



Enhancing Theory and Methodology in the International Study of Positive Youth Development: A Commentary

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Abstract

Background Enacting good science in pursuing the international study of positive youth development (PYD) requires using sound developmental theory to formulate questions that are tested through employing rigorous, change-sensitive measures, designs, and data analyses that are aimed at describing, explaining, or optimizing thriving among the diverse youth of the majority world.

Objective We discuss the usefulness of theoretical models derived from relational developmental systems metatheory in framing such science, and we describe innovations in methodology that enable the specific pathways of development of majority-world youth to be understood and enhanced.

Methods Literature review and theoretical commentary.

Results We make recommendations for creating progress in the ways that the international study of PYD may contribute to policies and programs promoting lives of personal thriving and social contributions among the diverse youth of our world.

Conclusions Advances in the international study of PYD rest upon the use of non-reductionist, dynamic, relational theories of human development in the conceptualization of research and upon the use of change-sensitive measures, research designs, and data analysis procedures in the studies derived from such theoretical conceptualizations.

Keywords Positive youth development · Majority world youth · Relational developmental systems metatheory · Specificity principle · Non-ergodicity

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Introduction

Enacting good developmental science involves testing theoretically-predicated questions with appropriate and rigorous methods, that is, change-sensitive designs, measures, and analyses (Baltes et al. 1977; Collins 2006; Lerner 2018). Unfortunately, in the international study of positive youth development (PYD), theory, methodology, research, and evaluation still all-too-often fall short of the laudable aspiration to use good developmental science to build an evidence base enabling diverse young people, arguably especially from the majority world, to thrive (Lerner et al. 2018a, b).

For instance, a United States Agency for International Development (USAID) report (2013) called for rigorous, longitudinal studies of holistic programs aimed at promoting PYD. The report argues that such studies should be framed within a conceptual model applicable to international settings and, as well, should be marked by the use of psychometrically strong measures. Nevertheless, in a 2017 review conducted by YouthPower Learning that was commissioned by USAID to document the application and impact of PYD approaches in low- and middle-income countries, findings indicated that programs promoting PYD were doing so “without a theoretical underpinning or understanding of PYD” (p. 5). In addition, the report noted that there was “a lack of robust and consistent measurement of PYD outcomes” and “few instances of longitudinal studies or evaluations of PYD programs” (YouthPower Learning, p. 40). Accordingly, the authors of the report concluded that there remains “a tremendous need to invest in advancing the field, piloting new strategies, and rigorously evaluating and documenting programs that are being implemented” (pp. 5–6).

The set of articles in this special issue reflect the shortcomings of the international study of PYD noted in both the USAID (2013) and the YouthPower Learning (2017) reports but, as well, provide evidence of scientific progress. We discuss these shortcomings and indications of progress and, in the context of this discussion, provide some ideas about how further progress can be made.

Developmental Theory

In contemporary developmental science, models that are derived from relational developmental systems (RDS) metatheory (Overton 2015) are at the cutting-edge of theory (Lerner 2018). Within RDS metatheory, human development involves universal functions of a living, open, self-constructing (autopoietic), self-organizing, and integrated/holistic system. RDS metatheory is derived from a process-relational paradigm, wherein the organism is seen as inherently active, self-creating (autopoietic), self-organizing, self-regulating (agentic), nonlinear/complex, and adaptive (Overton 2015). In addition, RDS metatheory includes ideas emphasizing that the integration of different levels of organization within the dynamic, developmental system frames understanding of life-span human development (Lerner 2018; Overton 2015). The conceptual emphasis in RDS-based theories is placed on mutually influential relations between individuals and contexts, represented as individual \leftrightarrow context relations.

These individual \leftrightarrow context relations vary across place (e.g., culture) and across time (Elder et al. 2015); the “arrow of time,” or temporality, is history, which is the broadest level within the ecology of human development. History imbues all other

levels with change. Such change may be stochastic (e.g., nonnormative life or historical events; Baltes et al. 2006) or systematic (e.g., history- or age-graded changes), and the potential for systematic change constitutes a potential for (at least relative) plasticity (i.e., the potential for systematic change) across the life span. Such plasticity is regarded as a fundamental strength of human development; it provides a basis for optimism that the course of development for all young people may be enhanced (Lerner 1984, 2018).

The dynamic relations among variables across all levels of organization integrated within the relational developmental system mean that theories (models) that split processes or variables apart (e.g., as in claims that biology, in one form or another, for instance evolution or genes, is the prime determinant of change), as in reductionist models such as sociobiology (e.g., Freedman 1979), behavior genetics (Plomin 2018; Plomin et al. 2016), evolutionary psychology (Buss 2015), evolutionary developmental psychology (Bjorklund 2015, 2016; Bjorklund and Ellis 2005), or in relabeled variants of these positions, such as life history theory (e.g., Del Giudice 2014, 2015), are conceptually flawed (Lerner 2018). They are also empirically counterfactual in regard to the role of genes in evolution (e.g., Jablonka and Lamb 2005; Pigliucci and Mueller 2010; West-Eberhard 2003; Woese 2004) and human development (e.g., Joseph 2015; Lerner and Overton 2017; Moore 2015; Richardson 2017). For instance, that the burden of providing empirical support for the presence of evolutionary-based variation in ontogenetic life history strategies is placed on 1-through-7, Likert-scale responses to a 20-item self-report measure (Figuerdo et al. 2006), with items such as “I often find the bright side to a bad situation” and “I don’t give up until I solve problems,” stretches credulity beyond a reasonable level. Indeed, to claim a genetic basis for such responses (and what else could be claimed if proponents of this position were to explain how evolutions becomes transformed into responses to such items?) is nothing short of scientifically absurd.

Less deeply flawed but nevertheless problematic conceptual issues are also found within the contemporary international study of PYD. Use of the concept of emerging adulthood is a case in point. Terming this concept a “dangerous myth,” Côté (2014) explained that the concept lacks generalizability to the diverse pathways that exist through the late adolescent and early adulthood period, ignores the macrosystem social and economic conditions that may produce *for some youth but not all youth* extended transitions in specific life events (Schoon and Schulenberg 2013), ignores the voluminous developmental science literature specifying the conditions that must be met to define a transition as a stage (e.g., Flavell 1963; Lerner 2018; Wohlwill 1973), and fails to explain what precisely is developed by some people within this purported new stage of development. Moreover, in many instances of the use of the term emerging adulthood, the precise features of behavior and development operationalizing the term are not specified and, as such, the application of the label to specific youth of specific ages living in specific contexts at specific points in history is gratuitous. Indeed, in such cases in the literature, there is no evidence that the label explains anything more than would be explained if the term “young adults” would be substituted.

In sum, if the international study of PYD is going to address the shortcomings of concepts and theories noted by USAID (2013) and YouthPower Learning (2017), the use and testing of models derived from RDS metatheory would place this domain of scholarship more clearly within contemporary developmental science. Of course, there is not and should not be theoretical hegemony in developmental science (Lerner 2018). As such, even if RDS-based models are not used to frame PYD research, advances in the international study of PYD demand the use of theories that involve empirically sound integration of methodologically-rigorous, change sensitive data. We discuss such methods next.

Developmental Methodology

It is obvious that in assessing positive *development*, *developmental* methods must be used. However, in the contemporary, international study of PYD, such methods—which *must be change-sensitive*—are often not used. For instance, we have noted that reviews of the contemporary international PYD research literature (e.g., Lerner et al. 2018a, b; YouthPower Learning 2017) point to the relative lack of longitudinal studies or of longitudinal evaluations of youth development programs aimed at promoting PYD. Indeed, design issues are one of the three facets of developmental methodology that should be discussed in regard to change-sensitivity.

Developmental Design

Development involves intraindividual change and interindividual differences in intraindividual change (Baltes et al. 1977; Lerner 2018). As such, all developmental designs require longitudinal measurement (Collins 2006; Nesselroade and Baltes 1979). However, although at least one of the studies included in this special issue—the Compassion International Study of PYD (e.g., see too Tirrell et al. 2018)—reported data from the initial wave of a longitudinal project from one of the two nations (i.e., El Salvador) currently engaged in the project (the other nation is Rwanda), it remains the case that all the articles reported cross-sectional data. Such data cannot be used to provide *prima facie* evidence of intraindividual change. As a consequence, such data cannot be relied on to provide advances in understanding of within-person change.

That is, the interindividual differences that are elucidated in cross-sectional research may not be due to between-person differences in within-person change. These differences may be due to variables that were either not assessed (e.g., experiential differences among participants, for instance, in histories of participation in out-of-school-time programs) or that, if they exist in the data set (e.g., religious variation, family structure variation, area of residence, or even gender or race) have not been analyzed. This problem—of not being able to account for the basis of interindividual differences in cross-sectional data sets—becomes especially important to recognize when the cross-sectional sample includes groups of different ages. The temptation of treating age group differences as if they reflected age *changes* is often too powerful for researchers to ignore.

However, the temptation should be ignored. As well, designs should include plans for assessment of endogeneity associated with different groups and/or for the approach to variance partitioning recommended by Duncan et al. (2014) regarding the concept of robustness analyses. We return to issues of data analysis in a subsequent section. Here, however, we turn to issues pertinent to developmental measurement.

Developmental Measurement

All measures used in the study of intraindividual change, either as it may occur in the ecologically valid settings of youth development or in relation to youth participation in programs aimed at enhancing facets of positive development, must be able to detect changes, if they exist, across the x-axis points used in a specific study (Lerner 2018). However, it is often the case that measures developed to be *insensitive* to variation across time or place—most notably, measures of purported personality “traits” (e.g., Costa and McCrae 1980; McCrae et al. 2000)—are used to assess intraindividual change.

Such measurement is both conceptually and empirically flawed. There may certainly be good reasons to devise measures that can identify continuous facets of a phenomenon despite variation in either person or context characteristics. For example, devising a radiological measure of jaw bone loss in people of different ages and contextual (e.g., national) settings might be very important in the field of restorative dentistry. However, in the field of human development, wherein the fundamental questions are about changes in the processes of life, measures that are impervious to age- or context-associated variation are useless.

Therefore, in the development of measures, assessment must be made of whether change can be detected across theoretically meaningful divisions of time (x-axis points). Most critically, such change-sensitivity must be identifiable at the individual level of analysis. As we have emphasized (see too Baltes et al. 1977; Lerner 2018), the study of development is the study of intraindividual change. Such within-the-person measures need to possess more than reliability or validity. They must also possess measurement equivalence (invariance) across times of measurement and, if used in studies of groups of people across national settings, they must also possess invariance across people and places (Card 2017). One of the notable strengths of the studies reported in this special issue is the informed use of invariance testing for the measurement models employed by the researchers.

In sum, then, developmentally-useful measures must enable invariant assessment of individual, that is, idiographic, change. This point raises the issue of person-centered versus variable-centered analyses in developmental science.

Developmental Analysis

In developmental science, statistical procedures aimed at the analysis of within-person changes should be aimed first at ascertaining how variables go together within a person across time. Idiographic, person-centered analyses are, therefore, essential starting points in developmental research. In turn, second, analyses can be aimed at ascertaining if aggregation of idiographic developmental pathways across individuals can occur for either subsamples of individuals or for a sample as a whole (Molenaar and Nesselrode 2015).

However, at this writing, the predominant approach to creating evidence in support of the theoretical ideas about the PYD process or of programs aimed at promoting PYD is based on variable-centered assessments. That is, many developmental scientists continue to emphasize appraisals of how variables covary across individuals within points in time. Such analyses, even if conducted at successive points in time for a data set involving repeatedly studied participants, reveal nothing about development (Molenaar 2014; Molenaar and Nesselrode 2014, 2015; Nesselrode and Molenaar 2010; Rose 2016). Such analyses, although reflecting the standard approach to data analysis in the social and behavioral sciences, have no relevance to changes within an individual.

This standard approach to statistical analysis is derived from mathematical assumptions found in the ergodic theorems, ideas that pertain to the constancy of phenomena across people and, critically, time (Molenaar 2014). To explain, consider as a sample case Gaussian (normally distributed) processes. Molenaar (2014) noted that any ergodic Gaussian process has to obey the following two necessary conditions: (1) the Gaussian process has to be stationary (this condition indicates that the mean of the process has to be constant in time, the variance of the process has to be constant in time, and the sequential dependencies characterizing the process only depend upon the relative distance, or lag, between time points); and (2) the Gaussian process also has to be

homogeneous across individuals (indicating that each participant in the population or group has to obey the same dynamic model).

Simply, the assumption used when framing statistical analysis through the use of the ergodic theorem is that the structure of interindividual variation of a developmental process at the population level is equivalent to the structure of intraindividual variation at the individual level (Molenaar 2014; Molenaar and Nesselroade 2014, 2015). These ideas lead, then, to statistical analyses placing prime interest on the population level. Interindividual differences, rather than intraindividual change, are the source of this population information (Molenaar and Nesselroade 2015).

If the concept of ergodicity is applied to the study of human development, then within-person variation across time would either be ignored or treated as error variance. In addition, any sample (group) differences would be held to be invariant across time and place. However, development varies across people and across contexts, and these facts violate the ideas of ergodicity. That is, developmental processes have time-varying means, variances, and/or sequential dependencies. The structure of interindividual variation at the population level is therefore not equivalent to the structure of intraindividual variation at the level of the individual (Molenaar and Nesselroade 2015). Simply, developmental processes are non-ergodic.

As a consequence, to obtain valid information about developmental processes, it is necessary to have as a primary focus of developmental analysis the study of intraindividual variation within single individuals. Towards such analysis, Molenaar and Nesselroade (2015), Nesselroade and Molenaar (2010) have developed statistical procedures, such as the idiographic filter (IF), which involves use of the dynamic factor model at the level of the individual, but then generates group-differential or nomothetic latent constructs to enable generalization across participants. Through use of procedures such as the IF, developmental scientists may capture the non-ergodic nature of intraindividual change and, as well, produce generalities about groups that apply as well to the individuals within them (e.g., see Ram et al. 2005).

To indicate the research implications of this approach, it is important to understand the “specificity principle” (Bornstein 2017). This principle involves researchers asking a multi-part “what” question when conducting programmatic research exploring the function, structure, and content of development of diverse individuals across the life span. For instance, in seeking to understand how diverse youth may have a specific series of individual \leftrightarrow context relations associated with adaptive, healthy, or positive development, researchers might undertake programs of research framed by a multi-part question such as: “What features of positive development emerge; that are linked to what trajectory of individual \leftrightarrow context relations; for youth of what sets of individual psychological, behavioral, and demographic characteristics; living in what families, schools, faith communities, neighborhoods, nations, cultures, and physical ecologies; at what points in ontogenetic development; and at what historical periods?”

Accordingly, through conducting programmatic research addressing such specificity-based questions, the particular ontogenetic sets of individual \leftrightarrow context relations involved in the life of a specific youth may be identified and, as well, the specific relations associated with his or her positive development may be discovered (e.g., Rose 2016). Therefore, one key outcome of such specificity principle-framed research can be the identification of the diverse ways in which individual \leftrightarrow context relations may capitalize on the potential for plasticity in human life and result in adaptive, healthy, or positive development (Spencer et al. 2015).

Conclusions

The international study of PYD is beyond its infancy. However, it still has a long developmental journey ahead of it until it reaches maturity. As we have discussed, to be successful this journey must involve achievements in theory and methodology. However, we believe the pathway forward is clear. Non-ergodic, specificity principle-framed research focusing on the diversity of youth development may be able to identify the specific individual \leftrightarrow context relations linked to PYD for specific individuals or groups of individuals in specific nations at specific times in ontogeny and history. If so, then, developmental scientists could capitalize on the relative plasticity of youth development and assess if, by creating the conditions for such relations among other, similar individuals, more general positive development could be promoted.

The current state of developmental science is one in which theory and methodology are finally catching up to one another, and the time is exactly right for enacting the theoretical and methodological steps we have described. Developmental scientists have theoretical and methodological ideas and tools to enhance their understanding of how their PYD researchers *should* collect and analyze data to generate evidence applicable at the individual level and, as well, actionable in regard to policy and practice for promoting lives of personal thriving and social contribution among the diverse young people of our world.

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