

Invited Commentary: Resilience and Positive Youth Development Frameworks in Developmental Science

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Abstract Positive youth development (PYD) and resilience science differ in emphasis and focus but share many roots, assumptions, concepts, and goals. Both frameworks are grounded in developmental systems theory, both are focused on positive adaptation, and both are translational, sharing a common goal of promoting positive development. Yet there also are differences. This commentary examines the concepts, methods, and goals that define the PYD framework as embodied by the 4-H Study of PYD from the perspective of contemporary resilience science in human development, with an eye toward delineating similarities, differences, and future directions.

Introduction

Developmental science traditions focused on *resilience* and *positive youth development* (PYD) each offer frameworks for research and practice, grounded deeply in the history of developmental science and focused on positive adaptation in developmental perspective. These frameworks and domains of developmental science overlap in history, perspective, and goals. In this commentary, I compare and contrast the frameworks that emerged from these two areas of scholarship, drawing on the aims, findings, and implications of the PYD-guided 4-H Study as presented in this special issue for illustrative examples. PYD and resilience in developmental science have overlapping roots, theoretical concepts, goals, methods, and implications for action. What are the similarities and the differences?

Early in the history of research on resilience in human development, resilience often was described simply as good adaptation or development in the context of risk or adversity. Over the decades, the definitions of resilience in developmental science became increasingly dynamic and explicitly grounded in systems theory (Masten 2011). For example, in a recent article, I defined resilience broadly as follows: “the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development” (Masten 2014a, p. 6). This definition was intended to be scalable across systems and disciplines, from the level of micro-organisms and systems operating within the human organism to the systems of family, school, community, culture, economy, society, or climate. One reason for moving toward broad, systems-based definitions of resilience is a growing international interest in integrating sciences to address problems of interdependent systems function and recovery, such as preparing for disasters or promoting resilience in cities and societies (Masten 2011, 2014a).

Resilience can be defined from the viewpoint of PYD as well. Lerner et al. (2013) defined resilience from a PYD perspective as a dynamic attribute referencing the adaptive and mutually influential relation of an individual adolescent and that person’s context (p. 203). As such, resilience referred to a subset of individual ↔ context relations located at the high end of a continuum of risk or adversity. From this perspective, resilience is not in the person or the context but in their connection and relation to each other. Resilience also represents a special case of the broader adaptive relational developmental systems that comprise human development and thriving, defined by the focus of resilience on relational processes in high risk or adversity contexts rather than all adaptive relations. In comparing PYD and resilience science in young people from the

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vantage point of a PYD scientist, Lerner et al. (2013) argued that resilience science differs primarily in its focus on adaptive function at the high end of the continuum of risk or adversity, one portion of the range of concern in PYD.

In this commentary, I consider PYD science, with reference to the 4-H study as a particular case in point, from the vantage point of a resilience scientist. My primary aim is to discuss the similarities and differences in core concepts and also in the emphases of these two frameworks.

Theoretical Roots

PYD and resilience science share roots in general systems theory (von Bertalanffy 1968) and developmental systems theory (DST, Ford and Lerner 1992) and both domains of work have been profoundly influenced by evolution in DST as recently articulated in Relational Developmental Systems Theory (RDST; Lerner 2006; Lerner et al. in press; Overton 2013) and the “New Synthesis” of developmental theory (Zelazo 2013). PYD and resilience science both ascribe to dynamic, probabilistic conceptions of development and epigenetic change that are shaped by multiple levels of interaction among interdependent systems, articulated in the rich heritage of theory on development in living organisms, including humans (e.g., Gottlieb 2007; Lickliter 2013; Waddington 1957; Werner 1957).

In comparison to PYD, resilience theory and science have more roots in the sciences concerned with psychopathology and diathesis-stressor models of etiology, sharing a closely intertwined history with the emergence of developmental psychopathology (Cicchetti 2006, 2013; Masten 2006, 2013, 2014b). Resilience science also has a rapidly growing emphasis on processes within the individual organism, building on new tools for assessing genes and epigenetic processes, imaging brain function, and measuring the function of other systems in the organism that have made it possible to build an empirical body of knowledge on the neurobiology of adaptive function in development (Cicchetti 2010, 2013; Feder et al. 2009; Karatoreos and McEwen 2013; Kim-Cohen and Turkewitz 2012; Southwick et al. 2011).

PYD has historically had a greater emphasis on individual ↔ context interactions that involve community contexts that contribute to youth development, such as schools, after-school programs, and organizations committed to positive youth development, including 4-H. Resilience research has considered these settings as well, usually in regard to prevention and intervention efforts to foster better outcomes among high-risk young people.

Nonetheless, both frameworks share many concepts and assumptions currently delineated in various forms of

developmental systems theory as well as in developmental psychopathology. These include the following:

- Development is shaped by many interacting systems across multiple levels of function that mutually influence each other;
- Development is probabilistic;
- Individuals follow unique pathways; yet there also are commonly occurring patterns among individual pathways in development that are viewed as normative or atypical;
- Pathways can diverge or converge as a result of myriad influences;
- Systems reorganize spontaneously as a result of development or perturbations in the system or context;
- Both positive and negative adaptations in individual development involve contributions from other systems, including the social and physical context;
- Individual function always reflects the history of many interacting systems as well as the current situation;
- Human adaptation depends on the plasticity of adaptive systems, including neural plasticity, which extends over the life span.

Focus on Positive Development, Strengths, and Adaptive Processes

Beyond the shared theoretical grounding of developmental resilience science and PYD in contemporary developmental systems theory, perhaps the most salient shared feature of PYD and resilience scholarship is the focus on positive aspects of development, function, resources, and strengths, both in the individual and in the context. There are striking commonalities in the positive goals of the science conducted under these two umbrellas in developmental science concerned with youth. Both bodies of work have focused considerable attention on defining and measuring positive adaptation, although PYD has focused more on indicators of optimal function and thriving, whereas resilience work has focused more attention on adequate or “okay” function, probably because so much of resilience research has centered on children and families facing enormous challenges. Optimal adaptation, sometimes described in the resilience literature as “post-traumatic growth”, is acknowledged but not as heavily emphasized. It is not surprising that research concerned with survival and recovery from war, disaster, and many other kinds of severe adversity would focus on doing okay rather than thriving, even though resilience investigators have long observed the phenomenon of young people who thrive in the aftermath of great adversity.

Defining and operationalizing the criteria of positive adaptation or outcome has been central to PYD as well as

the study of resilience in young people. PYD has focused on indicators of thriving or general adaptive functioning, often indexed by the “Five Cs” of competence, confidence, character, connection, and caring. Many of the articles in this special issue highlight efforts in the 4-H Study of PYD to define and measure these core attributes. These attributes are indicators of a thriving youth but they also reflect the relational perspective of attributes linked to doing well in context—what PYD investigators call adaptive developmental regulations that are mutually beneficial to youth and context.

Much of the early work in resilience studies also was focused on defining and measuring good adaptation. In the Project Competence Longitudinal Study (PCLS; Masten and Tellegen 2012), a great deal of effort was devoted to defining effective behavior in context, both the developmental context and the contexts where children spend their time. We focused on the concept of competence, which had interested Norman Garmezy, the founder of this research project, for decades. He initially studied pre-morbid competence in people who developed serious psychopathologies, such as schizophrenia, because competence predicted better long-term outcomes (Garmezy and Rodnick 1959). However, the focus on competence in the research on resilience was primarily spurred by the need to study how development was proceeding in groups of children and youth who were considered to be at-risk for problematic outcomes due to various risk factors in their lives, ranging from genetic risk indicators to trauma exposure. Tracking how well development was going required indicators that spanned a range of positive as well as negative adjustment, especially among children who had not shown indications of problems. Some resilience investigators focused on an absence of psychopathology as the criterion for resilience but many began to focus on how well children or adolescents or young adults were doing in the developmental tasks of adaptive behavior expected for individuals of a given age, culture, and historical context.

In the PCLS, we defined “competence” in terms of how well individuals were doing in age-salient developmental tasks, which changed as the child participants grew into adolescence and adulthood. There was work to do on measurement, because measures of positive behavior were relatively under-developed at the time the study was initially designed. A multidimensional approach was followed and research would corroborate the multidimensional structure of adjustment, defined by quality of function or achievement in developmental tasks, as well as the interesting patterns linking competence in one domain with competence or problems in other domains over time (see Masten and Tellegen 2012; McCormick et al. 2011). The study of spreading effects across levels and domains of adaptive behavior over time, often called *developmental*

cascades, became a topic of considerable interest in resilience science and developmental psychopathology (Masten and Cicchetti 2010).

Articles in this special issue on the 4-H Study of PYD illustrate the attention given to measurement and establishing psychometric properties of measures developed as indicators of the 5 Cs. For example, Geldhof et al. (this issue) tested a bi-factor model of PYD structure and a short-form measure of the 5 Cs across eight waves of the 4-H Study. Chase et al. (this issue) studied the structural invariance of a tripartite model of school engagement over time and how these components were related to academic achievement.

In their models and measures, PYD and resilience studies also have focused on the assets in the individual and his or her contexts that can foster positive development. Developmental assets have been a salient target of theory and measurement in PYD, particularly by the Search Institute investigators (Benson et al. 2011). The 4-H Study has focused on a number of strengths in youth and their connections to contexts, including intentional self-regulation skills, a hopeful view of the future, school engagement, and ecological assets such as qualities of families, schools, other organizations, or the community. Callina et al. (this issue), for example, studied the course of adolescents’ hope in the future over the course of the 4-H study in relation to their perceived connections to parents. Bowers et al. (this issue) examined the linkages among parenting styles reported by youth, the presence of non-parental adults in their lives, and the 5 Cs over time. Agans et al. (this issue) studied trajectories of participation in out-of-school activities in relation to PYD and contributions, as well as risk behaviors and depressive symptoms. Hilliard et al. (this issue) take a fresh look at bullying victims and perpetrators through a longitudinal examination of their strengths as well as their problems.

In resilience models and studies, these resources often are described as promotive or protective factors, which can only be distinguished when a range of contexts varying in riskiness or threat are considered. Promotive factors are associated with better adaptation or development across varying levels of risk (operating similarly regardless of risk level), representing main effects, whereas protective influences have a special function when conditions are risky or hazardous, reflecting interaction effects.

The assets highlighted by PYD bear a striking resemblance to the “short list” of promotive and protective factors repeatedly observed in studies of resilience in young people (Masten 2013, 2014b). I have argued that this list of promotive or protective factors reflects a set of fundamental adaptive systems that have evolved in human lives as a result of biological and cultural evolution working together, powering the capacity for adaptation

under very challenging as well as more usual conditions in the course of human development. These adaptive systems are spread across the systems that shape development. They are not “in” the individual or in any one system, but are embedded in the dynamic interactions and organizations of systems that comprise human development in context. This view seems highly congruent with the idea of how these attributes work in PYD.

Diverse Pathways and Trajectories

Resilience and PYD science also share a focus on pathways over the life course, although PYD is more focused on the developmental period of adolescence. In both areas of research, this focus is motivating an interest in generating data and applying analytic strategies that can capture nonlinear change and diverging or converging pathways. Pathway models have a long history in developmental theory and developmental psychopathology (see Cicchetti and Rogosch 1996; Sroufe 1997), including the paths traced by the ball rolling through Waddington’s (1957) epigenetic landscape and Gottesman’s (1974) pathways toward and away from schizophrenia.

In resilience theory, scholars for decades have delineated pathway models of adaptive function, either in terms of adaptive function or symptoms of psychopathology. Theoretical models often depict patterns of adaptive function in the context of acute or chronic adversity (e.g., Masten and Narayan 2012). With the advent of statistical strategies to model individual and group trajectories, investigators now are collecting multiwave data at multiple levels of analysis to study individual and group growth and change patterns that often test for pathway patterns of adaptation in varying contexts of risk, ranging from homelessness and immigration to war and disaster (e.g., Betancourt et al. 2013; Cutuli et al. 2013; Luo et al. 2012; Motti-Stefanidi et al. 2012).

It is clear from this special issue that PYD investigators also are interested in empirical evidence of trajectories as well as theoretical models. A number of the special-issue articles employed growth mixture modeling to study longitudinal trajectories in the sample, utilizing the multiple waves of data available in the 4-H Study of PYD.

Appreciation for Person-Focused, Variable-Focused, and Mixed Methods

PYD and resilience scientists employ a variety of methods, clearly conveying the value of different methods, including single case studies as well as large, longitudinal studies, qualitative data as well as quantitative data, and mixed

methods (Masten 2001, 2011, 2014b; Lerner et al. in press). The interest of the 4-H study of PYD in all these methods is evident across this special issue, as well as the larger body of work produced by the project. There are person-focused analyses, including qualitative and quantitative approaches, as well as variable-focused analyses testing models linking dimensions of PYD, assets, and other aspects of measured context. Hershberg et al. (this issue), for example, report on their qualitative analyses of open-ended questions posed to the youth in the 4-H Study about meaning and future goals in their lives (e.g., “What do you think is the most important/meaningful thing that you do?”).

Both PYD and resilience science have embraced the opportunities afforded by new statistical methodologies to examine interindividual differences in intraindividual change as a means for studying trajectories and processes in development, and also to consider nonlinear models of change. Both perspectives underscore the importance of multi-method and multidisciplinary integration.

Implications for Action

PYD and resilience science also share a commitment to translational goals of informing interventions and policies to promote positive development. Both approaches support a preventive-promotive approach, rather than one or the other (Lerner et al. in press; Masten 2011). Resilience work is more focused on the plight of high-risk children and youth whereas PYD is directed more broadly at youth, although with a focus on adolescence. After five decades, resilience science continues to be motivated by the aim of learning how to help children and youth by studying resilience and how it works (Masten 2011, 2014a, b). PYD also is strongly motivated by a commitment to improving the lives of young people, particularly through youth programming (Lerner et al. in press). Both frameworks have yielded research on prevention and intervention, along with guidelines for program design.

Over the years, I have articulated a general framework for resilience-based programming in a series of publications (e.g., Masten 2011, 2014b; Masten and Powell 2003). This resilience-based framework focuses on “5 Ms” intended to expand the process of framing goals, assessing change, and taking action to include a stronger emphasis on positive aims, influences, and strategies at multiple system levels. These 5 Ms include the following basic suggestions (see Masten 2011 for elaboration):

- Mission—frame positive objectives;
- Models—include positive assets, influences, and outcomes in models of change;

- Measures—include positive indicators of assets, protections, and criteria of change;
- Methods—consider strategies that target risk reduction, boost resources, and restore or mobilize fundamental adaptive systems;
- Multiple levels and disciplines—collaborate for change, considering multiple system levels where leverage or synergistic alignment is advantageous.

This framework also underscores the idea that there are windows of opportunity, both developmental and contextual, when conditions are ripe for change or systems destabilize in ways that are conducive to change. Adversity itself can disturb systems in ways that open them for change or growth.

Similarly, in PYD, investigators have articulated strategies for effective change based on PYD models (e.g., Lerner 2004). For example, several investigators delineate three fundamental characteristics of effective PYD programs, termed the “Big Three” (see Lerner 2004), which include positive and sustained relationships of youth with competent, caring adults; the building of life-skills; and opportunities for youth engagement and leadership.

Both PYD and resilience scientists have pointed to the value of testing theory through intervention experiments and evaluation, with the goal of improving practice as well as science (Lerner et al. in press; Masten 2011). Yet many programs aiming to promote PYD or resilience are implemented without any plan for evaluation, much less randomized control trials that would establish greater confidence in the efficacy of the programs. Lerner et al. (in press) have noted the need for evaluating more of the existing PYD programs already in practice and there have been many calls for well-designed intervention studies that test program effectiveness and theories of change in resilience-based programs as well. At the same time, there is recognition that in conditions of severe deprivation, war, or disaster, purely experimental designs may not be appropriate or feasible (see Masten and Narayan 2012).

Nonetheless, there is growing interest among many non-governmental organizations and government-sponsored programs to invest resources more effectively to promote positive development, both financial and human resources (Masten 2014a; Lundberg and Wuermli 2012). Many of these agencies have prevention and promotion goals that align well with resilience and PYD theory and creative, integrative collaborations across sectors may prove highly fruitful.

Conclusions

PYD and resilience science differ in emphasis and focus but share many roots, assumptions, concepts, and goals.

Both domains of theory and research have deep roots in developmental theory and I would argue that both have adopted developmental systems theory (broadly defined) as their core orientation. These two areas of work share a focus on positive models, concepts, and methods; although resilience science is more concerned with understanding the processes of adaptation under extremely challenging conditions and whether different processes may be important in extreme conditions for development. As frameworks for intervention, both perspectives assume that there is plasticity in human ontogeny over the life span, but also quite likely constraints on plasticity and important aspects of timing and targeting that need to be studied. Both areas of theory and research also grapple with the challenges of designing and implementing research on complex systems, including the difficulties of collecting the quality and quantity of data needed to test hypotheses.

What are the notable differences? PYD is by definition more focused on youth whereas developmental resilience science has expanded to life-span perspectives (e.g., Prince-Embury and Saklofske 2013; Reich et al. 2010). RDST, the conceptual perspective underlying PYD, nonetheless, is a life-span theory. Similarly, although RDST includes biological levels of organization in integrated developmental systems, PYD has not focused much as yet on measurement at biological levels of analysis. Meanwhile, resilience science is undergoing a rapid transformation, driven by advances in genomics, neuroscience and other biological methods and theory, to forge an integrated multiple-levels science of resilience.

Resilience theory and research also is finally beginning to address a longstanding gap in the empirical literature on global cultural processes and contexts (Masten 2014a; Panter-Brick and Leckman 2013; Ungar 2012; Ungar et al. 2013). PYD inherently takes context, including cultural aspects of context, into account. However, much of the research to date on PYD, including the 4-H Study of PYD, has focused on U. S. samples and programs, although there are numerous programs around the world directed at PYD. It is likely that PYD, like resilience science, will undergo a “globalization” of empirical work as well as theory. As one example, international interest in the success of immigrant youth (Masten et al. 2012) is motivating PYD research in multiple countries, requiring attention to the cross-cultural validity of both concepts and measures (e.g., Silbereisen et al. 2012).

Along with these new frontiers focused on expanding and integrating neurobiological and cultural system processes into the theory and empirical knowledge base on resilience, there is growing attention to integrating concepts and science on a much wide range of systems that play crucial roles in human adaptation. In research on disasters, for example, resilience science is expanding to

include many other systems and disciplines involved in human response and disaster preparedness, including those in engineering, economics, communications, and ecology, as well as individuals, families, and communities (Masten 2014a; Masten and Narayan 2012). PYD generally, and youth organizations such as 4-H specifically, may have a key role to play in the development of programs and research aimed at elucidating the processes that foster engagement and adaptation among the millions of young people whose lives are threatened every year by economic, political, and natural disasters.

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