Research Statement

One of the most longstanding questions in the field of developmental psychology is whether children’s early experiences with parents have a lasting influence on their development. In fact, so much theoretical and empirical attention has been devoted to understanding the developmental significance of experiences with parents that the issue is considered an axiom by some scholars. Nevertheless, significant controversies and questions remain. My research examines three specific questions: 1) Do early caregiving experiences influence the quality of individuals’ adaptation not only during childhood and adolescence but also during the years of adulthood? 2) What are the specific structures that account for the long-term impact of early caregiving experiences on later adjustment? 3) And how do the consequences of the early caregiving environment interact with each individual’s unique genetic characteristics?

The long-term significance of early caregiving experiences

One of attachment theory’s most central and provocative claims is that early parent-child relationships provide a foundation for competent adaptation across the entire life-course (Sroufe, Coffino, & Carlson, 2010). This theoretical tenet has been critiqued as being overly deterministic and naïvely simple. In fact, other scholars have proposed that effects of early caregiving experiences are likely to fade with time as individuals encounter a range of later experiences, such as peer groups, different neighborhoods, and distinct educational opportunities (e.g., Kagan, 1996). These competing perspectives have inspired a wealth of short-term longitudinal studies into the implications of early caregiving experiences for multiple aspects of developmental adaptation during childhood and adolescence. However, there have been few studies of whether the effects persist into adulthood, a time in which individuals have greater autonomy and control over their own development and are faced with novel developmental tasks.

My colleagues and I have investigated the long-term significance of early caregiving experiences using data from the Minnesota Longitudinal Study of Risk and Adaptation, one of the few longitudinal projects that has gathered information about participants’ lives from birth to adulthood. Specifically, we have examined the degree to which experiences of sensitive caregiving during the first three years of life predict indices of developmental adaptation during adulthood that are both theoretically and societally relevant. We demonstrated that individuals who experienced more sensitive early care not only exhibited greater social skills with peers and improved performance on academic achievement tests during childhood and adolescence but also were more likely to form committed romantic partnerships and have higher educational attainment during adulthood (Raby et al., 2015, Child Dev.). In a separate study, we reported that individuals who experienced early sensitive care were more likely to provide high quality parental care for their own children nearly 30 years later (Raby et al., 2015, Dev. Psychology).

My colleagues and I have extended these findings by examining the long-term significance of more atypical early caregiving experiences, namely experiences of childhood abuse and neglect. This research was guided by a developmental psychopathology perspective, which views normal and abnormal development as mutually informative (Cicchetti, 1984; Rutter & Sroufe, 2010). We have shown that individuals who experience childhood maltreatment are at an increased risk for various mental health problems during adulthood (Cutuli, Raby et al., J. of Affective Disorders; Martin, Raby et al., 2017, Attach. & Human Dev.) and are more likely to provide lower quality parenting (Labella, Raby et al., under review). In addition, we provided evidence that individuals who experience abuse and neglect during the first five years of life are more likely to encounter more difficulties with romantic relationships and ultimately receive less education in adulthood than non-maltreated
children (Raby, Roisman et al., revise & resubmit). Importantly, the predictive effects of early maltreatment experiences were not simply due to the stability of caregiving across time: early experiences of abuse and neglect were associated with more problematic adult outcomes even after accounting for the effects of childhood maltreatment that occurred during later childhood and adolescence.

**Mechanisms underlying the developmental consequences of early caregiving experiences**

Altogether, the findings of my research with the MLSRA are consistent with the idea that early parent-child relationship experiences have a unique influence on individuals’ developmental adaptation that persists into adulthood. The focus of my research has begun to shift to clarifying the mechanisms underlying these long-term effects. As discussed in Raby and Roisman (in press), understanding this issue necessarily involves answering three more specific questions: what are the specific structures that are shaped by early interactions with caregivers, how are these structures carried forward across time, and how do these structures influence individuals’ functioning at later ages and in novel contexts?

Guided by modern developmental systems perspectives (Gottlieb, 2007; Sameroff, 2009), I have adopted a multiple-levels-of-analysis approach to researching these issues. The first level involves intermediate behavioral phenotypes, which are more basic behavioral processes that may be shaped by early caregiving experiences and contribute to more complex interpersonal, academic, and mental health outcomes. For example, my colleagues and I are examining children’s behavioral and emotional regulation strategies (Raby, Zajac et al., 2017, SRCD presentation), executive functioning skills (Lind, Raby et al., 2017, *Dev. & Psychopathology*), and language abilities (Freedman, Raby et al., revise & resubmit) during early childhood.

The second level of analysis involves individuals’ social-cognitive representations of close relationships. My research on this topic is motivated by attachment theory (Bowlby, 1988). Indeed, my research has provided evidence for several of attachment theory’s central hypotheses, including the idea that attachment security during infancy and adulthood has its origins in childhood caregiving experiences (Raby et al., 2012, *Psych. Science*; Raby, Labella et al., 2017, *Dev. & Psychopathology*), individual differences in attachment security are moderately stable across development and across generations (Raby et al., 2013, *JCPP*; Raby et al., 2015, *Attach. & Human Dev.*), and attachment-related representations influence individuals’ responses within adult romantic and parent-child relationships (Shlafer, Raby et al., 2015, *Attach. & Human Dev.*; Waters, Raby et al., revise & resubmit; Zajac, Raby, & Dozier, under review).

The third level of analysis involves individuals’ stress neurophysiology. This research tests the possibility that early caregiving experiences exert a long-term influence by becoming biologically embedded in the physiological systems that mediate individuals’ responses to threats and stressors (Shonkoff, Boyce, & McEwen, 2009). Consistent with this idea, my initial research in this area demonstrated that adults with histories of less sensitive caregiving during childhood exhibited greater increases in sympathetic nervous system arousal during moderately stressful interactions with their romantic partners (Raby et al., 2015, *Psych. Science*). Recently, my colleagues and I have extended those analyses by examining the social regulation of the hypothalamic-pituitary-adrenal (HPA) system among a sample of internationally adopted children. We have demonstrated that early experiences of social deprivation prior to adoption alter the diurnal functioning of children’s HPA systems (Raby, Bernard et al., 2017, ISDP presentation) and that post-adoptive caregiving experiences may help facilitate recovery in these children’s HPA responses to threat (DePasquale, Raby et al., revise & resubmit).
Currently, I am extending my work on the mechanisms underlying the developmental significance of early caregiving through a collaborative project with Elizabeth Conradt and Sheila Crowell. This project is examining the 18-month outcomes for a sample of 160 parent-child pairs that were originally recruited to investigate the biological and behavioral consequences of prenatal exposure to maternal emotional dysregulation. Because we are collecting observations of early parent-child interactions at this 18-month follow-up, this collaboration will offer opportunities for me to investigate whether early caregiving experiences have immediate implications for infants’ functioning at behavioral, representational, and physiological levels of analysis. We began data collection for this project during summer 2017, and we will use these data to support an extramural grant application to be submitted during spring 2018.

The interplay between early caregiving experiences and individuals’ genetic characteristics

Historically, parental contributions to individuals’ development were considered antithetical to the idea that genetic factors shape individuals’ developmental trajectories. However, more contemporary developmental perspectives have proposed that genetic and environmental influences interact with one another in complex ways (Rutter, 2006). Another increasingly focal aspect of my research has been clarifying the precise interplay between early caregiving experiences and individuals’ genetic characteristics.

My initial research on this topic used a candidate gene approach. A discouraging fact for this type of research has been that many of the findings—including the results of studies I conducted—have proven to be difficult to replicate with independent samples (e.g., Raby, Roisman, Booth-LaForce, 2015, *Dev. Psychology*). In light of that realization, I have shifted to conducting research with adoptive families. Because adoptive parents and children are genetically unrelated, research with these families allows for testing the effects of early caregiving experiences without the possibility of confounding due to shared genetic factors. In addition, the incorporation of information about the biological parents—which is increasingly possible given large-scale changes in the prevalence of more open adoptions—allows for evaluating potential genetic contributions to children’s development. I began investigating the factors that contribute to the development of adopted children through my postdoctoral research, which focused on children adopted internationally. In fact, the research findings mentioned above about children’s self-regulation behaviors, executive functioning skills, and HPA functioning involved this group of children.

Currently, I am building a registry of Utah adoptive families as a first step towards extending my research with adoptive families. I have developed partnerships with various adoption-service providers in the Salt Lake City community and worked with them to design a relatively brief online survey that Utah adoptive parents will be invited to complete. I will be applying for a University Community Partnership grant to support the early stages of this research. In addition, the survey data we collect will be used as pilot data for a grant application to the National Science Foundation focused on testing the significance of early caregiving experiences for the early biobehavioral development of adopted children.