

Theories of Human Development: Darwin to the Present

Over the past 150 years various theories have evolved revealing different trends within the field of human development. The following is a brief overview of developmental thought, revealing where we are today, and giving us perspective on what may or may not be informing our underlying beliefs about our children's needs, and the methods we use to help meet them. Hopefully it will offer some historical perspective, insight about ourselves, our upbringing, as well as give us a better understanding about the human experience and development in general.

Biological Approaches

Originally human development was studied through a Darwinian lens, relying on an understanding of 'Natural Selection' as the guiding principle for explaining differences between individuals. Scientists looked at human characteristics as being passed on by genotypes (genetic codes) and phenotypes (the result of the genotype in relation to the environment). Behavior, intelligence, temperament and physical development were all seen to be the outcome of the relationship between the individual and the environment, but was understood that one's genetic heritage, the "genotype determines the opportunities by which the environment may have an influence on the phenotype." (Gottlieb, 1991b.) Behavior Ecology Theory is the study of behavior based on Natural Selection. The main aspects of this theory are that certain species have specific behaviors, which were born out of Natural Selection. It emphasizes the concept of "imprinting" or "critical periods" when the acquisition of a specific behavior can be optimized due to a unique susceptibility at that time. Behavior Genetic Theory is centered around finding genetic origins for the differences between individuals.

Learning Theories

The major differences between evolutionary theories and learning theories is that the former sees the genes as that which determine learning and the age at which learning takes place, while the latter have found various ways to greatly enhance learning in simple ways, as well as optimize learning potential through environmental supports. "Classical conditioning" or "learning by association" are accomplished by environmental manipulation, resulting in the famous experiments of Ivan Pavlov (1849–1936). Pavlov's Dog demonstrated that simply through systematic manipulation of the environment, Pavlov could train his dog to salivate in anticipation of food, when he heard the sound of a bell. Later B.F. Skinner (Operant Conditioning, 1938) focused on increasing the frequency of specific behaviors through "positive reinforcement," "negative

reinforcement” and “punishment.” (Here “negative reinforcement” means to not respond with a consequence in order to encourage a specific behavior. “Negative” here refers to something lacking, rather than something “bad” or “unrewarding.” “Punishment,” on the other hand, is meant as an unrewarding response to a specific behavior.) One can see how much of our society’s approach to raising children relies solely on these behaviorist learning theory principles. Social Learning Theory takes the view of development a step further. Researches began to see that not only are infants influenced by their environment but that they begin to learn to influence their environment, as well. It also became evident that new behaviors could be acquired without any conditioning, but simply through observational learning (Bandura, 1977). Lastly, Social Learning Theorists found that new behaviors were more easily developed in some situations than in others (i.e. “teachable moments”).

Cognitive Theories

Cognitive Theories are concerned with knowing, perceiving, planning and remembering. Behavior is understood to be a derivative of one’s mental experience and intelligence, because behavior is seen to come out of knowing what to do in different circumstances. Jean Piaget (1896–1980), the father of Constructivist Theory, was originally trained as an invertebrate biologist before he became interested in human development. With this Evolutionary Biology background, he brought important concepts such as “adaptation” to the environment, as part of the study of cognitive development. “Adaptation” is “a change in an individuals functioning that makes the individual better suited to survive in a particular environment” (Piaget, 1952). In this sense, knowing, meaning and understanding is not a stagnant depositing of information in an empty vessel, but a process of co-construction with the environment: one acts on the environment and the environment responds to those actions. Two important aspects of this theory include assimilation and accommodation. “Assimilation” involves adapting to the environment while relying on skills one already has, while “accommodation” is the editing and adjustment of present skills to meet the task at hand. These observations culminate in the following main principles of Piaget’s Theory:

- 1.) Children are active participants in their development,
- 2.) Children develop knowledge through acting on their environment, and
- 3.) Optimum learning takes place when children’s experiences are assimilated at existing level of development (Fogel, 2001).

Systems Theories

Systems theories posit that all factors and facets of the environment influence the development of the child in a complex process of interactions. A system is understood to be a set of interdependent components, interacting with one another. This interaction is called a “transaction.” “Feedback” is the process by which parts of system have effects on their own behavior through the interaction with the other parts of a system. For example, a relaxed and friendly teacher makes children feel relaxed, which in turn makes it easier for the teacher to relax as challenges come up, and is more likely to deal with those challenges in an easy-going way. The system (i.e. family/classroom/community culture/dynamic) emerges out of this complex dynamic, demonstrating a form of self – organization: the pattern or characteristic quality of a system, born out of these reciprocal actions. “Self-organization” can be often be maintained as new influences enter a system (as deviation-correcting feedback), as “feedback maintains a system’s characteristics over time in spite of small deviations...” (Fogel, 2001). But some feedback processes amplify small changes and can result in changes in the system overall (deviation-amplifying feedback), due to the dynamic interaction among parts.

For example, a conflict arises between two children one morning, in a typically relaxed and friendly classroom (system). One of the children did not get up on time, and angered her parents. This lead to her missing breakfast and being aggitated when she got to school, less patient with her peers, and the conflict resolution processes. Another child’s parent was caught in traffic and became very frustrated when another car cut in front of her, making her child late for school. Feeling her parent’s distress in conjunction, with being late, made her normal relaxed disposition in dealing with other children’s outburst crumble as her classmate shouted at her. Her meltdown in turn overwhelms her teacher, whose husband just lost his job the day before and due to the stress, didn’t get much sleep last night. Her patience to work through the conflict was lessened, and this lack of patience to help the children truly resolve the problem, lead to an unresolved tension throughout the day. The relaxed and friendly dynamic of the classroom was thrown off, and multiple other conflicts and issues arose as the day went on.

Ecological Systems Theory

Urie Bronfenbrenner was one of the first to apply systems theory to human development. Out of this came a multilayered model of the complex dynamic between the child, family, and society. He described his theory as: “the study of the progressive, mutual accommodation, throughout the lifespan, between a growing human organism and the changing immediate environments in which it

lives, as the process is affected by relations obtaining within and in between those immediate settings, as well as the larger social contexts... in which the settings are embedded" (Bronfenbrenner, 1979). The environmental layers of his system are described as:

Microsystem is the system that is the foundation, the basic relationship of the individual to the immediate environment, including interactions with family and peers and other institutions. The individual's relationship to the biological aspects of the environment such as nutrition, hygiene, and housing are also a part of the microsystem.

Mesosystem is the system of interactions among larger systems in the child's life (i.e. the school's relationship with parents.)

Exosystem is the system "holding" the previous two, which may not be directly involved with the rearing of the child, but clearly effect the child's world such as the media, local politics, economy, etc.

Macrosystem is the mother of all the other systems in that they all are contained within it. It is comprised of the unwritten cultural beliefs and behaviors guiding decisions, attitudes and common interpretations of reality and experience. It is the "values" that a society upholds, sometimes without even knowing it.

Interactive Systems Theory

Prior to the 1960's, the general understanding about child development and socialization was that it was a unidirectional phenomena from parent to child. It was agreed that the parent was the influence the child, and therefore it was the parent who was solely responsible for any child-rearing failure. Interactive Systems Theory recognizes that there is an interactive process of development on the side of child and the parent. Infant psychiatrist Louis Sander defines it as "the reciprocal mutual transactions and feedback processes between mother and child" (Sander, 1962). Now this mutual development goes essentially unquestioned in the child development field.

Sander's recognition played a large role in the "resurrection" of the work Lev Semanovich Vygotsky (1896-1934), father of Social Cultural Theory. Social cultural theory is rooted in the understanding that adults do not individually socialize the child, but that the society as a whole does, though mutual and cooperative interactive influences. This is not to say that the individual adults have no influence, but rather that knowledge is created though the developing child's "co-constructing" knowledge with society. The role of the adult is

considered to be most beneficial as a facilitator of knowledge building, an observer who sees the moments of optimum learning when a child is self-motivated and interested in acquiring a new skill. Vygotsky called this the “zone of proximal development,” and found that it is in this zone that there is a lasting impact on knowledge building and development. Vygotsky emphasized the importance of adults providing “scaffolding” for the child to realize their potential at various stages of development.

Dynamic Systems Theory

Dynamic Systems Theory, while rooted in the same principles of the other systems theories, concerns itself with an unresolved element in the former systems: the emergence of novelty and its embrace of creativity and spontaneity. One of the ongoing issues with trying to understand human development is how something more can evolve out of something lesser. Dynamic systems theory responds to this quandary by recognizing the implications of self-organization, multi-causality, and nested timescales. Self-organization in a system refers to ability of the system (child, human or other living thing) to maintain and develop itself among the mutual interactions and feedback between the all the different parts of that system (self & environment) and the environment. “Multi-causality” is the understanding that there are decentralized influences on a child’s development. “Self-organization” is maintained through multiple causes in constant flux. Microcosmically, these systems allow unpredictable behavior (elaborated in Chaos Theory), explaining the inability to exactly predict when a child will walk, or talk. On the macrocosmic level there are predictable behavior patterns. We know that a child will generally walk somewhere between 9–18 months. “Development can be envisioned, then, as a series of evolving and dissolving patterns of varying dynamic stability, rather than an inevitable march towards maturity.” (Smith & Thelen, 2003).

This is meaningful in that small changes at the microcosmic level can have impact on the system at the macrocosmic level. The impact may or may not be immediate, due to the complex array of feedback and interaction, but can sometimes be observed in a later pattern of behavior.

“The large-scale or macroscopic properties of a coastline – the bays, the ridges, the peninsulas – set the conditions for the small-scale or microscopic processes – waves, tidal forces, erosion. But these microscopic properties causally contribute to the long-standing macroscopic properties. This is an example of circular causality. “ (Smith & Thelen 2003)

A famous example of this comes from the field of mathematics (Chaos Theory)

and is known as the Butterfly Effect. A butterfly flaps its wings half way across the globe, moving the air in just the right way, in just the right day with just the right air temperature, resulting in a complex interaction of interconnected components that amplifying momentum and causes a hurricane here at home. Some events may arise and have no major effect on the overall development (deviation-correcting feedback), while others can change the course of ones life (deviation-amplifying feedback).

Interestingly enough, Lama began to speak about Universal Education right around the time that implications and Dynamic Systems Theory was beginning to take root in a number of humanistic fields in the west. For Buddhist practitioners and philosophers, it may be impossible to ignore the similarity between multi-causal, interdependent, quality of dynamic systems theory and the Buddhist notion of “karma:” a non-judgemental, non-linear, self-organizing system composed of a vast sea of feedback. Applying this to our lives today, our families, our communities, and our world there might be two reactions to this apparently infinite flux: empowerment or despair. Although with a clear understanding of dynamics systems, we can see that it is how we relate, how we choose to respond and interact with the multiple layers of our world and ourselves that sets the branching paths of feedback in motion. It is the small daily actions that “causally contribute to the long-standing macroscopic” (Smith & Thelen 2003) quality of our lives.