conditions in which people live and learn.

In educational and psychological practice, these findings support the use of individualized, developmentally appropriate, and culturally sensitive approaches. Further empirical research, particularly longitudinal studies examining family upbringing, educational environments, cultural values, and individual differences in Uzbekistan, could contribute to a more comprehensive understanding of personality development and inform the development of effective educational and psychological support strategies.

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