

Developmental Approaches to Child Psychopathology: Longitudinal Studies and Implications for Clinical Practice

When JCACAP editor Normand Carrey attended the Life History Research Society meeting in Montreal in the fall of 2010, he was struck by the added depth of understanding that longitudinal studies could provide to the field of child mental health. He felt a need for his fellow clinicians to be further informed about these methods and findings. That is when we were invited to step in. Together we envisioned a Special Issue of the JCACAP that would focus on the value of longitudinal studies to advance our knowledge of specific disorders. While not exhaustive, we identified seven disorders where longitudinal data are available. Each author was invited: (a) to describe aspects of developmental psychopathology ranging, when possible, from pregnancy to late adolescence; (b) to identify the relevant environmental and biological processes and mechanisms involved over the course of development; (c) to discuss prevention and intervention efforts that are developmentally informed; and (d) to address the challenges associated with the application of developmentally-based knowledge in clinical practice. The authors submitted a mixture of introductory reviews and empirical papers.

Duffy and Carlson (2013) take a developmental perspective into the diagnosis and treatment of bipolar disorder (BD). Using data from longitudinal studies of both the general population and familial high-risk cohorts they address issues of reliability of informants, the importance of context in which symptoms are manifested, comorbidity, early signs of sub-threshold forms of BD (which may sometimes be normative) across developmental stages. They introduce the reader to the concepts of homotypic (when early signs are similar to adult forms of a disorder) and heterotypic (when early signs are not similar to adult forms of a disorder) continuity. These are key concepts that recur throughout this special issue. While recognizing current controversies of diagnosing BD in children, they point out the limitations of current practice and emphasize a crying need for a developmental approach. They note that the most reliable signs of early developing BD are depressive symptoms, and that these signs seem more common in high risk families. They also emphasize that to understand the natural history of BD it will be particularly important to better understand the natural history of other major mental health disorders. They add that the current institutional and academic divide between child/adolescent and adult psychiatry reflects a profound lack of integration of a developmental approach and that this contributes much to the current crisis in mental health services and research.

Bennett, Szatmari, Bryson, Duku, Vaccarella, and Tuff (2013) emphasize the heterogeneity of Autism Spectrum Disorders (ASD) and suggest that early developmental predictors may better help predict individual differences in course and outcome. They present a 'neuroconstructivist' perspective that posits an interaction between the symptom domains that characterize this set of disorders; deficits in social interaction and communication, restricted interests and repetitive behaviors. They illustrate this by examining the link between language development and social interaction abilities in a six year longitudinal study. They introduce the reader to the important concept of "mediation." They argue that developmental "mediators" may provide important intervention targets. Specifically, they examine the mediating role of theory of mind (ToM) - the ability to reason about the mental states of self and others - as it pertains to the development from early language abilities to later social function outcomes in ASD. Although they note that the evidence they report remains correlational and requires replication, it does point to training in ToM as a potential target for an intervention study. The authors conclude by critically examining the developmental conditions under which this training could possibly be successful.

Next, Pardini and Frick (2013) bring focus on age of onset, the presence of callous-unemotional (CU) traits, and anger regulation in the etiology of conduct disorder (CD). Frick has been an important advocate for the inclusion of a callous-unemotional trait specifier for CD diagnosis in DSM 5 which is due to be released in May of this year. The authors first review and contrast the course, and long-term outcomes, of early onset as opposed to later onset CD. The specification for age of onset found in the previous version of the DSM is a striking example of the utility of a developmental approach to research, diagnosis and prognosis. Recognizing the heterogeneity of CD they also examine to what extent those children with CU traits could constitute an etiologically distinct subgroup of CD children. Their review also identifies putative protective factors that could be important for prevention and treatment of CU forms of CD. The authors then contrast forms of CD in which CU traits are seemingly absent and who show severe anger regulation problems sometimes from very early childhood. Using such distinctions in clinical practice may be useful both in refining diagnostic tools and in the development of more efficacious interventions. Indeed, the authors' review of the available evidence supports this conclusion.

Legerstee, Verhulst, Robbers, Ormel, Oldehinkel, and van Oort (2013) examine developmental aspects of anxiety

problems using data from an ongoing longitudinal study, the Dutch TRacking Adolescents' Individual Lives Survey (TRAILS). These authors introduce the reader to 'group-based trajectories,' and suggest that this could be a key tool in longitudinal developmental research as it serves to identify clusters of individuals whose symptoms follow a similar time course over development. For example, some individuals remain low in anxiety over time, others show early increasing levels that persist later, still others show temporary increases that may remain elevated only for a few years (such as following a transition from primary to secondary school systems). Understanding the factors uniquely associated with each of these trajectories may help to focus novel interventions. One clearly important factor is the child's gender. Between the ages of 10 and 17 years the nature and course of anxiety differs according to the child's gender. This research team has also identified a number of predictors including self competence, parenting style, peer interactions, and the timing of life events that are predictive of early adult outcomes. This study illustrates well how longitudinal studies can help identify prognostic indicators that will be important to share with families and practitioners as they work together to improve adult outcomes.

Maughan, Collishaw and Stringaris (2013) examine depression across childhood and adolescence. They note how developmental studies have clarified the psychosocial consequences of what seemed to be normal 'mood swings.' From very unreliable accounts of early depressive signs in the preschool years, to gradual increases in childhood and adolescence, mainly in girls, they also question whether this mood lability across developmental stages stems from the same underlying condition. For example, they note how some criteria, such as marked irritability, have been adjusted according to developmental stages. Further, comorbidities, which are typically high, not only vary concurrently across these stages but so does their developmental sequence. Finally, they note that there is little evidence for continuities in depressive symptomatology across development and that heritability estimates also vary. Nonetheless, regardless of the child's developmental stage, a family history of depression remains a robust predictor of outcome, suggesting some genetically regulated mechanisms. There is also compelling data pointing to the importance of psychosocial adversity in some forms of pediatric depression. The most plausible neurobiological systems are highlighted as a function of developmental milestones, including pubertal and brain maturation. The authors also review psychotherapeutic and psychopharmacological treatment and prevention options for these children and their families. The authors also point to the need for additional prospective longitudinal studies to advance our knowledge base.

Castellanos-Ryan, O'Leary-Barrett, and Conrod (2013) focus on substance use disorders which typically have their onset during adolescence. The authors briefly contrast normative from atypical development of substance use

across adolescence and identify some key predictors, correlates (such as risk-taking behavior), comorbid features, and short- and long-term maladaptive outcomes. They note that much of the onset of substance use happens at a developmental period where many biological (e.g., onset of puberty) and psychosocial (e.g., transition from primary to secondary school) changes are occurring. These periods of transition are critically important for the development of novel interventions. The authors also point to the need to characterize endophenotypes which underlie symptoms themselves, such as a child's reward seeking behavior or their sensitivity to anxiety producing stimuli. Using this example, substance use could be the result of a need to increase dopamine release, or to numb an overly sensitive fear circuitry. Preventative interventions in childhood for high-risk children with such endophenotypes holds promise. These selective-prevention approaches contrast considerably with universal prevention approaches which do not take into account the individual predispositions identified in developmental research.

Cherkasova, Sulla, Dalena, Pondé, and Hechtman (2013) address the development of Attention Deficit Hyperactivity Disorder (ADHD) across the first decades of life. Although the bulk of the available scientific data focuses on school-aged children, these authors point to the prognostic significance of ADHD symptoms first evident in the preschool years. These children with very early onset may have the more debilitating forms of ADHD and suffer from considerable comorbidity. The authors note the inherent difficulties associated with the accurate assessment of signs and symptoms of ADHD in preschool as well as in adolescence as the accepted criteria tend to be childhood based and are not necessarily developmentally appropriate. The authors then examine the power of a child's ADHD status to long term outcomes using the effect size statistic. This is a standardized way of representing the differences between group means or the size of correlations across studies. This is an important statistic which is at the heart of meta-analytic studies (such as Cochrane reviews). Examining these statistics is a sobering experience: while many comparisons may be statistically significant, the authors note that many of the effect sizes linking ADHD status with long term outcomes are modest at best. They note differences in effect sizes between traditional cross-sectional and longitudinal studies which remain unaccounted in current research. When they turn to early predictors, not all the usual suspects show robust links with later outcomes. Their review also examines developmental predictors of severity and persistence of ADHD symptoms and provides an informed critique of the research examining medication and other treatment modalities as predictors of long-term outcome.

Now that this issue is published, we feel very fortunate to have worked together with an outstanding group of clinical investigators from across the globe who have steadily advanced our field. We are also enormously grateful for the

timely and insightful critiques by our reviewers who have contributed considerably to making this venture successful. We sincerely hope that this issue brings our readers an enhanced appreciation of the value of taking into account developmental considerations in understanding, preventing and treating child mental health problems.

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References

- Bennett, T. A., Szatmari, P., Bryson, S. E., Duku, E., Vaccarella, E., & Tuff, L. (2013). Theory of Mind, language and adaptive functioning in ASD: A neuroconstructivist perspective. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 22(1), 13-19.
- Castellanos-Ryan, N., O'Leary-Barrett, M., & Conrod, P. J. (2013). Substance-use in childhood and adolescence: A brief overview of developmental processes and their clinical implications. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 22(1), 41-46.
- Cherkasova, M., Sulla, E., Dalena, K., Pondé, M. P., & Hechtman, L. (2013). Developmental course of attention deficit hyperactivity disorder and its predictors. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 22(1), 47-54.
- Duffy, A., & Carlson, G. A. (2013). How does a developmental perspective inform us about the early natural history of bipolar disorder? *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 22(1), 6-12.
- Legerstee, J. S., Verhulst, F. C., Robbers, S. C. C., Ormel, J., Oldehinkel, A. J., & van Oort, F. (2013). Gender-specific developmental trajectories of anxiety during adolescence: Determinants and outcomes. The TRAILS Study. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 22(1), 26-34.
- Maughan, B., Collishaw, S., & Stringaris, A. (2013). Depression in childhood and adolescence. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 22(1), 35-40.
- Pardini, D., & Frick, P. J. (2013). Multiple developmental pathways to conduct disorder: Current conceptualizations and clinical implications. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 22(1), 20-25.

2013 CONFERENCE WATCH

ADHD WORLDWIDE 1ST JOINT MEETING

February 27 - March 1, 2013
Tel-Aviv, Israel
Website: ADHDworldwide2013.com

ANNUAL CANADIAN PSYCHOLOGICAL ASSOCIATION CONVENTION

June 13 - 15, 2013
Quebec City, Quebec
Website: www.cpa.ca

CANADIAN PAEDIATRIC SOCIETY ANNUAL MEETING

June 19 - 22, 2013
Edmonton, Alberta
Website: www.cps.ca

ANNUAL CANADIAN PSYCHIATRIC ASSOCIATION CONFERENCE

September 26 - 28, 2013
Ottawa, Ontario
Website: www.cpa-apc.org

CANADIAN ATTENTION DEFICIT HYPERACTIVITY DISORDER RESOURCE ALLIANCE ANNUAL MEETING

October 4 - 6, 2013
Montreal, Quebec
Website: www.caddra.ca

CANADIAN ASSOCIATION OF PAEDIATRIC HEALTH CENTRES ANNUAL MEETING

October 20 - 23, 2013
Toronto, Ontario
Website: www.caphc.org

AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY ANNUAL MEETING

October 22 - 27, 2013
Orlando, Florida
Website: www.aacap.org

CANADIAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY ANNUAL MEETING

November 17 - 19, 2013
Vancouver, British Columbia
Website: www.cacap-acpea.org

INTERNATIONAL ASSOCIATION FOR CHILD AND ADOLESCENT PSYCHIATRY AND ALLIED PROFESSIONS (IACAPAP) WORLD CONGRESS

August 11 - 15, 2014
Durban, South Africa
Website: <http://iacapap.org/world-congresses>
Website: <http://www.iacapap2014.co.za/>

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