



Research Paper

Human Developmental Science in the Perspective of Metatheory

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Abstract

Aim: Human developmental science is not limited to expressing hypotheses, theorizing and empirical investigation. Metatheories of this science, also, affect result interpretation, and educational applications. The study aimed to examine human developmental science in the light of its existing metatheories. Proportion between metatheories and theories which is the basis for educational policies and instructional applications is one of the requirements for optimal human development. Thus, we used descriptive-analytical method to explain different kinds of human developmental metatheories including split metatheory and process-relational metatheory. Split metatheory depicts the world as aggregates of dichotomous polarities, but process-relational metatheory depicts the world as systems of dynamic, changing and reciprocal part-whole relations. In process-relational metatheory, polarities interpenetrate each other and each pole defines and is defined by the other. Moreover, within this metatheory, the whole is an organized system of parts; each part is defined by its relations to other parts and to the whole. Thus, the whole is not greater than the sum of its parts, but it is different from them. New advancements in developmental science reduced the 300-year-old influence of this metatheory through Cartesian split anomalies, and replaced it with process-relational metatheory.

Keywords: *Cartesian split metatheory, Developmental science, Human developmental metatheories, Process-relational metatheory, Worldview*

Introduction

The scope of human development has gone beyond developmental psychology and has changed into developmental science. Human developmental science seeks to describe, explain, and optimize (Lerner and Lerner, 2019; Lerner et al., 2013) intraindividual changes and interpersonal differences throughout life span (Lerner and Kallina, 2013) to understand and explain the developmental processes and adaptive changes (Overton, 2018; Lerner, 2012). Contemporary developmental scientists place human development on individuals' bidirectional relations with their context (Lerner et al., 2018). Developmental science focuses on the study of regular and continuous changes in these relations and on the integration and differentiation of the multiple characteristics of individuals at multiple levels (Brunfenbrunner and Morris, 2006; Overton, 2013). To help avoid conceptual ambiguities and adopt inappropriate methods (Overton, 2015), scientific discourse has been used in developmental research. Worldviews are fundamental metatheories that guide the study of human development and influence the interpretations of these studies. Metatheories the foundation of developmental science ground, constrain, and sustain theoretical and observational levels of concepts (Overton, 2014a). Given the importance of human development, it should be asked what its metatheories and their features are.

Methodology

This study used descriptive-analytical method to inspect into the sources for the metatheories of human development. This method first examines the essence of the phenomenon, and compiles its features. The researcher should then go beyond this information, and investigate their whyness, howness and comparison. In fact, in this method, the researcher achieves a deep understanding of a phenomenon (Sebunje, 2021; Lob et al., 2017). We collected the documents and sources related to metatheories of human development. Then we extracted the definitions and described the characteristics of metatheories, and compared and analyzed their ontological, epistemological and anthropological bases

Results

Human developmental science has two metatheories: the Cartesian split and process-relational metatheories. In Cartesian worldview, the basic phenomena of the world are divided into dual independent elements or "either/or" propositions. Its principles are splitting, foundationalism, atomism, and the linear association. In process-relational metatheory, the

world is a dynamic and changing system of relations of whole and parts, which occurs through mutually regulative relations between the organism and its context of life (Lerner, 2012). In the relational metatheory, the living organism is described as an inherently active, self-creating, self-organizing, and self-regulating system, relatively plastic and with a complex nonlinear adaptive system that grows through the activities and actions internalized by the system itself in a physical socio-historical and active world. Through positive and negative feedback loops created by the system's organized actions, this growth leads to an increase in the differentiation, and complexity of the system, which is directed towards adaptive ends. Relational ontology considers reality based on the principles of process, activity, dialectical change, formation, and organization. Relational epistemology is relatively inclusive and includes the knower and knowledge as equal, indissociable, and complementary processes in the construction and acquisition of knowledge. Of course, this inclusion can be understood in relation to exclusion. In other words, none of them makes sense without the other. At the heart of the process-relational metatheory is the concept of holism. Holism, refer to objects and events are identified and derive from the relational context in which they are embedded. In this relational context, the components are not separate from one another, but they are the organizers of the components. The whole also possesses system properties that are different from the properties of each component and not larger than the sum of the components, but distinct from them (Overton & Müller, 2013). The epistemological principles of this metatheory are The Identity of Opposites, The Opposites of Identity, and The Synthesis of Wholes. Table 1 compares the epistemological, ontological and anthropological principles of these two metatheories.

Table 1: A comparison of the ontological, epistemological and anthropological principles of the Process-relational and Cartesian-split metatheories, Derived from Javidi Kalate Jafarabadi and Aali (2010)

Process-relational	Cartesian-split-mechanistic
Ontological categories Overton (2014)	
Holism	Atomism
Activity	Fixity
Change—becoming	Stasis—being
Dialectic	
Nature as process	Nature as substance
Necessary organization	Uniformity
Structure-function relations	
Pluralistic universe	Dualistic/monistic universe
Epistemological categories Overton (2014)	

Holism	Reductionism
Constructivism	Realism
Relational understanding	Split understanding
Identity of opposites	
Opposites of identity	
Synthesis of wholes	
Multiple standpoints of analysis	Objectivism vs. subjectivism
Multiple forms of explanation	Efficient/material causation
Formal explanation	
Necessary conditions	
Anthropological categories	
Process-relational	Cartesian-split-mechanistic
Made of biological, psychological, environmental, historical and cultural factors	Made of nature or nurture
Systemic	Dualistic
Self-organized	Organized
Plastic	Strict
Responsible*	Unresponsible
earthly*	Earthly
Historical*	Unhistorically

Discussion and conclusion

Having a worldview as the most general metatheory and its conformity with developmental theories are essential for educational activities and should be addressed by policymakers. Failure to have a certain worldview, and more importantly mismatch between worldviews and theories of human development create conceptual confusion. As these theories form the basis of the educational policies, they generate confusions in the applied realm, as well. The confusion increases to the point that we encounter some educated individuals that are confused about themselves, their purposes, and their path of life. The educational implications of this study are the following: promoting harmony between the monotheistic worldview and educational practices to be applied in the educational system, purposeful planning and designing positive human development according to their plasticity in the context of life focusing on the systemic nature of human development and being influenced when changing programs.

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Human Developmental Science in the Perspective of Metatheory Sheikholeslami & Alavi

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