

Critical and Sensitive periods in Child Development

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This article deals with a debate that helps us reflect on the degree to which early childhood experiences can mould individuals...



The concept of critical period and sensitive period has emerged from the study of Ethology and Evolutionary Psychology which studies the adaptive or survival value of species typical behavior and its evolutionary history. Konrad Lorenz, a European ethologist observed the behavior patterns that promote survival. The best known of these is Imprinting, the early following behavior of certain baby birds, such as ducklings, that ensures that the young babies will stay close to the mother and be fed and protected from danger. This imprinting behavior takes place during the first few hours after birth. If the mother duck is not present during this time, but an object resembling her important features is, young ducklings may imprint on it instead.

Observations of imprinting led to a major concept that is applied in child development: the 'critical period'. It refers to a limited time span during which the child is biologically ready to acquire certain adaptive behaviours but needs the support of an appropriately stimulating environment. It is a time period during which the child is maturationally (biologically) ready to acquire a skill. If the child has favourable experiences during this period, development will progress well. However, if there are unfavourable experiences and poor environmental stimulation, development will suffer. The concept of critical period also suggests that the damage done because of unfavourable experiences may be irreversible. Many researchers have conducted studies to find out if complex cognitive and social behaviours must be learned during certain time periods. For example, if children are deprived of adequate food or physical and social stimulation during their early years such as in case of feral children, will their intelligence suffer? If language is not learned during early childhood, is the child's capacity to acquire it reduced?

Many researchers now agree that the word 'critical' is not always appropriate. It is better to talk of 'sensitive periods' atleast when looking at cognitive development and emotional development. It is felt that the term sensitive period offers a better account of human development than the strict and rigid notion of a critical period. A sensitive period is a time that is best for certain capacities to develop because the individual is especially responsive to environmental influences. However, its boundaries are less well defined than those of a critical period.

Research indicates the existence of critical periods or sensitive periods in the various areas of development. While in certain areas such as physical development, the concept of critical period holds true, in other areas such as emotional development and language development, the concept of sensitive period may be more suitable. For example, normal visual experience is 'critical' within the first few months of life for the vision processing part of the brain to develop properly. If the child is not exposed to light and other visual stimuli, brain development for centres of sight may not happen properly. Similarly, the first trimester of pregnancy is a critical period of prenatal development. It is during this time that organ formation, cell differentiation and tissue specialization is taking place. Exposure to harmful environmental factors called 'teratogens' (e.g pollution, infections, drugs, poisonous substances etc) during the first trimester can cause major developmental defects.

The concept of sensitive period is more applicable to language development and social and emotional development. Earlier, it was thought that the early years were a critical period for language development i.e the child was biologically ready at this time to acquire language skills. It was essential to give language exposure to a child if language was to be developed properly. If he/she was not given the right environmental support to develop, such as the case of feral children, the damage done would be irreversible. Later research however showed that an early impoverished environment led to a decreased ability to learn language skills but not zero ability. (Mukunda, K.V, pg. 92) It is certainly easier to learn language at that age but is also possible to learn language in later years, although with more effort. Therefore, the term sensitive period is perhaps better suited.

Similarly, many researchers claimed that the first six months of life are crucial for emotional and social development and for the development of attachment. Children who are not given warm nurturance during this time will have greater emotional difficulties such as being fearful, distressed and avoiding contact with other people. If the neglect continues, they may find it difficult to form stable relationships later in life. This concept was also modified later in the favour of sensitive period when researchers said although the first six months are crucial for attachment, children can recover from the absence of attachment figures and can form strong attachment relationships if they are given a loving and nurturing environment, even beyond the first six months. Researchers found that children in orphanages adopted before the age of one year were better emotionally adjusted than those adopted later. However, if warm nurturance was given to children adopted even later than a year, early deprivation could be compensated for to a large extent.

This debate over whether early childhood is a critical period for child development with strict boundaries and irreversible

effects or whether it is a sensitive period when children are more responsive to stimulations is a crucial one. The debate helps us reflect on the degree to which early childhood experiences can mould individuals. It also sheds light on possible pathways of development in the face of early deprivation and neglect.

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