

Scope of Psychology in Education: Urie Bronfenbrenner's Bioecological Perspective

BONNIE AMONGE CRERAR
Department of Education
Dibrugarh University, India

INTRODUCTION:

*"Children need people in order to become human.... It is primarily through observing, playing and working with others older and younger than himself that a child discovers both what he can do and who he can become- that he develops both his ability and his identity.... Hence to relegate children to a world of their own is to deprive them of their humanity, and ourselves as well."*¹

(Urie Bronfenbrenner, *Two worlds of childhood: U.S. and U.S.S.R.*, Preface-1973)

*"Witness the American ideal: the self-made Man. But there is no such person. If we can stand on our own two feet, it is because others have raised us up. If, as adults, we can lay claim to competence and compassion, it only means that other human beings have been willing and enabled to commit their competence and compassion to us- through infancy, childhood and adolescence, right up to this very moment."*²

(Urie Bronfenbrenner, *Who Needs Parent Education?* 1977)

From the above quoted statements by Bronfenbrenner, the fact that man is a social being and cannot live in a vacuum is implied.

¹ Cf. Quotations from Urie Bronfenbrenner, p.1. Retrieved from <http://www.poemhunter.com>

The Bioecological Systems Theory of Human Development:

Bronfenbrenner's theory of human development was in itself in a continual state of development till his death in 2005. The theory was set forth in 1979 and was never laid to rest, with concepts either being added or subtracted from it. In spite of its continuous revision it still remains ecological stressing person-context interrelatedness. From an ecological perspective, "development is defined as the person's evolving conception of the ecological environment, and his [her] relation to it, as well as the person's growing capacity to discover, sustain, or alter its properties"³ Influenced by a socio-cultural orientation to child development, ecological systems theory presupposes that "through participation in activities that require cognitive and communicative functions, children are drawn into the use of these functions in ways that nurture and scaffold them."⁴ The full theory in its developed form deals with the interrelations among the following four concepts: PPCT

- P: process
- P: person
- C: context
- T: time

Here time will be discussed as penetrating all levels of context and hence forming a part of it.

Process:

Process plays a crucial role in development of an individual. By process Bronfenbrenner referred to the day to day complex reciprocal interactions between an individual and the persons, objects and symbols in its immediate environment. To such enduring form of interaction he referred to as *proximal*

³ Canadian Journal of Learning and Technology, Retrieved from <http://www.cjlt.ca/index.php/cjlt/article/view/172/168>

⁴ ibid

processes. Example parent-child and child-child interaction, group or solitary play, reading, learning new skills etc. on a regular basis. These proximal processes constitute the primary engines of human development because only by engaging in these activities and interactions the individual comes to make sense of the world, understand its place in it, and play one's part in either changing the prevailing order or fitting into the existing one. The extent to which these proximal processes can affect development depends on the person and context (immediate and remote) and time in which these processes takes place.

Person:

Bronfenbrenner acknowledged the significance of an individual in its own development. He coined the term **biopsychosocial** to describe a person, who according to him brought along the following three characteristics in any social setting:

a) Demand characteristics

Demand characteristics are largely biological and fixed. They are the '**personal stimulus characteristics**' that act as an immediate stimulus to another person- such as age, gender, skin color, physical buildup etc. It is largely genetic in nature. The demand characteristics may influence initial interaction because of the expectations formed initially.

b) Resource characteristics

Resource characteristics are not apparent immediately and constitute the **biopsychological** liabilities and assets that influence the capacity of an individual to exchange in proximal processes. This includes ability, experience, skill, knowledge, intelligence, access to good food, caring parents, educational opportunities etc.

c) Force characteristics

Force characteristics are those that are related to one's temperament, motivation, persistence and the like. They are behavioral in nature and can be developmentally instigative or

disruptive. For instance though two individuals may have equal demand characteristics and resource characteristics yet their development trajectory may differ due to the difference in their force characteristics.

According to Urie, in changing their environment an individual can play three roles, **relatively**:

- Passive- a person changes the environment simply by being in it, to the extent that others react to him/her differently based on **demand characteristics** such as age, gender and skin color.
- More active - the ways in which the person changes the environment are linked to his/her **resource characteristics**, whether physical, emotional or mental.
- Most active - the extent to which the person changes the environment is linked in part to the desire and drive to do so, or **force characteristics**.

Context:

According to the Bioecological theory of Bronfenbrenner, human development is influenced by multiple levels of the environment (context), who in turn also influence the environment. The relationship between the individual and the environment (context) is **synergistic** in the sense that it is a mutually influential relationship between a developing person and a multilevel ecological context which can be represented as: **person context**. The theory states that development is not possible in isolation but is the consequence of constantly evolving complex processes of interaction between a developing person and environment. Bronfenbrenner conceives of the environment as a set of “complex interlocking layers”, each having an effect on a child’s development. These layers are in themselves interrelated and as such changes or conflict in

anyone layer will ripple throughout other layers as well. He identifies five such interlocking contextual systems, from the most intimate to the broadest, with the child in the innermost core. For the purpose of convenience we shall discuss each layer separately, which are in reality continuously interacting.

- 1. Microsystem** It is the layer closest to the child and contains structures with which the child has direct contact. Bronfenbrenner noted, "*A Microsystem is a pattern of activities, social roles and interpersonal relations experienced by the developing person in a given face to face setting with particular physical, social and symbolic features that invite, permit or inhibit engagement in sustained, progressively more complex interaction with, and activity in the immediate environment.*" The developing person not only interacts with people at this level of the ecology, but also with the world of symbols and language. He also stated that the other people who interacted with the developing individual had their own "*distinctive characteristics of temperament, personality and systems of belief.*"

From the point of view of day to day personal face to face interaction, structures in the Microsystem includes one's family, school, peer group, neighborhood, day care centers or workplace (in case of adults). The bidirectional interaction in the Microsystem is direct and strong, continuously flowing back and forth. For example, How the coming of a new born baby affects the parent's lives? How the feelings and attitudes of parents affect the baby? How does an employer's treatment affect their productivity and how does the employee's productivity affect the employer's treatment of them?

- 2. Mesosystem** A mesosystem is the interaction of two or more Microsystems that contains the developing person,

such as interaction between the child's home, school, peer group, neighborhood and child care centers. The interaction between the Microsystems in turn affects the developing individual and is counter affected as well. For example: a child's academic progress depends not only on activities that take place in classrooms. It is also promoted by parent involvement in school life and the extent to which academic learning is carried over into the home. Similarly the interaction between parents and teachers too go a long way to promote positive development of the child. In case of low income neighborhoods, the child's family and neighborhood is especially important. The low income neighborhoods provide families with child care and offer children with training in art, music, sports, scouting and other special experiences which contribute to improve school performances and psychological adjustment. Neighborhood organizations such as religious groups, special interest clubs contribute to favorable development of the individual's self confidence, achievement, aspirations and responsible social behavior.

- 3. Exosystem** The exosystem encompasses linkages between two or more Microsystems one of which does not contain the developing person, but nevertheless has important indirect influences on its development. An example of exosystem effect is as follows- a parent who has been stressed at work, behaves more irritably than usual with his/her child when he/she gets home. The parent's workplace is an exosystem for the child, as the child spends no time there, but it has an indirect influence on the child. This happens because the people, with whom the child lives, interact in and are affected by contexts other than those containing the child. In the words of Bronfenbrenner, "*The exosystem is an extension*

of the mesosystem embracing....specific social structures both formal and informal, that do not themselves contain the developing person but impinge upon or encompass the immediate settings in which the person is found, and thereby delimit, influence or even determine what goes on there.” The workplace, local school board etc. forms the formal structure and the parent’s social networks-friends and extended family members who provide advice, companionship and even financial assistance, form the informal structure. Research has confirmed that a breakdown in the exosystem has a negative impact on the developing individual. (child abuse and parent child conflict)

- 4. Macrosystem** According to Bronfenbrenner, *“The Macrosystem consists of the overarching pattern of Microsystem, mesosystem and exosystem characteristic of a given culture, subculture, or other broader social context, with particular reference to the developmentally-instigative belief systems, resources, hazards, life styles, opportunity structures, life course options, and patterns of social interchange that are embedded in each of these systems. The Macrosystem may be thought of as a societal blueprint for a particular culture, subculture and other broader social context.”* The effects of larger principles defined by the Macrosystem have a cascading influence throughout the interactions of all other layers, and gradually filter down in countless ways to individual’s daily lives. Natural disaster may destroy the home, schools, or other Microsystems of a person or a group of developing people or may make certain necessities of life (like food or clean fresh water) less available. The prevailing cultural beliefs too can influence the developing child in many ways. As for instance, cultural belief about the appropriateness of breast feeding and about when weaning from the breast

should occur affects not only the nutritional status of the child but because mother's milk may make some children less likely to develop allergies later in life, it can also affect their health status. Values about child rearing or role of children in society can affect the behaviors developed by a child and can even have implications for whether the child survives. The macrosystem also involves the macro institutions such as the government and public policies etc. and can also be thought of in terms of global influences.

- 5. Chronosystem** The chronosystem encompasses the dimension of time. Time has a prominent place in the micro, meso and macrosystem of the ecology. According to Bronfenbrenner, time constitutes of **micro time**, **meso time** and **macro time**. **Micro time** refers to the continuity versus discontinuity within ongoing episodes of proximal processes. **Meso time** is the periodicity of these episodes across broader time intervals, such as days and weeks. Finally **Macro time** focuses on the changing expectations and events in the large society, both within and across generations as they affect and are affected by processes and outcomes of human development over the life course. For Bronfenbrenner chronosystem refers to the temporal changes in the child's environment which produces new conditions that affect development. These changes can be imposed on the child- such as the birth of a sibling, the beginning of school, parents' divorce etc. Alternatively they can arise from within the child, since as children get older they select, modify and create many of their own settings and experiences. How they do so depend on their physical, intellectual and personality characteristics and their environmental opportunities. Therefore according to the Bioecological Theory of Development, an individual is both the product and producer of its environment.

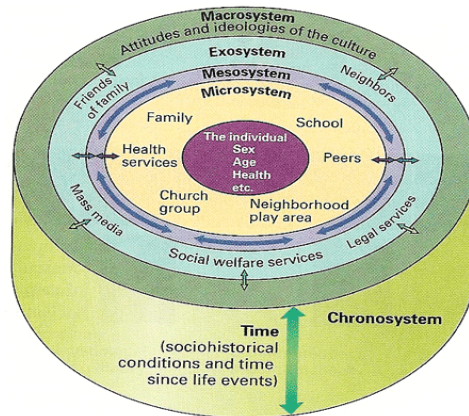
As a consequence of the integration of the above five levels, the regulation of development occurs through mutually influential connections among all levels of the developmental system ranging from genes and cell physiology through individual mental and behavioral functioning to society, culture, the designed and natural ecology and ultimately history. This integration may either facilitate or constrain opportunities for development depending upon its temporality and plasticity.

Bronfenbrenner's Formula of Development

According to Bronfenbrenner Development can be represented as:

$$D_t = f_{(t-p)}(PE)_{(t-p)}$$

In the given formula 'D_t' refers to **development reached at a certain time**. (t-p) refers to the **period or periods during which the joint forces emanating both from the person and the environment operate overtime to produce the outcome existing at the time of observation**. (t-p) appears not only for (PE) but also for the operator 'f'. This means that the process producing development change is not instantaneous, but one that takes place overtime and like other terms in the equation can change overtime. For instance academic achievements of an individual at a given point of time are the result of interaction between the individual and educational institution and educational institution and individual's family over an extended period of time.



Bronfenbrenner's ecological model of the environment as a series of nested structures. The microsystem refers to relations between the child and the immediate environment, the mesosystem to connections among the child's immediate settings, the exosystem to social settings that affect but do not contain the child, and the macrosystem to the overarching ideology of the culture. (Google image p.1.)

Principles of the Bioecological Theory of Development

Urie Bronfenbrenner stated six principles of the Bioecological Theory of Development:

- The child is at the centre of the model.
- The model acknowledges that a child affects as well as is affected by the settings in which it spends time.
- The most important setting for a young child is the family, because that is where it spends most time and because it has the most emotional influence on it. Other important settings include the child's extended family, early care centers, education programmes, health care settings, neighborhood, libraries, playground etc.
- A child's development is determined by what it experiences in these settings it spends time in. Is someone showing the child appropriate ways to

behave? Is someone talking and reading with the child? Is someone providing materials for the child to play with?

- The number and quality of connections between the settings in which the young child spends time (for example, family and preschool) also have important implications for his/her development. For example, Do his parents and teachers communicate with one another? Do they have similar expectations of him?
- Other environments where the child doesn't spend time can also affect the power of proximal processes to influence development. These can include both more immediate factors (example, the parent's workplace or community mandates) and more remote ones (example, flaws).

Five Propositions Describing the Processes for Positive Development

Urie Bronfenbrenner laid out five propositions that describe the processes that foster development of human competence and character. At the core of these principles is the child's emotional, physical, intellectual and social need for ongoing, mutual interaction with a caring adult-and preferably with many adults. When asked about the application of these principles he stated,

"I am sometimes asked up to what age do these principles apply. The answer is debatable, but I would say anytime up to the age of, say, 99."

- **Proposition 1** In order to develop- intellectually, emotionally, socially and morally- a child requires participation in progressively more complex reciprocal activity, on a regular basis over an extended period in the child's life, with one or more persons with whom the

child develops a strong, mutual, irrational, emotional attachment and who is committed to the child's well-being and development, preferably for life.

- **Proposition 2** The establishment of patterns of progressive interpersonal interaction under conditions of strong mutual attachment enhances the young child's responsiveness to other features of the immediate physical, social and in due course, symbolic environment that invite exploration, manipulation, elaboration and imagination. Such activities, in turn, also accelerate the child's psychological growth.
- **Proposition 3** The establishment and maintenance of patterns of progressively more complex interaction and emotional attachment between caregiver and child depend in substantial degree on the availability and involvement of another adult, a *third party* who assists, encourages, spells off, gives status to, and expresses admiration and affection for the person caring for and engaging in joint activity with the child.
- **Proposition 4** The effective functioning of child-rearing processes in the family and other child settings requires establishing ongoing patterns of exchange of information, two-way communication, mutual accommodation and mutual trust between the principal settings in which children and their parents live their lives. These settings are the home, child-care programs, the school and the parents' place of work.
- **Proposition 5** The effective functioning of child-rearing processes in the family and other child settings requires public policies and practices that provide place, time, stability, status, recognition, belief systems, customs and actions in support of child-rearing activities not only on the part of parents, caregivers, teachers and other professional personnel, but also relatives, friends, neighbors, co-workers, communities, and the major

economic, social and political institutions of the entire society.

Practical Application from Educational Point of View

- Teachers should have knowledge of psychology of individual differences.
- There should be a close connection between educational institutions and families, which should be built through formal and informal outreach.
- Teachers have to take account of the child's background in terms of- family's socio-economic status, culture, community, as well as personal qualities, interest etc and extend help in accordance. For this teachers will have to examine the micro and macro dimensions of the pupils.
- The teaching learning process should be experiential and interactive.
- Developmentally appropriate educational plans.
- Encourage socialization among children.
- Keep class size small to help teacher pupil interaction.
- Provide experience pertaining to the physical, emotional, social and cognitive domains. As all the domains are highly related and builds on each other, lack of experience in any one domain might lead to future problems.
- Since the child is also responsible for its own development, parents and teachers will have to take account of the child's interest, attitude, temperament etc. in choosing a course of learning.
- While conducting research the child should be considered in its wholeness of self and ecological systems.
- Experiences within educational institutions will have to be made pleasant as far as possible.

- Educational institutions should try to bring the family and community close to each other, so that community resources can be used for children's betterment, especially in case of those belonging to poor families.
- In today's world where relationships are breaking down, it is necessary for schools and teachers to provide support for stable, long term relationships between children and parents, mentors/teachers. School and teachers should work to support the primary relationship and to create an environment that welcomes and nurtures families.
- Teachers, students and principles should work in cohesion to improve the teaching learning process of the school.
- Since presently much emphasis is given on online and distance education, this theory can help researchers to study its impact on a child's development.
- Educational policies should not be simply enforced from top but it should be formed in collaboration with representatives from the grass root level.

Critical Evaluation

As mentioned in the beginning, Bronfenbrenner's Bioecological Theory of Development was in itself in a continual state of evolution. True to this own verdict on influence, a number of influences are discernible in his theory- Kurt Lewin's Field Theory, Lev Vygotsky's Socio cultural theory, Roger Barker's and Wright's Environmental Psychology, Bowlby's Attachment Theory, Piage's Theory of Cognitive Development, Bandura's Social Learning Theory, Carl Rogers theory of Experiential Learning. Imperfection is nothing but natural, as such the Bioecological Theory too has its merits and demerits, which are discussed as follows:

Merits

- The theory considers the child in its wholeness-biopsychosocial.
- Studied the child in context of the various ecological systems as well.
- Emphasized the need of studying/observing the child in natural settings.
- Drew attention to connections between environmental settings and bidirectional influences between ecological settings.
- Took into consideration the sociohistorical influences (both past and present) on development (both individual and environment).
- Suggest ways to optimize development.

Demerits

- The theory overlooks step by step developmental changes.
- The theory does not specifically mention the biological contributors.
- Lack of focus on normative development.
- The theory appears to be more a framework for conducting research on child development rather than a developmental theory.
- Too much of emphasis on ecological systems.
- The theory speaks nothing in detail about the cognitive processes.

Conclusion

Bronfenbrenner's Bioecological Theory of Development provides insight not only on the external factors but also on the internal factors that play a role in the development of individuals. He considers not only layers of ecology but also the various systems- social, cultural, economic and political- within the ecology and its impact on human development. In spite of the

various ecological systems discussed, Bronfenbrenner puts much emphasis on the immediate microsystem (family) of the child. According to him, if the relationships in the immediate microsystem break down, the child will have no tools to explore the other parts of the environment. Children looking for the affirmations that should be present in the child-parent/child/other important adults- relationship look for attention in inappropriate places. These deficiencies will show itself gradually as the child makes ecological transitions in the form of anti-social behavior, lack of self discipline and self-direction. He stressed the need for various intervention programmes at the macro level as it is sure to have an impact at the micro level.

Children and youth need to be provided with opportunities to develop their capacities to the fullest, then only they will grow into responsible adults capable of bringing about future positive development and change in the society, otherwise the society will become disorganized and eventually meet its end.

The theory also stresses the need of behaving well with children and with each other as it tends to have a lasting impact on their future relationships and adjustment. The theory is a call to all individuals, parents, teachers, community and society at large to work together towards building a nation of success, good health, love and respect.

Though the theory centers round child development, yet it can be used to study the individual development at any stage of life in context.

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