Learning Task 4: Group Research Paper

Kelly Elker, Alia Siddiqi, and Brad Mellor

University of Calgary

**Introduction**

The bioecological model developed by Urie Bronfenbrenner serves as an integrated framework for understanding the connections between an individual, including their biological, socio-emotional, and cognitive characteristics along with the diverse social and cultural contexts in which an individual progresses (Zhou and Brown, 2015). This model examines how an individual’s surrounding environment influences their life. The bioecological model is beneficial to educators and counsellors as it examines how an individual is influenced by multiple external factors. The strengths of this model serve as a guide to help us understand how an individual develops and learns through a complex system. The bioecological can be readily applied to readily world problems as well. Bronfenbrenner's’ systems approach allows practitioners, researchers and community activists to develop interventions that carter to the different bioecological systems the individual interacts with. However, the bioecological model has undergone criticism as academic research continues to find issues and complexities within the model as Bronfenbrenner was continually re-assessing, revising as well as regretting and renouncing his earlier work (Tudge, Mokrova, Hatfield, & Karnik, 2009). Future research would be beneficial as confusion lies upon which version of the theory should be applied.

Bioecological Model

Urie Bronfenbrenner main focus was on child development and the different systems in our environment that influence our growth (Zhou & Brown, 2015). Bronfenbrenner emphasized the importance of the multiple environmental contexts a child interacts with, thus the development of his bioecological model (Zhou & Brown, 2015).  This model can be broken down into 5 different systems with the individual in the center of the model (Zhou & Brown, 2015). The first system is the microsystem, this is the system that individual interacts with the most (Zhou & Brown, 2015). This system includes the person families, peers, schools or community environments (Zhou & Brown, 2015). It is in the microsystem the child develops his/her characteristics, temperaments, habits and so forth (Shaffer & Kipp, 2007). In this layer, this is a bi-directional influence, in which the environment influences the child and the child influences the environment (Shaffer & Kipp, 2007). For example, a child with a temperament will greatly affect the family dynamics (Shaffer & Kipp, 2007).

The second layer is the mesosystem, this consist of the interaction between the different microsystems in a person's life. For instance, this is the interaction between school and family, friends and family or family and religious institutes (Zhou  & Brown, 2015).  Bronfenbrenner says development is optimal when the interactions with the different microsystems are supportive and positive (Shaffer & Kipp, 2007).

The third layer is the exosystem, the individual does not interact with the contexts of this system but is still greatly influenced by the changes that occur within it (Zhou  & Brown, 2015). Exosystem is usually comprised of neighborhoods at large, mass media, legal services, school boards, parent’s workplace and extended family (Zhou & Brown, 2015). Children do not interact with their parent’s place of work but changes that occur at a parent’s workplace such as a lay off greatly affect the home environment of the child (Shaffer & Kipp, 2007).

The fourth layer is the macrosystem, it is the layer that includes ideologies, cultures, and economies of the countries people live in (Zhou & Brown, 2015). For example, if a country is going through a recession then food prices will increase which will affect the amount of food coming into the home of the individual.

The last system is the chronosystem, this system includes life events, biological and socio-historical changes that occur in a person's life (Zhou & Brown, 2015). For example, the birth of a sibling will change the family structure. Bronfenbrenner bioecological theory encompasses the different environmental influences in a person life.

Bronfenbrenner then later developed his theory to include and define proximal processes as a major component of development (Tudge et al., 2009). This later model would be discussed as the Process-Person-Context-Time model and each part of the PPCT model can be understood as interrelated concepts (Tudge et al., 2009). Proximal processes of human development can be thought as interactions between humans, a human and objects or symbols in their immediate, surrounding environment (Bronfenbrenner & Morris, 1998). A common example Bronfenbrenner used to explain this concept is a young child playing with either another child, solitary play, reading books or even interacting with media such as a television (Tudge et al., 2009).

Bronfenbrenner included genetic aspects and personal characteristics a person brings into social situations (Bronfenbrenner & Morris, 1998). Such characteristics are referred to as demand (stimulus to others such as age, gender, skin color and appearance), resource (emotional and intelligent resources, access to basic needs, family, education) and force (temperament, motivation, persistence) (Tudge et al., 2009).

Bronfenbrenner included his previous ecological model and four interrelated systems as his environment or context element of his PPCT model. He continued to expand some aspects of this such as including culture, belief systems and lifestyles (Tudge et al., 2009).

Time is also included as part of the PPCT model, human development and change while divided into three categories of micro-time, meso-time and macro-time (Tudge et al., 2009). Micro-time can be explained as what is happening at a particular moment while meso-time can be seen as consistent activities in a person’s environment such as school or work (Tudge et al., 2009).  Macro-time can be compared with his earlier concept of the chronosystem in which historical events can be related to human development such as economic downturns such as the Great Depression (Tudge et al., 2009).

**Usefulness in Education and Counselling**

The bioecological model has a tremendous influence on various topics in educational and developmental psychology (Zhou & Brown, 2015). It has provided an alternative model of accountability in education and offers a new perspective that can enhance our overall understanding of families (Swick & Williams, 2006). The bioecological model is useful in teaching and the counselling profession as it looks at all the factors in an individual’s life that affects their development (Guhn & Goelman, 2011). By looking at the whole individual, we will gain a better understanding of all the direct influences in their life that affect learning and development.

**Education**

“Central to the bioecological theory is its objective to contribute to producing knowledge that is applicable for the benefit of children” (Guhn & Goelman, 2011, p. 205). This model looks all the indicators that affects the child’s learning and development, such as gender, age, school readiness, socioeconomic status, and neighbourhood factors (Guhn & Goelman, 2011). Educators can use this model to better serve their students as their environment is composed of layers of systems which all interact in complex ways and can heavily affect a person’s development (Johnson, 2008). First of all, teachers should get to know their students on a personal level and get to know their microsystems, such as their family and friends (Johnson, 2008). Teachers can encourage positive peer relationships, empower student’s confidence to increase their success, and encourage student participation within the school. Secondly, teachers can reach out to students’ mesosystems by regulating keeping in contact with their parents (Johnson, 2008). Teachers can try and regulate this system by setting up meetings, sending emails, and make phone calls home to update parents. Finally, teachers can help students reach out to their ecosystem within their communities (Johnson, 2008). Teachers can learn about where students can go if they need assistance with social, legal or health care services, such as mental health care facilities or shelters.

**Counselling**

        “The bioecological model offers an insightful lens for understanding and supporting families” (Swick & Williams, 2006). Counsellors find this approach helpful in understanding family members because it examines all systems in which families are enmeshed and it reflects the dynamic nature of relationships that families have on each other (Swick & Williams, 2006). Counsellors must be aware of the client microsystem and especially if they are working with a child as this core entity stands venue for initially learning about the world (Swick and Williams, 2006). Counsellors can help families developing caring and loving microsystems as they provide parents and children the tools to work together and develop bonds that help them be more responsive to stress (Swick & Williams, 2006). Secondly, counsellors can support clients and families by helping them reach out to their mesosystem to help them better respond to the stressors in their lives (Swick & Williams, 2006). For example, a client can connect with extended family members and develop a dialogue for positive change. Thirdly, counsellors can assist families in becoming more educated and confident in their exosystem relations (Swick & Williams, 2006). Counsellors can educate parents on how to find and use childcare, social, legal, and health services. Next, counsellors can help families and clients advocate for stronger family support policies and people in their macrosystem contexts (Swick & Williams, 2006). For example, assist families in voting for city council members who have family friendly policies. Finally, counsellors can assist families in learning the dynamic relationships in their chronosystem (Swick & Williams, 2006). Counsellors can do this by helping families learn from their past family histories.

Overall, Bronfenbrenner’s bioecological model is very useful in both the teaching and counselling professions as it assists students and clients understand the impact that each system has on their personal development and identity.

**Strengths of the Bioecological Model**

        This integrated model serves as a framework for research and practice and reminds educators and counsellors to treat an individual as a whole within a complex social system (Zhou & Brown, 2015). The bioecological model strives to ensure that optimal growth and development occur in every student or client. Furthermore, it acknowledges that learning and cognitive development progress through social and cultural systems in which the individual is directly influenced (Zhou & Brown, 2015). The bioecological model acknowledges that human development is also varied by internal and external sources that varies as a function of the social and cultural context in which people are situated (Rosa & Tudge, 2013). By not only examining the individual, this model also looks at all social contexts plus structures like religion, workplace, and government influences that affect the student or client. Not only does the bioecological model provide a framework for research in education, it also provides a model of intervention and practice in working with individuals that have suffered trauma and natural disasters (Hoffman & Kruczek, 2011). This systems’ approach allows for conceptualization and response at an individual, family, community and societal level as well (Hoffman & Kruczek, 2011). Looking all at of the levels that directly impact an individual helps move the change process and optimizes development and growth. The bioecological model also examines multicultural variables which promote growth, resilience and social justice by informing individuals of public policy’s (Hoffman & Kruczek, 2011). Using the bioecological model of development is beneficial because it recognizes that learning and cognitive development progress through many interrelated systems that looks at the individual as a whole.

**Application to Real-World Problems and Interventions**

The bioecological model is a framework, which breaks down how each system affects a person. It describes the interplay of relationships within the systems and the relationship between systems. Thus, this model allows researchers, politicians, school-boards, counsellors and so forth to see how real-world problems are created and what interventions these different systems put into place to help everyday people. Newman and Newman (2007) state that we can develop intervention to change behaviours by asking questions like “where does the behaviour take place?” “How does context encourage or discourage behaviours?” and “What related systems influence the behaviours?” The bioecological model is thoroughly applied to creating interventions for child development and families.

**Family poverty**

The microsystem is inductive of the individual’s family. The family plays an important role in a child’s life. When parents go through stressors it affects the family system on a whole (Swick & Williams, 2006). Swick and Williams (2006) looked at the different stressors families go through and how early childhood educators could help alleviate some of the stress, for example, helping children living in poverty. The microsystem is greatly affected by poverty; children may lose out on support from the community because it is too expensive, they may have low self-esteem because of their living situations, they also may have to deal with high-stress from their parents because of their financial situation (Swick & Williams, 2006).  Swick and Williams (2006) say that early childhood educators can keep in contact with parents by explaining to them their child’s daily routine at school. The early childhood educator can also help with creating nurturing environment for students by developing snack and lunch programs so that the child receives adequate nutrition (Swick & Williams, 2006).  Educators can also become advocates, they can push for more low-income housing and call for the development of more policies for families that are homeless by participating in the activities in the macrosystem such as going to city council meeting (Swick & Williams, 2006).

**Adolescent Drug Abuse**

          There are many interventions developed for drug and alcohol abuse. Interventions are best developed for adolescents when all system levels are targeted (Bergin & Bergin, 2012). For example, Bergin and Bergin (2012) say interventions should look at the microsystem of the teenagers specifically if there is drug abuse happening within a family system.  Ecology-based family therapy is usually used with teenagers who are abusing drugs and alcohol (Sullivan, 2017). This therapy looks at how social context is maintaining behaviours (Sullivan, 2017).  The goal of this therapy is to develop a better bond at the microsystem level with family member by teaching families how to communicate and cope. Bergin and Bergin (2012) also state that caring school intervention should be developed. They say that caring school should involve developing a community where students with drug abuse feel like they have an outlet at school to talk about their problems (National Crime Prevention Center, 2009). Schools should also develop prevention intervention programs for drug abuse in which student are taught how to oppose peer influences and have the opportunity to develop positive experience with the school (National Crime Prevention Center, 2009). At the excosystem level, there should be the development of community intervention to alter the acceptance of drug use. (Bergin & Bergin, 2012). Altering acceptance would be combating poverty in poor areas, controlling the access of drugs on the street through police presence and developing after-school programs for the youth (Bergin & Bergin, 2012).

**Childhood bullying**

The bioecological model also assists with the development of intervention programs for bullying. Espelage (2014) says that the different levels of a child’s bioecological system can be educated and trained in bullying prevention. Bullying is a “peer group phenomenon” in which individuals ecological setting foster bullying instead of preventing it (Hawely &Williford, 2015). In the exosystem school boards can create programs that train educators and other professional on signs of bullying and how to intervene (Espelage, 2014). Hawely and Williford (2015) state that interventions should also be based on staff member’s attitude and perception of bullying because the school’s culture is affected by belief and values of staff member’s.  In the microsystem students and teachers have to be taught prosocial behaviours and develop an understanding of how to tackle bullying (Espelage, 2014). For example, teachers can teach students on how not to be a bystander and what they could do to help a peer being bullied (Espelage, 2014). In addition, administrators should pair up with community organization that targets bullying to teach not only staff and students about bullying but also parents (Espelage, 2014). Parents have to be taught on how to talk to their child that is being bullied by having open-ended conversation and what measures parents can take when their child is being bullied (Espelage, 2014).

**Limitations of Theory**

Bronfenbrenner’s theories spanned over many decades of research (Darling, 2007). Much of his work can be categorized in several phases and as a result this has caused several academic complexities and issues regarding research. His initial theory, ecology of human development (1979) continued to evolve into his bioecological development theory (1998) which eventually defined his proximal processes and his Process-Person-Context-Time model (Rosa & Tudge, 2013). Bronfenbrenner eventually critiqued his own work regarding his ecological model as it discounted the role of the person and placing too much focus on context (Tudge et al., 2009). Tudge et al. (2009) explain that conceptual incoherence is a likely result of having two theories. A major concern with existing literature and having two theories is which version should be applied? Many introductory textbooks on child development include Bronfenbrenner’s ecological theory which illustrates a visual diagram of a child at the center of several rings that represent the microsystem, mesosystem, exosystem, and macrosystem (Darling, 2007). However, Bronfenbrenner continued to improve past this model. Regardless of this improvement, current research continues to use early models such as the ecological theory and neglects including the Process-Person-Context-Time model (Rosa & Tudge, 2013). Rosa and Tudge (2013) argue that this neglect of later models affects the overall empirical evidence and integrity of his overall theory.

Tudge et al. (2009) argue that much of Bronfenbrenner’s work is academically misused as earlier models are often the basis of research and not his most recent and current models. It was found that only 4 out of 25 papers published since 2001 have been based off Bronfenbrenner’s most current models (Tudge et al., 2009). Empirical studies that uses older less mature models mislead students and researchers about the theory and prevents any fair testing (Tudge et al, 2009).

        Another issue that Bronfenbrenner’s theory has faced is misrepresentation being based within a mechanist paradigm. The idea of humans interacting within a system of machines can be thought of as unnatural (Tudge et. Al, 2016). Within the ecological model, the child is surrounded by the microsystem, macrosystem, exosystem and chronosystem (Zhou & Brown, 2015). The mechanic structure of the ecological model doesn’t truly reflect natural dynamics that are met within a human’s lifespan (Tudge, et al., 2016).

        A misinterpretation of Bronfenbrenner’s Ecological Systems Framework is the continued comparison and metaphor of a matrioshka Russian doll (Rosa & Tudge, 2013). In early versions of his theory the person was the center of several systems ranging from close proximity and context to outer rings of attitudes, ideologies and culture (Zhou & Brown, 2015). Even Bronfenbrenner compared this model to Russian dolls (Tudge et al., 2009). Rosa and Tudge (2013) explain that this metaphor misleads the interrelated connection to each system. The microsystem for example isn’t just an outside ring found beyond the microsystem but actually between or among microsystems (Rosa & Tudge, 2013).

        Christensen (2000) argues that Bronfenbrenner misses the important personal characteristics such as the drive and ability of the individual. To better understand an individual, it’s important to describe the individual outside of the context of their relationships and how each Bronfenbrenner’s systems interact with the individual (Christensen, 2000). Paquette & Ryan (2001) also mention limitations regarding the individual within the microsystem and family construct. The individual’s own conditions should be included and how they create success within this microsystem (Christensen, 2000). Another important individual trait that Bronfenbrenner may have overlooked is human resilience (Christensen, 2000). Human resilience demonstrates a person’s capacity to overcome adversity and reach and obtain goals with grit and perseverance (Christensen, 2000). Bronfenbrenner’s theory could include resilience and demonstrate a person’s ability to overcome trauma, tragedy and to understand how many people overcome negative environments (Christensen, 2000).

**Further Research**

        There are several areas that could benefit from further research. Bronfenbrenner’s models could expand the role of international concepts including globalization (Christensen, 2000). The Exosystem lacks mention of an international level which is becoming more of a factor as the world faces issues such as global warming, high population, degradation of the environment and migration patterns (Christensen, 2000). Environmental, global and historic socio-political events over a lifetime does affect the individual (Christensen, 2000).

        Bronfenbrenner’s theory could expand in regards to the inclusion on non-western societies. In early models Bronfenbrenner placed more emphasis on proximal processes such as the microsystem over the macrosystem and wrote little on culture, values, laws and customs until much later (Tudge et al., 2009). Although some aspects of culture is included in his work, his models lack indigenous perspective and influence (Manning, 2009). Macfarlane (2000) argues that the New Zealand Maori understood the circling social system in their own culture that can be compared with Bronfenbrenner’s ecological systems theory. An indigenous perspective that could be included in future versions of the bioecological theory is an understanding that humans from indigenous backgrounds globally, interact with both a natural and spiritual world (Manning, 2009). By incorporating a more comprehensive spiritual aspect, Bronfenbrenner’s models could become more inclusive to a spiritual understanding of indigenous beliefs.

**Conclusion**

The bioecological model has had a profound influence on education, counselling, and the overall comprehension of development and learning in individuals. This complex, interrelated framework serves as a model to emphasize that individuals learn through many systems that directly influence cognitive abilities.

The bioecological model has allowed for the development of specific intervention for each system that plays a roles in a person life. The model breaks down what interventions should be in place for each system. This theoretical framework has helped with the development of interventions for children, adolescents and families who struggle with poverty, drug abuse and bullying.

As Bronfenbrenner’s developing theories spanned several decades, this may have caused some unintentional limitations such as a lack of consistency on which model to use in research Academic misinterpretations have also resulted from its mechanist paradigm and matrioshka doll metaphor. Further research could include ideas such as globalism and indigenous perspectives. Overall, the bioecological has served as an outstanding model to assess and learn about human development.

References

Bergin, D. A., & Bergin, C. A. (2012). *Child and adolescent development in your classroom*.     Belmont, CA: Wadsworth Cengage Learning.

Bronfenbrenner, U., & Morris, P. (1998). The ecology of developmental processes. In W. Dam & R. M. Lerner (Eds.), *Handbook of child psychology, Vol. 1: Theoretical models of human development* (5th ed., pp. 993-1023). New York: Wiley.

Christensen, J. (2016). A critical reflection of bronfenbrenner's development ecology model. *Problems of Education in the 21st Century*, *69.* 22-28.

Espelage, D. L. (2014). Ecological theory: Preventing youth bullying, aggression, and      victimization. *Theory into Practice, 53*(4), 257-264.DOI:10.1080/00405841.2014. 947216

Guhn, M. & Goelman, H. (2011). Bioecological Theory, Early Child Development and the Validation of the Population-Level Early Development Instrument. University of British Columbia, Vancouver. pp. 193-217.  DOI: 10.1007/s11205-011-9842-5

Hawley, P. H., & Williford, A. (2015). Articulating the theory of bullying intervention   programs: Views from social psychology, social work, and organizational science.  *Journal of Applied Developmental Psychology, 37*, 3-15. DOI:10.1016/j.appdev.2014.11.006

Hoffman, M.A, & Kruczek, T. (2011). A Bioecological Model of Mass Trauma. *The Counselling Psychologist*, *39*(8). pp. 1087-1127. DOI:10.1177/0011000010397932

Johnson, E. (2008) Ecological systems and complexity theory: toward an alternative model of accountability in education. *Complicity: An International Journal of Complexity in Education*, *5*(1). pp. 1-10. Retrieved from http://go.galegroup.com.e zproxy.lib.ucalgary.ca/ps/i.do?p=AONE&u=ucalgary&id=GA E|A320734681&v=2.1&it=r&sid=summon

Liddle, H. A., & Hogue, A. (2000). a family‐based, developmental‐ecological preventive    intervention for high‐risk adolescents. *Journal of Marital and Family Therapy, 26*(3), 265-279. DOI:10.1111/j.1752-0606.2000.tb00297.

Manning, R. F. (2017). Place-conciousness and bronfenbrenner's ecological systems model: a discussion of recurring issues that undermine the teaching of indigenous histories in new zealand and australian schools. *The Australian Journal of Indigenous Education*.

National Crime Preventions Center. (2009). *Public Safety*. Retrieved from Public Safety Canada:https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/sclbsd-drgbs/sclbsd-drgbs-eng.pdf

Rosa, E.M, & Tudge, J. (2013). Urie Bronfenbrenner’s Theory of Human Development: It’s Evolution from Ecology and Bioecology. *Journal of Family Theory and Review*, 5(4). 243-258. DOI: 10.1111/jftr.12022

Shaffer, D. R., & Shaffer, D. R. (2001). Chapter 2 Theories of Human Development. In *Developmental psychology: childhood and adolescence*. pp. 39-73. Australia: Wadsworth Thomson Learning.

Sullivan, T. (2017). Ecological Theory. In J. Carlson & S. B. Dermer (Eds.), *The SAGE  encyclopedia of marriage, family, and couples counseling*. Thousand Oaks, CA: SAGE Publications, Inc.

Swick, K. J., & Williams, R. D. (2006). An analysis of bronfenbrenner's bio-ecological perspective for early childhood educators: Implications for working with families experiencing stress. *Early Childhood Education Journal, 33*(5), 371. DOI:10.1007/s10643-006-0078-y

Tudge, J., Mokrova, I., Hatfield, B., & Karnik, R. (2009). Uses of misuses of bronfenbrenner's bioecological theory of human development. *Journal of Family Theory & Review*, 198-210. DOI:10.1111/j.1756-2589.2009.00026.x

Tudge, J., Payir, A., Mercon-Vargas, E., Cao, H., Liang, Y., Li, J., & O'Brien, L. (2016). Still misused after all these years? a reevaluation of the uses of bronfenbrenner's bioecological theory of human development. *Journal of Family Theory and Review*, *8*(4), 427-445. DOI: 10.1111/jftr.12165

Zhou, M., & Brown, D. (2015). *Educational Learning Theories.* Education Open Textbooks. Retrieved from http://oer.galileo.usg.edu/cgi/viewcontent. cgi?article=1000&context=education-textbooks