


## Editorial

# Continuing the momentum of developmental psychopathology: Lessons learned from the seminal contributions of Dante Cicchetti

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### Abstract

The field of developmental psychopathology has grown broadly. Here, I draw upon lessons learned from Dante Cicchetti to highlight areas that show promise for continued disciplinary advancement. These include attention to equifinality and multifinality in the conceptualization of initial study designs, and more emphasis on specificity in accounting for developmental change. A shift from reliance on external events and towards greater diversity of research approaches will allow researchers to devote attention to the variety of ways that individuals come to understand and then respond to their own life experiences. The field of developmental psychopathology holds tremendous promise for advancing basic science about human development that can be applied to create interventions that improve the well-being of individuals and address significant societal issues.

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This Special Issue of *Development and Psychopathology* entitled *The Future of Developmental Psychopathology* has been many years in the making. It marks the last issue for which Dante Cicchetti will serve as the Editor-in-Chief of the journal he founded, and the conclusion of his 36-year editorial term. The collection of manuscripts represented in this Special Issue were a joy to solicit and the contributors shared their research and ideas with enthusiasm. This celebration reflects the ways that Dante used the journal over many decades to advance the field of developmental psychopathology. He did this, in large part, by helping scholars launch their careers. Dante saw these two goals as mutually reinforcing. He worked with authors – especially those early in their careers – to make their papers stronger such that they could clear, by a wide margin, threshold for publication. As we solicited papers for this collection, we learned that this is something that people not only remembered, but continued to appreciate many years later.

The publication of this volume also marks 40 years since Dante edited a special issue of the journal *Child Development* on the topic of developmental psychopathology (Cicchetti, 1984). That publication was an inflection point for attention to an emerging conceptual approach as it transitioned from a niche interest to a core field of scholarship (Sroufe & Rutter, 1984). With this

anniversary in mind, the collection of papers in this volume collectively reflects upon the progress, advances, and dare I say – developments – in the field. The theme of these papers is future directions, current challenges, and emerging important questions that need to be addressed if we hope to continue advancing our knowledge about developmental psychopathology. In keeping with the importance of understanding development (Sroufe, 1997), we have crafted this Special Issue with graduate students and early career scholars especially in mind. Taken together, the future-orientation of these papers should help scholars think about what and how they might contribute to advance our understanding of both typical and atypical development.

### Key lessons from Dante Cicchetti

From his undergraduate days and throughout his career, Dante has been motivated by concern for the world's most vulnerable youth. And there are many lessons from his impactful career to inspire and inform new scholars entering the field. The first is that when Dante commenced his early studies of Down Syndrome in the 1970's, attention to the psychosocial aspects of this condition was almost nonexistent. Other than observations of the large degree of heterogeneity in outcomes, developmental considerations were absent. Dante approached this area with an interest in how our understanding of typical development might inform the development of children with Down Syndrome as well as how the challenges and developmental pathways observed in children with Down Syndrome might afford new perspectives in the processes underlying typical development.

He did so by focusing on emotion, symbolic, and language development (Beeghly & Cicchetti, 1987; Hesse & Cicchetti, 1982; Cicchetti & Pogge-Hesse, 1982). This perspective has been

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This Special Issue emerged from a conference held in conjunction with the March, 2023 Biennial meeting of the Society for Research in Child Development in Salt Lake City, Utah entitled "Progress and Future Challenges in Understanding Atypical Development" organized by José Causadias (Arizona State University), Sheree Toth (University of Rochester), Suniya Luthar (Authentic Connections Group), and Seth Pollak (University of Wisconsin-Madison), to honor the lifetime career contributions of Dante Cicchetti.

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influential in promoting a more holistic understanding of Down Syndrome that emphasizes the importance of early interventions and the potential for positive developmental outcomes (Cicchetti & Beeghly, 1990). Of particular significance is that the range of developmental outcomes Dante observed in children with Down Syndrome led to elaboration of his thinking about the concept of multifinality, which would later become a major pillar of developmental psychopathology approaches (Cicchetti, 2016). It is worth noting that Dante made a significant contribution by focusing on a condition that was distinct from the areas that were receiving the most research attention at the time. At present a subset of psychological conditions are glutted with research activity, whereas other important psychological conditions affecting children receive scant attention and would benefit from early career scholars taking on these problems.

A second lesson is the value of drawing upon one's own lived experience to land on meaningful research questions. Dante experienced a lot of violence exposure as a child. Early in life, he was also aware that he suffered from depression, but he did not fully realize that he had bipolar disorder until adulthood. In the ensuing years, Dante harnessed those personal experiences to motivate one of the largest and longest-running research programs to date on child maltreatment and affective disorders. Starting with the Harvard Child Maltreatment Project (Cicchetti & Rizley, 1981) and then growing into the Mount Hope Family Center at the University of Rochester, this program grew to link empirical studies alongside partnerships with departments of human/social services, intervention programs, and extended intergenerational studies of families. From its inception, the Mount Hope Family Center included and offered services to ethnically, racially, and economically diverse families. And it did so by combining research with outreach and intervention services. One such innovation involved launching summer camps for high-risk youth that offered both no-cost enrichment activities and childcare with an ability to collect data from large, representative samples of children.

Using insights from his own experiences, Dante helped the field to address basic questions such as how to define child maltreatment (Barnett et al., 1993; Cicchetti & Barnett, 1991). Unlike depression or ADHD, there are not consensus diagnostic criteria for conditions of risk and adversity. And there continues to be debate about how to conceptualize and measure these phenomena (Pollak & Smith, 2021; Smith & Pollak, 2021). But the history of these research projects also solidified another core tenant of developmental psychopathology, which is a life history approach (Cicchetti, 2013; Suor et al., 2017). The life history approach to developmental psychopathology examines how evolutionary pressures shape individual differences in developmental trajectories and susceptibility to psychopathology. It does so by focusing on individual patterns of adaptation and maladaptation within the contexts of the challenges and supports children have encountered (Davies et al., 2012; Masten & Cicchetti, 2016).

### Pathways for future success

In recent years, psychopathology research has remained stalled; most research is correlational data, theoretical advances have been limited, and the intervention techniques taught in graduate programs have not changed very much over decades. But, as discussed below, developmental approaches hold tremendous promise for generating new insights into specific processes that lead children to develop patterns of adaptation and maladaptation.

### Studies designed to address specificity

Psychopathology research has a specificity problem. Nearly all published psychopathology studies follow a predictable pattern. A measure or task is administered to a group of people with a high level of psychological difficulties and a comparison group. The study then reports that the individuals who are experiencing more psychological problems or risk factors perform worse on the task/measure than those in the comparison group or those with fewer symptoms or risks. In other words, there is such high sensitivity to detecting the role of psychological problems in almost any aspect of individual functioning that it has been difficult to identify features that are specific to any psychological conditions or circumstances. We can nearly always expect that someone facing psychological challenges is likely to perform worse on almost any task we ask them to complete (Chapman & Chapman, 1978). Many psychopathologists have been trying to address this problem by focusing on how we categorize or define different forms of psychopathology. There is no question that better approximations of carving nature at its joints is important. But re-shuffling how disorders and symptoms are grouped (DSM, RDoC, HiTOP; see Kotov et al., 2017) is not likely to remediate this issue of progress in the field if our scientific approaches are not well-suited to excavating critical mechanisms that underlie developmental change (Conradt et al., 2021; Pollak, 2015). Understanding developmental change can account for how behavioral patterns emerge from a range of life and biological circumstances as well as how individuals can respond to interventions.

Key to a developmental psychopathology approach is trying to account for change. That change might be chronological age, biological age, something as simple as time, learning, biological re-organization, or reactions to experience. But an association between an early life event and a late developmental outcome cannot, in itself, inform understanding of developmental mechanisms (Woodard & Pollak, 2020). For example, just because an early experience has an effect upon development does not mean there is a sensitive or critical period for that effect or that the underlying mechanisms of change has been identified.

The Adverse Childhood Experiences (ACEs) approach serves as an excellent example of why developmental approaches are needed to address the specificity problem in psychopathology research. The general idea that high levels of adversity and stress early in life creates risk for behavioral problems has been powerful and important. Repeated demonstrations of how negative events predict a range of behavioral and health problems raised awareness of the importance of early childhood experiences among scientists and the lay public. However, that general association has now been more than adequately confirmed (Hughes et al., 2017). Associations between early childhood stress and negative outcomes runs a gamut that includes nearly every and any possible outcome imaginable including obesity, substance abuse, cancer, heart disease, respiratory illnesses, sexual risk taking, all mental health disorders, violence, and even outcomes as diverse as premature mortality and low self-esteem. What is needed now is a next generation of studies that move beyond more correlations and instead addresses the critical gaps in knowledge that remain: how and why these experiences lead to these outcomes. And why there is such a range of diverse outcomes.

Developmental approaches would ask how and why aspects of someone's life history would result in a particular outcome (Cicchetti & Rogosch, 1996; Sroufe & Rutter, 1984). Developmental approaches

would address why there are differences across individuals in how they respond to seemingly similar life circumstances (Smith & Pollak, 2021b). A core component of developmentally-oriented approaches involves considering these principles of multifinality and equifinality at the beginning (in the design of a research project) rather than at the end (when attempting to explain observed data). If multiple developmental pathways are possible, which particular pathway is a project aiming to capture? If a particular factor is being tested, how is it hypothesized to influence individual pathways? Given that individuals carrying a range of life challenges might be expected to generally under-perform relative to peers unburdened by those same psychological factors, what case can be made for the specific tasks or measures being used as playing a causal, specific, or significant mediating/moderating role in behavior? Is a dependent measure simply a biological marker that a developmental process has been altered, or providing insight into the processes that has been changed? These seem to be the next level of questions that can advance basic science, but are also poised to motivate a new generation of effective prevention and intervention efforts.

#### *Human development (and disease progression) is never about one variable*

The nature of human development itself illustrates a second way in which a developmental psychopathology approach is valuable. It is now commonly appreciated in the field of developmental psychology that a change in one skill, system, or domain will dynamically influence other aspects of an individual (Cicchetti & Dawson, 2002). No aspect of development works in isolation (for an example from emotional development, see Pollak & Ruba, 2020). A change in motor development, such as an infant's ability to move their head, will change what they can see; this, in turn, will change what they think about, and how they think. In this manner, a slight change in motor development effects a change in how an individual can feel and behave. It is not possible to design a measure of language development without also considering what motor responses are available to children of a particular age, how much they can remember, what they are able to perceive, and how long they can attend. And development is rarely uniform in that individual children can display slightly faster growth in one domain and slower growth in another, only to have that pace reversed over time. For these reasons, it is extremely rare for the evaluation of any given aspect of development to be measured solely by one criterion or method.

Developmental psychopathologists must also be cognizant of this interplay and maintain healthy skepticism of any classification that relies on a single index. One example of this is that in many areas of study, researchers rely heavily upon a single instrument of classification (for a well-reasoned desire of ensuring some degree of homogeneity within a group). Psychopathy researchers rely heavily on the Psychopathy Check List. Autism researchers rely almost exclusively upon the Autism Diagnostic Observation Schedule. Each subfield has its own modal tool. But it is also the case that forcing all data through the same mold will constrain our view of possible developmental pathways. Developmental psychopathology, by emphasizing individual patterns of change, might offer new perspectives by relying less on common classificatory systems. From a developmental perspective, it has not yet been demonstrated that any common classification system for mental illnesses or maladaptation, broadly construed, has transformed the

way we think about and understand sequelae of the varieties of emotional and life experiences that people encounter. In fact, developmental lenses often allow us to consider ways in which a presenting behavioral problem in an individual might also reflect coping or adaptation to that individual's early life circumstances.

#### *Phenomenology is hard*

The inherent multi-level and multi-domain approaches necessitated by the study of human development highlight a third area of promise for developmental psychopathology. It is clear that diversity is good in biology and ecology. Many financial advisors taut the virtues of a diversified retirement and savings portfolio. In recent years, especially, we have come to appreciate even more the value of integrating diverse experiences, perspectives, and viewpoints in addressing societal problems. Diversity is critical in scientific approaches as well. It is a truism to state that no single approach or method will be sufficient to fully understand complex human psychological problems. Developmental psychopathology will be enriched by increasing the representation of a variety of research approaches in our primary scientific outlets.

At present, correlational studies with a mix of questionnaires and some behavioral or biological measures seem to be the most frequently used approaches. Less common are designs that include experimental manipulations aimed at targeting specific candidate mechanisms. At the time of the writing of this paper, psychology is emphasizing big data and large sample sizes. Big data approaches bring power in allowing researchers to rigorously test individual differences as well as obtain more reliable estimates of effect sizes. But the kinds of studies that can enroll hundreds or thousands of participants may not afford the precision, detail, and control of laboratory-based experimental research. It might even be argued that the some of the largest datasets, such as the Adolescent Brain Cognitive Development Study (ABCD Study), in achieving size have done a poor job at characterizing the experiences of the participants- the feature that may be most critical in understanding the emergence of individual differences.

Oftentimes studies that aim to include very large numbers of participants or very large numbers of tasks and measures balance these features with a need to be quick – very brief behavioral tasks with limited trials and limited depth on skill assessment, or abbreviated scales with minimal question items to assess complex topics. Since no one study can address all the things we need to know, we need a mix of both large scale and smaller laboratory-based studies; we need insights from behavioral, neuroscientific, and socio-cultural perspectives; we need studies with good ecological validity as well as those with tight experimental controls. It is not a question of a best approach, but the need to combine multiple perspectives to understand complex issues.

Perhaps least represented in mainstream psychopathology journals are qualitative studies. It may be the case that in our excitement about the easy availability of so many neurobiological measures, psychopathologists have marginalized phenomenology. However, both qualitative approaches, as well as methods aimed at measuring how individuals understand and make sense of their own experiences, offer rich opportunities to detect and formulate hypotheses that might be tested with quantitative approaches. As an illustration, it is common in adversity and stress research to group participants in terms of their endorsement of life events. Individuals who endorse that events occurred in their lives (presumed to be stressful) are categorized in terms of the sum of their responses or the presence of those events. But we know that



not everyone experiences similar seeming events the same way (Gunnar et al., 2020; Masten et al., 2023; Smith & Pollak, 2021). To illustrate, the Trier Social Stress Test is a very reliable way to elicit a stress response in a laboratory setting; yet about a third of participants do not exhibit the expected response to this event (Weckesser et al., 2020). This fits with our everyday intuitions about individual differences. Imagine three people all participating as presenters in the same scientific symposium. One might be very nervous about presenting their data, with a dry mouth and butterflies in their stomach. The next person might be excited and filled with joy and anticipation about their turn at the microphone to share their data. And the third presenter may be neither of these things, neither thrilled nor nervous, and thinking of themselves as just engaging in a mundane aspect of their job. Simply asking these individuals if they were engaged in a public speaking event would yield a consistent endorsement of that question that provides us with no information about what the experience means to them and how they are responding to it. Yet this example captures, in a rough analogy, a common approach in research. We ask about events that we, as researchers, considered to be stressful or adverse, and solicit yes or no answers and sum totals of these responses. But much will be gained by probing more about what individuals are thinking and feeling to understand the meaning they are construing about their own experiences.

### Continuing the momentum in developmental psychopathology research

As a sensitive caregiver of the emerging field of developmental psychopathology, Dante Cicchetti leaves the field ready to achieve new developmental milestones. The range of exciting ideas represented in the papers collected in this volume will hopefully motivate new scholars in the field to consider new research directions. A historical perspective on the field reveals that many of the best research ideas come from thinking about new connections- across research fields, methodologies, and perspectives.

Nonobvious ideas often make the greatest contributions. My own hope for the field is that emerging scholars will not be daunted by things that initially seem hard to measure or questions that require generating a new approach. So much will be gained as researchers strive for the new and unexplored instead of using the same off-the-shelf tasks and measures. A glimmer of hope is that scientists are increasingly oriented to research designs that can offer specificity while also mapping in some way onto children's real, everyday lives. As Dante Cicchetti showed us, life experience is important: It provides us with insight into nonobvious questions that need to be asked and empirically tested. Considering people's experiences fosters compassion for and caring about the individuals who collaborate with us as our research participants, and the challenge of ensuring that our theoretical models truly capture the complexity of children's contexts and lives.

When I was a graduate student, Dante would return comments on drafts of papers to me using a thick purple marker. When I would make initial attempts to timidly propose an idea about how data really captured something about a child's experience and what it might mean for their developmental trajectory, Dante would circle the sentence. In big purple letters, he would write across the text: "More of this!" And that is what this celebratory Special Issue of *Development and Psychopathology* is about. More interdisciplinary. More integrations of multiple levels of analysis. More applications to interventions and policy. More understanding of

how individuals understand and respond and try to adapt to their own changing experiences. More theoretically-driven and discovery-oriented developmental science. More scientific papers that shift from only describing what has been observed to providing deeper, empirically-testable accounts for why and how those effects are occurring. This is how developmental psychopathologists can collectively pool our knowledge to improve people's well-being and quality of life.

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