

# Human development in an evolutionary perspective: A review

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## Abstract

"Evolutionary developmental psychology" is considered alongside other approaches that have sought to apply the evolutionary theory to a study of human behaviour, like sociobiology and more contemporary mainstream evolutionary psychology. An EDP perspective has the potential to provide a more nuanced understanding of "human ontogeny" by focusing on the "whys" of development, which, in turn, will help us better comprehend the "hows" and "whats" of development. In this study, we propose that learning more about the "whys" of development would help us learn more about the "hows" and "whos" of development. It is plausible to assume that there is a connection between "phylogenies" and "ontogenetic" development due to the interdependence of biological, social, cognitive, and emotional elements that shape this development. "Evolutionary developmental psychology" has been accepted in the scientific community because it offers a more complete picture of the maturation process.

*Keywords:* Human development, Evolution, Evolutionary Perspective, Child Development.

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## INTRODUCTION

The biological idea that underpins the evolutionary theory of development served as the inspiration for the field of developmental psychology. Despite this start, we may see a decrease of this impact in the explanations of human ontogeny after the first decades of the previous century.

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We operate on the presumption that it is impossible to fully comprehend human evolution without taking into account the connection that exists between biology and culture, as well as the inseparability of the many levels of analysis, namely phylogenetic, ontogenetic, historical-cultural, and microgenetic. When we make this presumption, when we think about development in ontogenesis, we are thinking about a process that takes place in a historical moment and in a context, and that in itself is a result of evolution via natural selection, along with our constitution as a species. Products developed by humans have shapes and purposes because of their qualities and the processes through which they mature. Ontogeny must be considered as a byproduct of evolution. This knowledge should be included into evolutionary theories of the human mind and behaviour.

The concept of development as a process, rather than a collection of goods or outcomes, or individual achievements or talents, has to be taken seriously when considering the degree of analysis of individuals within the species over the life span. Studies in the field of developmental psychology often centre on the products of development as relatively stable states as their primary emphasis. They fail to account for the intricacy of the underlying processes and the interdependence of the elements that ultimately matter. Studies of infants in their early stages of development are typical of this trend. Many of them examine, for example, the fixed abilities of infants, without taking into account how such abilities evolved and how they fit into the human mind. Monitoring the growth of thought processes is undeniably significant. However, despite the fact that research on the capabilities of infants shed light on critical areas of beginning development, the concept of an individual's "initial state" still requires some clarification. It can't be limited to when someone is born. Before then, the appropriate preliminary phases must be analysed, and additional critical junctures in later stages of growth must be identified. Equally insufficient is a concentration on performance over a wide range of talents throughout a range of ages. The purpose of developmental psychology should be to investigate the causes of individual differences in behaviour and cognitive representations throughout the course of their lifetime.

There are many different ways of thinking about progress, and we won't go into any of them here. It is crucial to highlight some of the concepts in the literature that are consistent with the perspective offered here. There will be a lot of shifts and effects as the process proceeds. Level-to-level exchanges generate the changes. The systems development method places a premium on these interplays. Specifically, the idea of epigenesis is fundamental. Over the course of development, new connections are forged that are indicative of the two-way nature of relationships at the behavioural (including the intricate interplay of environmental effects) and biological levels.

The molecular, cellular, sub-cellular, and eukaryotic levels, as well as the organism as a whole, are all taken into account. Each functional level affects and is affected by the others. In this sense, development may be seen as the reciprocal activities between different levels, each of which leads to an increase in complexity and structure. Since it is generally accepted that gene–environment interaction occurs at all levels, including the molecular one, it is not possible to disentangle the effects of genetics from those of the environment. Probability and uncertainty characterise each person's growth as a consequence of the complex interplay of environmental (physical, social, and/or cultural), behavioural, neurological, and

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genetic factors. Prenatal experiences (such as feeling the mother's movements or hearing her voice) are singular, non-repeatable, and a factor in a non-linear equation.

### *Stages of Human Life History Infancy*

- **Infancy:** This is breastfeeding time for mammals.

**Human characteristics:** Among humans, hunter-gatherer cultures are distinguished by the custom of exclusively breast-feeding their babies during the first three years of life. Humans wean their young at a younger age than our nearest cousin, the chimpanzee, who waits until they are 4 or 5 years old.

- **Childhood:** The transitional stage from beginning solid meals at weaning to full adult diet independence.

**Human characteristics:** In contrast to other primates, humans seem to have an extended version of this time that is linked to a shorter infancy. Childhood in hunter-gatherer communities typically lasts from age three to seven, the age at which children become more independent of their parents upon the development of their permanent adult teeth. During this time period, the duty for providing food for children often passes from the mother to other members of the community (such as older siblings), despite the fact that youngsters continue to be dependent on their parents socially and psychologically.

- **Juvenility:** The time between being weaned as a baby or still being a kid and reaching sexual maturity and social independence. During this time, social and other types of play are prevalent, and it is shared by all mammals.

**Human characteristics:** This time span typically lasts anywhere from seven to a decade and a half in hunter-gatherer communities. Along the same lines as other social animals, this period of life is often spent engaging in social and other types of play. It is also a time when a child's dependence on his or her parents begins to lessen and the influence of peers begins to grow.

- **Adolescence:** includes one's own psychological, emotional, and physiological development. Many primates lack a clear phase of adolescence to indicate the change from juvenility to maturity (e.g., no growth spurt).

**Human characteristics:** Explicit maturing of body and subsequent phase of rapid development. In most cases, this is the period when one begins to experiment with and hone their social techniques connected to reproduction and the assumed duties of adulthood (e.g., those associated with competing for mates). Activities often associated with youth transition into more mature forms at this period (e.g., play fighting gradually escalates to real fighting). The duration of this stage is longer in industrial cultures than in hunter-gatherer ones because children reach physical maturity earlier and remain dependent on their parents for a longer time (e.g., to finish school).

- **Adulthood:** The period of a mature organism's reproductive activities, which include seeking a partner or mates (for example, vying for mates or selecting mates) and investing in children.

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During this time, the individual may also be involved in mating competitions. In the vast majority (95–97%) of mammalian species, the primary reproductive emphasis of males is on mating, whereas the primary reproductive focus of females is on rearing.

**Human characteristics:** During this time, the emphasis in hunter-gatherer communities and elsewhere is on finding a spouse and making investments in any kids that may follow, similar to the behaviour of other animals. Humans are unique among animals in that both sexes, although to a lesser extent for males, contribute to their offspring's well-being.

### *Evolutionary psychology and child development*

Evolutionary developmental psychology is the study of how the fundamental concepts of the Theory of Evolution may be used to make sense of modern human development. It is a relatively recent strategy that has as its mission the investigation of how our evolutionary history influences the ontogenetic development of human beings. The goal of this method is to determine in what ways our evolutionary past has effect.

There are two basic assumptions that connect to evolutionary viewpoints and provide helpful heuristic contributions to developmental psychology. One of them has to do with people's unique responses to their natural and social settings. That's why kids aren't all the same when it comes to things like mortality, abuse, neglect, starvation, and the quality of their care providers and schools. Negative impacts on children's health, life expectancy, and development may be linked to this disorder, and it may have far-reaching consequences for their ability to live to adulthood and have children.

The concept of species-typical traits is another addition. In the case of the human person, this would refer to the behaviours or the motives that often arise in a variety of various cultural and historical situations (universal predispositions). They would come into being because to the high adaptive value that they possess; to put it another way, their presence is linked to the maintenance of our species and its ability to continue into the future. As a direct consequence of the extended time of relative immaturity that human beings experience, we are able to record phenomena such as the following: parental care, that encompasses a wide range of phenomena, such as attachment as well as conflict between child but also adult, sibling contact, moral development training, the organization and functioning of groups of kids of similar ages, and learning.

Even while all of those different interaction systems are significant, for the sake of this particular study, we are only going to discuss and remark on one of them, and that is the connection between adults and children. As a result of their immaturity, children are very dependent on their caregivers in both physical and mental ways throughout this stage of their development.

### *Relationship between parental care and child development*

According to the Evolutionary Theory, the degree of development of the offspring and the behaviours of the parents evolved at the same time, in terms of phylogenetic progression. Therefore, there is a

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balance between "effort in mating" and "effort in the care of offspring," as well as between parental investment and early stage of development. The time and effort parents put into raising a child reduces their capacity to do other things, such as have more children. In this approach, the effort put into mating is reduced due to the amount of energy spent on developing the next generation. As a result, the relative importance of mating and parental care will vary across species, between females and males, and between different stages of development and different ecological settings.

A vast range of patterns of parental behaviour may be seen in mammals, and these patterns can be categorised according to the level of development of the young animal at the time of birth (Rosenblatt, 1992). Some animal species have a relatively short gestation period, resulting in very preterm births. Infants have underdeveloped thermo-regulatory and sensory systems and cannot feed themselves. The term "altricial" is used to refer to rodents, marsupials, and primates. As a result, children depend critically on their parents' care to stay alive in situations like these. However, there are other species where the pregnancy lasts a long time and the offspring have fully formed senses of sight, hearing, temperature regulation, and propulsion (i.e. horses, cattle). We use the term "precocial" to describe them. Parental care is still vital to the newborn in these situations, although it is less critical than in the prior category. There is a possibility that the "altricial" model is connected to an environment that is marginal, unstable, and floating; in this setting, animals thrive and survive best when they produce the greatest number of offspring feasible. The typical "precocial" is best suited to warm, humid climates.

There are, however, creatures that do not belong to either of these two categories. The time of gestation is lengthy, and while newborns possess certain abilities that enable them to execute some actions independently, they must rely on adults for the completion of other behaviours that are essential to their continued existence. For instance, a newborn animal could be able to see and hear normally from the moment of birth, but it wouldn't be able to move about on its own or keep up with the rest of the group as it moved around. We, too, are a primate, along with other species like chimpanzees. The latter exhibit "precocial" developmental traits including a long life span, a huge brain, and a small progeny size, but they are far less able to defend themselves than typical "altricial" species. These newborns need intensive parental care, from the time they are born, until they are strong enough to survive on their own.

One of the qualities that contributes to the fact that human newborns are born with very little development and are often vulnerable is the size of their brains. Slower and more sustained brain development compared to other primates. In addition, aspects of a child's personality that are still in the formative phases of development are endearing and serve as motivators for a parent's reaction. For instance, seeing newborn infants stimulates parental nurturing. In addition, other characteristics, including as the size of the body, the direction of the pelvis and the biped posture, and the location of the foramen magnum (the hole in the base of our skull from which the spine originates), have developed to contribute to this sensation. The foramen magnum position is what provides the orientation of the head and allows us to gaze ahead while we are standing. The term "neotenia" was used to describe the evolutionary chain of events that leads to a delay in development or the preservation of juvenile traits.

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Taking all of this into account, it's clear that a significant portion of a human's life is spent as a dependent child. This facet of the human development is not only concerned with the outward appearance of the infant, but also has profound effects on how we function as a species. Unlike monkeys, human beings don't reach sexual maturity until well into adulthood. *Homo sapiens* represent the only species that continues to care for and feed its young until adolescence or later, despite the enormous financial as well as physical cost to species as a whole. The benefit linked with a high cost of a lengthy period of immaturity might be a necessary contrivance to adequately grasp the intricacy of human social society.

Due to the delayed growth and the subsequent dependency on others, both physically and psychologically, from birth, an adult must be there in order to provide the circumstances essential for survival throughout that period of time. This is often supplied by the family, which may take several forms. Human parental care and family formation are evidence of the co-evolution of a number of different human characteristics, including those already mentioned, such as a long period of childhood and adolescence, a large brain, and a high level of parental investment, and others, such as the hidden ovulation, not reproductive sexual activity, and menopause.

### **LITERATURE REVIEW**

(Appiah et al., 2019) Human Development's effect on economic growth and development in African nations between 1990 and 2015 is the primary subject of this research. The study's main conclusions and findings indicated that progress in human development has a favourable and substantial effect on economic growth and development in Africa. The Human Development Index was used as the independent variable in this research, with GDP serving as the dependent variable and the control factors being inflation, capital, investment, and labour. Most academics have noted a good and strong link between labour and foreign assistance and economic development, which was confirmed by this study. It was suggested that greater work be done to improve people's abilities in all spheres.

(Machluf & Bjorklund, 2015) The research of the genetic and ecological mechanisms that regulate the development of social and cognitive abilities that are shared by all human beings, as well as the epigenetic (geneÐ environment interaction) processes that adapt these competences to local circumstances, is the focus of evolutionary developmental psychology. There are implications for significant present societal concerns as well as an overview of the fundamental presumptions and areas of this developing field as they relate to human life history and social and cognitive development.

(Brown & Richerson, 2014) This research aims to familiarise those who aren't already well-versed in the area with the ongoing discussions on how the evolutionary theory could be used to better explain human behaviour in the natural sciences, the social sciences, and the humanities. We look at the views on adaptable vs problem behaviors, the proximal mechanisms of the cultural transmission, and the connection between the human cognition and culture from the three major contemporary sub-fields: Evolutionary Psychology, Human Behavioural Ecology, and Cultural Evolution. We show, for example,

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that the Human Behavioural Ecologists assume optimal behaviour and also that Evolutionary Psychologists place more emphasis on instances of "mis-match" between the contemporary circumstances" and "domain-specific, evolved psychological systems" in terms of the percentage of the maladaptive behaviour that is predicted to occur in these situations. Proponents of the cultural evolutionism argue that social learning processes are effective at generating the novel solutions for problems, and they describe how the cumulative evolution of adaptive cultural complexity can result from relatively weak, the general-purpose learning mechanisms, along with the accurate cultural transmission. As an instance of where the differences between the numerous sub-fields of the economics are significant for the economics community, we then address the idea that a history of "inter-group rivalry" might explain the "evolution of non-kin cooperation" and detail how the numerous sub interpret cooperative behaviour among the non-kin. To get a complete understanding of human behaviour, we conclude that several scholars no longer make a distinction between the three domains.

(Alkire, 2010) The goals of this background paper are twofold: I to provide a synthesis of the discussions surrounding the concept of human development in order to inform the definition provided in the 2010 Report; and (ii) to propose relationships among the notion of human development and 4 related concepts: the Millennium Development Goals, human rights, human security, and happiness, drawing on the extensive policy and academic literatures. Due to their centrality, issues of inequality, temporal and spatial persistence, and environmental sustainability are also front and centre.

(Grinde, 2009) The brain, including its ability for good and negative states of mind, has been sculpted by the processes of evolution, making the evolutionary viewpoint useful for the study of quality of life. The authors of the current work adopt this stance in order to address three issues that stem from the realisation that social interactions significantly impact happiness: (1) What do we know about the fundamental characteristics of our social tendencies? (2) Is the current state of affairs to blame for the less-than-ideal quality of life? (3) Are there any viable alternatives to the hierarchical structure of contemporary Western society? The possibility of making suggestions for improvement in light of this conversation is brought up. In conclusion, it is feasible to establish circumstances that improve social interactions.

(Seidl-De-Moura et al., 2009) Here, human evolution is seen as a research topic. The main pillars of evolutionary psychology are outlined, and some broad assumptions for studying development are discussed. There are many widely held beliefs about human nature, and two of them are that the "human cognitive architecture" is the result of the interactions between the genes and environment, and that there is the universal human nature. The consequences of these and the other assumptions for the future methods for the study of childhood development from such an evolutionary viewpoint are discussed. It is hypothesised that there is a connection between the phylogenies and ontogenetic development because of the intertwined nature of the biological, social, cognitive, as well as emotional variables that shape this development. Evolutionary developmental psychology has been proved to have scientific significance since it provides a more holistic view of human growth and change.

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(Kamdar, 2009) The HDI and GDP are highly correlated with one another. The difficulties surrounding the relationship between HDI and GDP are the subject of the current article. The economy and people's well-being may both improve at the same time if certain measures are implemented. The in-depth look at how GDP affects HDI. To achieve this goal, a comparison research was conducted between India and other countries across the globe. In order to fully grasp the significance of HDI, comparisons between different social statuses are also done at the micro level. The United Nations Organization released its 2007 Human Development Index in which India's ranking fell from 126 to 128. While India's standing improved, other emerging nations have seen far more progress. Accordingly, UNO findings resulted in a lower HDI. With a higher score than India (0.743 to 0.619), Sri Lanka is clearly in a stronger position. Pakistan and Bangladesh, both in Southern Asia, got a meagre 0.555 and 0.547, respectively, among the world's other developing countries.

(Blasi & Bjorklund, 2003) Different schools of thought that have attempted to apply evolutionary theory to the study of human behaviour, such as sociobiology and more recent mainstream evolutionary psychology, are discussed and compared with evolutionary developmental psychology (EDP). We contend that an EDP viewpoint has the potential to give a richer knowledge of human ontogeny by focusing on the "whys" of development in addition to the "hows" and "whats" of development. As such, we offer five ways in which EDP might be applied to modern concerns in psychological growth. These include the following: (1) categorising developmental characteristics according to their evolutionary or functional status; (2) developing hypotheses and micro theories to examine the function of developmental traits; (3) gathering data from a variety of sources to evaluate developmental evolutionary hypotheses; (4) detailing the phylogenetic and sociocultural history of human developmental features; and (5) creating 'evolutionary experiments.' Our position is that an evolutionary developmental psychology (EDP) approach should not be considered as a replacement for other, more proximal theories of development but rather that an evolutionary viewpoint should be included into all descriptions of human ontogeny.

(Bogin, 1999) Individual and dyadic qualities are often studied in psychological studies of relationships, with an emphasis on certain forms of intimate personal relationships (romantic, parent-child, and friendship). In this study, we take a broader view of the many connections that make up a person's social milieu. There has been some recent research into the idea that individual social networks are multi-layered, with each layer representing a different set of connection qualities and densities. Each additional layer raises the total number of relationships by a factor of around three (from 5 to 15 to 50 to 150), but at the expense of increasing distance between each individual in those relationships and lowering the strength of their connections with one another. We suggest that the varied purposes and cost-benefit profiles of connections at different strata account for these regularities, drawing on social and evolutionary psychology. However, the costs of maintaining a connection at that level (most notably, the time that needs to be put in servicing it) are approximately proportional with the number of relationships, despite the fact that the benefits are asymptotic at each level. Due to the distribution of social effort necessitated by the trade-off between costs and benefits at a particular level, and across the

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varied sorts of demands and resources characteristic of different levels, social networks are structured as hierarchies with tiered sets of links. We propose that the trust in a relationship, which is a result of the time spent together, is the psychological key to understanding these concessions.

(Draper et al., 1990) When one looks at the behaviours involved with sexual maturity, mating, and parenting, one can see that there is a relationship between evolution and the processes that make up one's personality. This article specifies the varieties of proximal cues involved in the formation of personality malleables that prove crucial to the maturation of an individual's reproductive behaviour.

## **CONCLUSION**

The purpose of this work is to introduce the essential elements and assumptions of EDP, and to analyse the theoretical contribution of EDP to the study of child growth and development. As the EDP broadens our perspective on human development in light of current knowledge, it has scientific and social relevance. This is due to its epistemological foundation, which holds that one may reasonably expect correlations to exist between internal psychological states and external conditions. The EDP has its merits and drawbacks, just like any other theoretical stance.

EDP also has implications for the information we get about children and their development as a result of research; this includes understanding the unique characteristics of ontogenetic adaptation and taking into account more factors that may have an impact on a child's growth and maturation. Therefore, EDP may aid in the evaluation of risk and protective variables, allowing for the creation or modification of environments that better support children's holistic growth and development.

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