Implicit Theories of Personality Across Development: Impacts on Coping, Resilience, and Mental Health

Jessica L. Schleider[1] and Hans S. Schroder[2]

[1] Department of Psychology, Harvard University

[2]Department of Psychology, Michigan State University

Jessica L. Schleider, M.A. (corresponding author)
Harvard University, Department of Psychology
Email: jschleider@fas.harvard.edu

Hans S. Schroder, M.A.
Michigan State University, Department of Psychology
Email: schrod16@msu.edu

CITATION: Schleider, J. L., & Schroder, H. S. (in press). Implicit theories of personality across development: impacts on coping, resilience, and mental health. In V. Ziegler-Hill & T. K. Shackelford (Eds.), *The SAGE Handbook of Personality and Individual Differences*. Sage Publications.

Implicit Theories of Personality Across Development:

Impacts on Coping, Resilience, and Mental Health

Instinctively and from an early age, humans rely on guiding beliefs to make sense of the social world. Heider (1958) proposed that we are all “naïve scientists”: that our common-sense theories of social phenomena guide our perceptions, expectations, and behavior toward those around us. Whether these self-theories are accurate, they can profoundly shape our reactions to everyday experiences, and can affect longer-term outcomes. For example, attachment theory suggests that young children with responsive caregivers develop a theory of the self as acceptable and worthwhile, facilitating secure attachment and well-being; in contrast, children with unreliable caregivers are assumed to form a different theory—that they are unacceptable and unworthy—compromising secure attachment and subsequent mental health (Bowlby, 1973; Main et al., 1985; for a review, see Cassidy, 2000). Later in life, other kinds of guiding beliefs and theories mediate our interactions with peers (e.g., hostile attribution bias: Crick & Dodge, 1996; Downey, Lebolt, Rincon, & Freitas, 1998), academic motivation (e.g., perceived self-efficacy and autonomy: Skinner, Zimmer-Genback, & Connell, 1998), and susceptibility to stress in the workplace (e.g., lay theories of the effects of occupational stress; Rydstedt, Devereux, & Furnham, 2004). By shaping the goals we pursue and our reactions to associated circumstances, these beliefs affect our likelihood of reaching our goals and our capacity to cope with setbacks along the way.

Over the past three decades, the construct of *implicit theories* (Dweck, Chiu, & Hong, 1995; Dweck, Hong, & Chiu, 1993; Dweck & Leggett, 1988) has gained increasing attention as an especially influential kind of guiding belief. Dweck and colleagues define implicit theories as core assumptions about the malleability of personal traits and abilities (Dweck & Leggett, 1988;

Molden & Dweck, 2006). By providing an interpretative lens, these theories help shape our understandings, expectations, and reactions to everyday experiences, particularly those involving adversity. They are deemed *implicit* because they are seldom acknowledged or stated outright. Nonetheless, research overwhelmingly supports their effects on our goals, attributions, and behavior (Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013; Hong, Chiu, Dweck, Lin, & Wan, 1999).

The implicit theories that are held by individuals tend to fall at one of two ends of a continuum, with *incremental theories* at one end and *entity theories* at the other (Dweck & Leggett, 1988). In this chapter, as in much of the implicit theories literature, entity and incremental theories are discussed as dichotomies for the sake of convenience; in reality, people hold implicit theories that lie along the continuous entity-to-incremental dimension (Dweck & Sorich, 1999). Incremental theorists believe that personal traits are inherently malleable and thus changeable through effort. In contrast, entity theorists believe that human attributes are fixed and cannot be changed.

To date, the majority of research on implicit theories has focused on beliefs about the malleability of intelligence (e.g., Burnette et al., 2013). Individuals with an entity theory of intelligence are focused on achieving ostensible success—high grades, for example—in order to prove to themselves and others the adequacy of their academic ability (Dweck & Sorich, 1999). For these individuals, perceived academic failure would imply intrinsically low intelligence; thus, they tend to avoid academic challenges and give up quickly in an effort to minimize possible mistakes. In contrast, individuals with incremental theories of intelligence tend to focus on improving their academic ability and acquiring new knowledge, and view failure as a necessary part of the learning process. Individuals' implicit theories of intelligence have been

shown to affect their approach to learning and achievement situations, the kinds of goals they adopt, and their academic achievement. For example, the incremental (versus entity) theories of intelligence adopted by children and adolescents have been shown to predict higher exam scores and quicker recoveries from academic setbacks (Blackwell, Trzesniewski, & Dweck, 2007; Hong et al., 1999). Similarly, returning-to-school adults endorsing incremental (versus entity) intelligence theories have shown less work avoidance and more effort on challenging tasks (Dupeyrat & Marine, 2005). Notably, incremental intelligence theories have predicted achievement over and above standard intelligence measures, including IQ (Dweck & Sorich, 1999), suggesting these beliefs operate independently of cognitive ability.

In recent years, researchers have expanded their focus to implicit theories of human characteristics beyond intelligence. One fruitful topic of investigation, and the focus of the present chapter, is implicit theories of *personality* (Dweck, 2008; Hong et al., 1995; Chiu, Hong, & Dweck, 1997) – beliefs about one's personal character as set-in-stone or changeable. The term "implicit theories of personality" has been used to refer to individuals' beliefs about the malleability of interpersonal competence (e.g., Rudolph, 2010), moral character (e.g. Chiu, Dweck, Tong, & Fu, 1997; Levy & Dweck, 1999; Miller, Burgoon, & Hall, 2007), social status (e.g., as a 'bully' or a 'victim'; Yeager, Miu, Powers, & Dweck, 2013; Yeager, Trzesniewski, Tirri, Nokelainen, & Dweck, 2011), specific personality traits such as neuroticism and openness (Spinath, Spinath, Riemann, & Angleitner, 2003), as well as one's overall personality, or general character (e.g., Chiu et al., 1997; Markovic, Rose-Krasnor, & Coplan, 2013). For the purposes of this chapter, we adopt an inclusive definition of implicit theories of personality, encompassing beliefs about the malleability about both particular personality-related characteristics *and* personality overall. This definition includes implicit theories of traits such as social skills/status

and moral character, while excluding beliefs about the malleability of non-personality-related traits and experiences, such as intelligence, athletic ability, and emotion.

In the following sections, we first outline established characteristics of implicit theories of personality. We describe ways in which they are (and are not) similar to related constructs and beliefs identified in the psychological literature, as well as to personality traits themselves. We then propose a theoretical framework linking entity and incremental theories of personality to the development and maintenance of mental health problems, specifically through their impacts on attributions, stress-coping, and resilience. To demonstrate how this framework might operate across the lifespan, we review research linking implicit theories of personality with responses to social adversity and mental health-related outcomes in children, adolescents, and adults.

Measurement of Implicit Theories of Personality

Measuring *implicit* beliefs is a challenging endeavor – so how exactly are they measured? Many experimental studies that sought to induce entity or incremental theories (e.g., Chiu et al., 1997) did not measure implicit theories of personality, but instead simply led individuals to believe that personality was either changeable (incremental) or not (entity). An advantage of this approach is that participants are presumably unaware of the study's purpose and that any effects of these beliefs presumably remain implicit. Yet, this approach does not allow for the examination of pre-existing beliefs, which may moderate the impact of the intervention (e.g., Blackwell et al., 2007). The absence of implicit theory measurement in these studies also precludes comparisons between experimental groups: that is, how different groups were in terms of implicit theories after the intervention. Experimental studies in other domains that *did* measure post-induction implicit theories find medium-to-large effect sizes (e.g., $d = 0.86$; Schroder, Moran, Donnellan, & Moser, 2014).

The most common method of measuring implicit theories is via self-report (Dweck, 1999; Dweck, Chiu, & Hong, 1995; Levy, Stroessner, & Dweck, 1998; Levy & Dweck, 1999). Self-report scales typically consist of three to eight statements either coded in an entity or incremental direction, which participants rate using a Likert-type scale (e.g., 1 = *Strongly Disagree*, 6 = *Strongly Agree*). Dweck's earlier work (Chiu et al., 1997; Dweck, 1999) suggested that items should be entity-oriented (e.g., "The kind of person someone is is something very basic about them, and it can't be changed very much") to reduce socially desirable responding to incremental items. Items are then reverse-coded and averaged to create an index of incremental theory endorsement. As noted, Dweck's (1999) conceptualization posits that implicit theories range along a single continuum from entity to incremental.

Internal consistency tends to be adequate (with alpha coefficients above .80 or .90) because many of the items are similar to one another. Although less is known about the retest reliability of implicit theories of personality, implicit theories of intelligence tend to be moderately stable across two weeks (r = .77, Blackwell et al., 2007; r = .80, Dweck et al., 1995) and two to four years (rs from .40 to .60, Pomerantz & Saxon, 2001; rs from .57 to .63, Robins & Pals, 2002). Note that these coefficients are similar to those of the Big Five personality traits (r ~ .51, Roberts & Del Vecchio, 2000). Together, these data indicate implicit theories of intelligence are moderately stable, but again, less is known about implicit theories of personality. Unfortunately, implicit theories scales have not received the type of modern psychometric evaluation that other scales in personality psychology have undertaken. For instance, we are unaware of any studies using item response theory to assess item or scale information or to assess measurement precision along the continuum of entity vs. incremental theory endorsement.

This type of analysis is surely needed in order to better understanding the measurement properties of these scales.

Characteristics of Implicit Theories of Personality

Before describing the links between implicit theories of personality, coping, and mental health, it may be helpful to clarify some basic empirical findings regarding the nature of implicit theories more broadly. First, implicit theories are domain-specific, meaning that people can hold different implicit theories in different domains (e.g., an individual can simultaneously view intelligence as fixed and personality as malleable; Beer, 2002; Chiu et al., 1997; Dweck et al., 1995; Hong, Chiu, Dweck, & Sacks, 1997; Hughes, 2015; Neel & Lassetter, 2015; Spinath et al., 2003; Schroder, Dawood, Yalch, Donnellan, & Moser, 2015, 2016). This domain-specificity also means that mindsets are most strongly related to same-domain outcomes. As one example, Schroder and colleagues (2016) found that alcohol abuse was best predicted by implicit theories of drinking tendencies, whereas anxiety symptoms were best predicted by implicit theories of anxiety. The outcomes most relevant for implicit theories of personality are the perceptions and behaviors enacted in *interpersonal* contexts, including how people initiate, maintain, and repair relationships with others and how well people respond to relational conflicts.

Second, implicit theories of personality are unassociated with personality traits (i.e., Big 5 trait dimensions; Spinath et al., 2003). In other words, the degree to which a person is neurotic or open to new experiences (for instance) generally has little bearing on whether they believe personality is changeable or fixed. This is an important point, because it means that these beliefs are *not* simply a reflection of one's general personality tendencies. In terms of relations with other constructs, implicit theories of personality have some ostensible similarities with perceived control (Rothbaum, Weisz, & Snyder, 1982; Weisz, Francis, & Bearman, 2010) and attributional

style (Abramson, Seligman, & Teasdale, 1978). However, there are at least two differences between implicit theories of personality and cognitive variables like these. First, as noted, implicit theories of personality are domain-specific: they reference beliefs about the malleability of socially-relevant personal traits (as opposed to other kinds of traits, like intelligence). In contrast, the other constructs are domain-general, such that an individual with a negative attributional style would habitually view any kind of stressor as being the result of internal, unchangeable, and global causes. Second, implicit theories of personality are typically conceptualized as broad beliefs about how the world works. That is, an individual with an entity theory of personality believes that personal traits are immutable in general—not for herself alone. In contrast, perceived control and attributional style are measured in explicitly self-referential ways: an individual may view her environment and behavior as outside of her control while believing that others do have such control. These distinctions can help contextualize the potentially unique effects of implicit theories of personality on one's interpretations of and responses to stress.

Finally, implicit theories of personality themselves are malleable and can be shaped by experimental manipulations (Chiu et al., 1997; see Burnette et al., 2013, for a review) and brief interventions (e.g., Miu & Yeager, 2015; Schleider & Weisz, 2016; Yeager, Lee, & Jamieson, 2016). For example, both Miu and Yeager (2015) and Schleider and Weisz (2016) strengthened growth personality mindsets in adolescents through a single-session, self-administered activity, in which adolescents learned about the concept of neuroplasticity (i.e., the brain's concept capacity for change) in support of the notion that personal traits are malleable. (Different iterations of this program and their effects on coping, anxiety, and depression are detailed in the section below.)

Implicit Theories of Personality, Stress Responses, and Mental Health Across the Lifespan

Until recently, much of the work on implicit theories of personality was focused on social stress and academic achievement. Our aim in this chapter is to articulate a way in which these beliefs can be incorporated into models that are intended to improve our understanding of psychopathology and coping. Cognitive vulnerability-stress models offer a potential means of doing just that (Mathews & MacLeod, 2005). These models share the hypothesis that one's characteristic way of attending to and interpreting negative events contributes vulnerability to maladaptive coping strategies—and, in turn, psychopathology—when negative events occur (e.g., Abramson et al., 1978; Beck, 1967; Dodge, 1986; Williams, Watts, MacLeod, & Mathews, 1988). One prominent example is Beck's (1967) cognitive model of depression, wherein dysfunctional attitudes about the self and the world interact with adverse life events to increase hopelessness and depression. Similarly, Abramson, Seligman, and Teasdale (1978) proposed that attributing negative life events to unchangeable, global, and internal causes predisposes individuals to mental health problems, including anxiety, depression, and behavioral problems in the face of environmental stress. Empirical studies lend support to both of these models (Abela & Sarin, 2002; Garber & Flynn, 2001; Hale, Van Der Valk, Engels, & Meeus, 2005; Nolen-Hoeksema, Girgus, & Seligman, 1992; Schleider, Velez, Krause, & Gillham, 2014).

Within cognitive vulnerability-stress models, 'negative life events' include a variety of experiences, including scholastic difficulties, occupational stress, and social rejection. Thus, entity theories of personality may serve as a cognitive vulnerability to such events' adverse effects—particularly maladaptive responses to interpersonal stressors. In several studies, fixed views of personal traits have led to maladaptive attributions following social challenge: for instance, thinking "I must be unlikeable" after a fight with a friend, or "she's a bully/bad person"

after witnessing others engage in harmful behavior (Chiu et al., 1997; Yeager, Johnson, et al., 2014). Entity theorists are likely to view social stressors as indicative of permanent interpersonal deficits. Thus, to these individuals, coping with such stressors may seem impossible or futile: no amount of effort could correct an inherently unlikeable personality or an innate status as a "bully." By fostering these attributions in the face of social stress, entity theories of personality may facilitate feelings of helplessness, "defeat" responses, and passive, emotion-focused coping—all of which have been shown to underlie psychological symptoms and disorders (Alloy et al., 1990; Webb, Miles, & Sheeran, 2012).

Conversely, incremental theories of personality might operate as a cognitive *protective* factor against maladaptive coping and psychopathology. Rather than feeling helpless following social threat, individuals who view their personality as malleable might believe that they can actively alter or improve their social outcomes through effort. For these individuals, interpersonal stress may represent an opportunity for self-improvement—not a sign of fixed social deficiency. Consistent with this possibility, evidence suggests high self-efficacy, or the belief in one's ability to manage and control life events, is linked with higher levels of happiness and lower levels of psychopathology in children and adults (Caprara & Steca, 2005; Constantine, Okazaki, & Utsey, 2004; Gaudiano, Miller, & Herbert, 2007; Muris, 2002; Tonge et al., 2005). Incremental theories of personality might foster higher *interpersonal* self-efficacy, improving one's capacity to cope with social stress. By providing a rationale for persisting in the face of social challenge, these theories may protect against maladaptive social coping and psychopathology.

In the following sections, we outline evidence for how entity and incremental theories of personality might operate as vulnerability and protective factors, respectively, across the

lifespan. We focus on the interpersonal *stressors* that arise during different life stages and how these beliefs shape reactivity to these stressors. We focus first on school-aged children: the youngest group for whom self-report implicit theory questionnaires are well-validated.

Childhood (ages 6 to 11). By the elementary school years, children spend nearly half of their time engaged in social activities among peers (Grusec & Lytton, 1988). During this period, peer groups develop in settings outside the home, often in the absence of direct caregiver supervision (e.g., in school, through organized activities, during free time afterschool). This represents a significant shift from the preschool years, when peer contacts are based at home, daycare, or in arranged play settings (Rubin, Bukowski, & Parker, 1998). Thus, it is during middle childhood that children begin constructing and participating in a separate "social world" with same-aged peers (Gifford-Smith & Brownell, 2002). Peer interactions during this life stage, while facilitating key social-cognitive skills, create a new source of potential stress. School-aged children are increasingly aware of their social identity, particularly in the context of their peer group. They begin to characterize social standing or "reputation" in terms of likeability and acceptance by peer group members (e.g., being popular or unpopular; Hymel, Bowker, & Woody, 1993; Waas & Honer, 1990), as well as the larger social networks with which they identify (Cairns, Xie, & Leung, 1998; Gest, Graham-Bermann, & Hartup, 2001). These developments render social stressors, such as peer rejection or exclusion, more frequent and significant to one's self-concept. Accordingly, children's implicit theories of personality may begin to shape children's interpersonal stress-coping – and, in turn, their emotional and behavioral health – during this life stage.

Consistent with the possibility that implicit theories of personality influence responses to interpersonal stress, several studies suggest that implicit theories of personality shape

attributions, goals, and coping behavior in school-aged children facing social challenge. For example, in a study by Erdley, Cain, Loomis, Dumas-Hines, and Dweck (1997), fourth and fifth grade students auditioned for a pen pal club by writing a letter about friendship. After being initially rejected from the club by a "peer representative," children were asked to audition again by writing a second letter. Compared to children with incremental theories of personality, entity-oriented children were more likely to attribute this rejection to a fixed inability to make friends. Additionally, entity theories of personality predicted more helpless behavior following rejection: entity-oriented children's post-failure letters were significantly shorter than their initial letters, whereas growth-oriented children's post-failure letters were significantly *longer* than their initial letters. Thus, children's entity theories of personality may foster distressing cognitions following peer rejection (e.g., concluding that they are bad at making friends), increasing vulnerability to helpless and passive coping. In contrast, children who view personality as malleable may experience peer rejection as a cue to *increase* their efforts (e.g., try out new strategies for making friends), supporting their use of active, adaptive coping strategies.

More recently, Rudolph (2010) found that beliefs about the malleability of *social competence*, in particular, can similarly shape children's social goals and coping with possible rejection. Compared to incremental-oriented children, entity-oriented children endorsed more social goals focused on *demonstrating* interpersonal competence (e.g., being viewed as 'popular') and fewer social goals focused on *developing* interpersonal competence (e.g., getting to know a friend better). This is akin to the achievement domain, in which entity theories of intelligence tend to predict *performance goals* (i.e., demonstrating competence) and incremental theories predict *mastery goals* (i.e., learning a new skill). Moreover, children with fixed views of social competence demonstrated a stronger need for peer approval than did children who viewed

social competence as malleable. Specifically, entity-oriented children showed a greater a tendency than incremental-oriented children to report diminished self-worth in the face of peer disapproval, suggesting that they were likely driven by a motivation to avoid negative judgments from others. In these ways, implicit theories of personality appear to influence the goals that children adopt in social situations.

In another study, Markovic, Rose-Kransor, and Coplan (2013) tested whether implicit theories of personality moderated the association between shyness and coping styles in school-aged children (mean age = 10.11 years). In general, shyness is associated with increased risk for social-emotional problems, including low self-esteem, anxiety, and depression (Findlay, Coplan, & Bowker, 2009; Prior, Smart, Sanson, & Oberklaid, 2000). In large part, this risk results from shy children's reliance on internalizing coping strategies (e.g., avoidance, self-blame, giving up), following common social stressors, such as making new friends or resolving peer conflict (Burgess, Wojslawowicz, Rubin, Rose-Krasnor, & Booth-LaForce, 2006). Indeed, Markovic et al. (2013) found that the link between shyness and internalizing coping was *twice as large* for children with entity theories than those with incremental theories of personality. This result further supports the conceptualization of entity theories of personality as a cognitive vulnerability factor—and incremental theories of personality as a protective factor—for maladaptive coping and psychological distress.

Overall, the evidence reviewed suggests that children who view personality as fixed are more likely to hold maladaptive social goals and engage in self-defeating appraisals in stressful social situations. These goals and appraisals perpetuate social avoidance, self-blame, and disengagement: coping styles consistently linked to higher levels of psychopathology. Growth-minded children, in contrast, tend to adopt a more optimistic outlook concerning their social

traits that promotes a stronger sense of agency and protects against maladaptive stress-coping following interpersonal challenge. These patterns have been shown to extend, and potentially intensify, throughout the adolescent years, as discussed in the section below.

Adolescence (ages 12-17). The middle and high school years are marked by overwhelming transition, particularly in the social realm. In addition to rapid developments in social-cognitive abilities (Yeates & Selman, 1989) and the onset of puberty (Petersen, 1988), friendships and social standing are highly unstable. Only one third of friendships persist from the last year of elementary school to the first year of middle school (Bukowski & Newcomb, 1984; Hardy, Bukowski, & Sippola, 2002). Similarly, during the first year of high school, roughly 50% of casual friendships differ from one month to the next (Chan & Poulin, 2007). Alongside these shifts, peer victimization grows more pervasive with peer exclusion emerging as a common strategy for gaining social status (Cohen & Prinstein, 2006). As a result, nearly all middle and high school students report feeling victimized by peers to some degree (Faris & Felmlee, 2011). Adolescents also experience more intense and prolonged physiological responses to social-evaluative stress than do younger children (Stroud et al., 2009). Together, these changes may lead some adolescents to interpret interpersonal threat in maladaptive ways, including more fixed attributions about social traits. Some studies suggest that middle and high school-aged adolescents, compared to younger children, increasingly view social attributes—such as niceness, meanness, and moral character—as immutable (Birnbaum, Deeb, Segall, Ben-Eliyahu, & Diesendruck, 2010; Killen, Kelly, Richardson, & Jampol, 2010), particularly adolescents experiencing emotional distress (Schleider & Weisz, 2016). Given these concomitant increases in social threat and fixed personality beliefs, researchers have proposed that an entity theory of personality might be an especially potent vulnerability factor for mental health problems during

adolescence (e.g., Miu & Yeager, 2015; Schleider, Abel, & Weisz, 2015; Yeager, Johnson, et al., 2014).

Indeed, adolescents' entity and incremental theories of personality have predicted very different attributions — and, in turn, different emotional and behavioral trajectories — following social challenge. For example, Yeager, Trzewniewski, and colleagues (2011) tested whether adolescents' beliefs about the malleability of social status (e.g., as a "bully" or a "victim") predicted vengeful responses and shame following peer conflict. Specifically, they hypothesized that fixed-minded adolescents would be more inclined to view a peer who upsets them as a "bad person" and, as a result, to desire revenge. The authors also predicted that entity beliefs about social status would predict greater shame following peer victimization. For instance, an entity-oriented adolescent might be more inclined to attribute peer conflict to personal, permanent interpersonal deficiencies, and to view reconciliation as impossible due to these deficits. Results supported both hypotheses: adolescents who viewed social status as more fixed than malleable expressed significantly more shame and stronger desires for revenge after recalling conflicts with peers, as well as after a hypothetical peer victimization induction. A meta-analysis by Yeager, Miu, Powers, and Dweck (2013) corroborates these findings. Across eight independent samples of high school students, the authors found a significant, indirect effect leading from entity theories of personality to aggressive desires through hostile intent attributions following ambiguous, hypothetical social scenarios. In other words, entity theories of personality increased adolescents' aggressive desires toward others *specifically* by increasing maladaptive, hostile interpretations of peers' intentions and behavior. Separately, Yeager, Johnson and colleagues (2014) found that adolescents with a stronger entity theory of personality reacted to a lab-based peer exclusion paradigm more negatively, reporting more post-exclusion stress, anxiety, and

shame than adolescents with stronger incremental theories of personality. Further, adolescents who began the school year with stronger entity theory of personality reported greater increases in general stress and declines in physical health over the course of the school year—and these trajectories were mediated by maladaptive peer exclusion responses. That is, entity theories shaped subsequent physical and emotional health through their impacts on adolescents' coping with social adversity. In each of these studies, links between implicit theories of personality and attributions, emotions, and behavior were equal for girls and boys, as well as for students from communities with higher versus lower levels of violence. Thus, entity theory of personality appears to be a generalizable vulnerability factor for adverse outcomes following peer stress in adolescence.

However, field-based experimental research with adolescents suggests that these trajectories may be reversible, further supporting an incremental theory of personality as a protective factor during this developmental period. Brief interventions teaching adolescents that personal traits are malleable have reduced maladaptive responses to peer adversity in the short-term and promoted positive psychological outcomes in the longer-term. Although these interventions have varied in length and format — from 25-minute, self-administered programs (e.g., Yeager, Johnson, et al., 2014; Miu & Yeager, 2015; Schleider & Weisz, 2016) to six-session teacher-led workshops (Yeager, Trzewniewski, & Dweck, 2013) —aspects of their contents have been consistent. First, the programs are framed to adolescents not as "interventions" or "treatments", which are potentially stigmatizing terms, but as *opportunities* to help younger students understand helpful concepts about personality and the brain. Second, the programs all emphasize the following points, which are supported by summaries of scientific studies and testimonials from older adolescents: (1) the human brain is plastic and through

learning, our brains have constant capacity for change; (2) our personalities and traits "live" in our brains, because our brains can change, so can our personalities; and (3) changing personal traits is never easy, but it is possible with sustained effort and support from others. Finally, each program includes a "saying is believing" activity designed to promote internalization of the intervention's main message (Aronson, 1999). For instance, in Yeager and colleagues' (2013) iteration of the program, ninth grade students were first asked to write about a recent peer rejection experience. Then, they were instructed to "imagine that the same event you described happened to another student just like you" and write a letter to help this student "understand that they can change and that the things that are happening to them could change," applying the information they learned through the program (Yeager et al., 2013).

In high school student samples, these incremental personality theory interventions have reduced adolescents' aggression three months later, compared to a no-treatment control and a coping skills workshop (Yeager et al., 2013) and predicted more rapid physiological stress recovery from a lab-based social stress task (Yeager, Lee, & Jamieson, 2016). In other studies, these interventions have decreased hostile attributions following ambiguous peer provocation scenarios eight months later, compared to a program teaching incremental theory of athletic skills (Yeager, Miu, et al., 2014). They have also lowered global stress (Yeager, Johnson, et al., 2014) and prevented increases in depressive symptoms (Miu & Yeager, 2015) over the course of a school year, compared to the same incremental theories of athletic skills program (Miu & Yeager, 2015). Recent research suggests that incremental personality theory interventions may also be helpful for younger adolescents experiencing elevated psychological distress (Schleider & Weisz, 2016; Schleider & Weisz, revision under review). Compared to a supportive-therapy control, a 30-minute, self-administered incremental theories of personality intervention

strengthened perceived primary control (the ability to influence objective events through personal effort; Rothbaum et al., 1982) and secondary control (the ability to adapt to uncontrollable, adverse events; Weisz et al., 2010) in early adolescents with elevated internalizing symptoms (i.e., anxiety and depression). In turn, these improvements led to reductions in anxiety and depressive symptoms three months later. Taken together, these results provide additional experimental evidence that an incremental theory of personality might protect against maladaptive stress-coping and mental health problems in adolescents.

In sum, compared to adolescents with incremental beliefs about social traits, adolescents with entity views of these traits tend to fare worse in the face of peer adversity. Further, brief interventions teaching incremental theories of personality have improved emotional and behavioral trajectories for middle- and high-school-aged youth. Because these years are characterized by heightened social instability, peer victimization, and sensitivity to interpersonal stress, entity theory of personality may be a particularly potent cognitive vulnerability factor for adolescents, as compared to younger children or adults. This period may therefore be a promising time to administer interventions teaching growth-oriented views of interpersonal traits. However, these possibilities have not been empirically tested. For example, the impacts of incremental personality theory interventions during childhood, emerging adulthood, and middle/older adulthood are presently unknown. Future studies focused on non-adolescent samples may elucidate these interventions' effects across the lifespan.

Emerging Adulthood and Adulthood. The transition to adulthood, or emerging adulthood, is an important period in the lifespan characterized by transitions of education, residence, romantic partnerships, and the maturation of personality (Arnett, 2007). For many individuals, this period involves moving away from home and living independently from the

family of origin for the first time. Perhaps more so than ever before in their lives, individuals are responsible for initiating and maintaining new relationships as well as generating and implementing strategies to overcome problems or ruptures in these and existing relationships. It is perhaps unsurprising that many mental health problems emerge for the first time during this period (Hunt & Eisenberg, 2010; Kessler et al., 2007). As we have seen in earlier developmental periods, transitions like the one to emerging adulthood involve a number of interpersonal challenges and so implicit theories of personality may be especially important during this period.

As in earlier periods, implicit theories of personality among adults predict important attributions. The foundational studies of implicit theories of personality in adults showed that entity theorists are more confident about making judgments about others on the basis of relatively little information. For example, Chiu et al (1997) had college students read descriptions of people (e.g., as friendly or aggressive) in one scenario and then asked them to make inferences about their behaviors in future situations. Endorsement of the entity theory was a consistent predictor of confident judgments about future behaviors based on prior behaviors (Study 1) or traits (Study 2). Incremental theorists, on the other hand, were more hesitant to infer too much about others based on this limited information. These studies highlight an important attributional difference among entity and incremental theorists: “entity theorists believe that traits are the principal causes of behavior, are reflected in behavior, and can be used to predict behavior” (Plaks, Levy, & Dweck, 2009, p. 1072). In contrast, incremental theorists tend to value the psychological *processes* involved in behaviors (motivations, goals, mood-states) when making predictions about others’ behaviors. This is indeed a fundamental difference between the two theories: entity theorists focus on traits, whereas incremental theorists focus on behaviors.

These beliefs and corresponding attributions therefore have the potential to modulate expectations and perceptions of others' behaviors in a wide array of situations. In fact, these beliefs should have some influence on *any* situation that involves other people, especially when conflicts arise. Again, entity theorists do not expect others can change, so efforts to reconcile conflicts seem futile. Many studies of implicit theories of personality among adults have focused on how these theories promote particular coping strategies and reactivity to *interpersonal relationship conflict.* Recall that Dweck's (1999) framework posits that incremental theorists are more likely to seek out solutions to challenges, whereas entity theorists are more likely to feel helpless and disengage when tasks become challenging. Findings from several studies indicate that individuals with an incremental theory of personality are more likely to put in additional effort to encourage relationship growth when conflicts arise. In contrast, entity theorists may be more likely to use minimizing coping strategies (e.g., compromising) to avoid future negative interactions (e.g., Chan, Sit, & Lau, 2014; Kammrath & Dweck, 2006).

Of course, emerging adulthood and adulthood are the developmental periods when many are expected to settle down with a romantic partner. A number of studies have examined how implicit theories of personality influence reactivity to romantic partner discord. For instance, incremental theorists are more likely to express negative feelings with romantic partners to facilitate discussion when conflicts arise (Kammrath & Dweck, 2006). In contrast, individuals with entity theories are more likely to engage in "loyalty responding", which is characterized by quiet forgiveness, acceptance, and accommodation. Although less likely to perpetuate conflict in the short-term, loyalty responding may not allow the individual the appropriate space he/she needs to voice their feelings appropriately. A recent set of studies by Howe and Dweck (2016) examined how implicit theories of personality impact responses to interpersonal rejections.

Adults recruited from Amazon's mTurk completed surveys about implicit theories of personality and described instances when they had been rejected. Findings indicated that reflecting on past rejections led entity theorists to feel as if their self-definition had changed and that future rejection and negative feelings were likely.

Other research has found that implicit theories of *relationships* have a similar impact on responses to relationship conflict. This research has distinguished "destiny beliefs" – the idea that potential relationship partners are either compatible or they are not – from "growth beliefs" – the idea that relationship challenges can be overcome and that the relationship can even be strengthened by such conflicts (Knee, 1998; Knee, Patrick, & Lonsbary, 2003). Growth beliefs have been found to be most helpful in the context of negative emotional states – for instance, growth beliefs are related to higher level of commitment in the face of conflict (Knee, Patrick, Vietor, & Neighbors, 2004). The idea that relationship challenges are opportunities for relationship strengthening seems to be a robust buffer against relational distress (see also Knee, Nanayakkara, Victor, Neighbors, & Patrick, 2001). In this way, implicit theories of relationships – close cousins of implicit theories of personality – may also act as cognitive vulnerability / protective factors in terms of responses to interpersonal conflict.

Thus far, we have discussed research in adults demonstrating that entity theorists are more likely to avoid emotional discussions following interpersonal conflicts because they view meaningful relationship change as unlikely. In addition to these avoidance tendencies, entity and destiny theorists are also more likely to engage in aggressive or even violent behaviors. In one study, entity theorists attributed hypothetical criminal behaviors to internal (trait-like) characteristics of offenders and held higher expectations of recidivism, both of which led to stronger punishment endorsements (Tam, Shu, Ng, & Tong, 2013). In another study, implicit

theories of relationships were shown to moderate the relation between ostracism and aggressive affect and behaviors, in which those holding destiny beliefs were more likely to aggress toward others following ostracism (Chen, DeWall, Poon, & Chen, 2012). In both cross-sectional and longitudinal studies, Cobb, DeWall, Lambert, and Fincham (2013) found that growth beliefs of relationships protected against close relationship violence. These authors found that this association was mediated by an increased satisfaction with sacrificing one's self-interest for the betterment of the relationship among growth relationship theorists. More generally, this research suggests entity theorists quickly put the entire relationship into question, whereas incremental theorists consider additional options when interpersonal conflicts arise. This may lead entity theorists to adopt behaviors designed to protect their sense of self – with either avoidance or aggression.

Given that the incremental theory of personality is linked with adaptive strategies when interpersonal conflicts arise, one may ask whether this mindset is simply reflective of a higher overall level of adjustment or psychological health. Indeed, individuals with low self-esteem also have relationship problems and are more likely to aggress toward others (e.g., Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). However, this is unlikely to be a reasonable explanation. First, correlations between the incremental theory of personality and global self-esteem are small and actually *negative,* which is inconsistent with this notion (e.g., Dweck et al., 1995; Howe & Dweck, 2016; Renaud & McConnell, 2007). Second, studies examining relations between implicit theories of personality and psychological symptoms among adults tend to find weak coefficients. For instance, in a sample of 210 college students, Schroder et al. (2015) found that implicit theories of personality were negatively related to symptoms of worry, anhedonic depression, and interpersonal problems, but these coefficients were small in size (ranging from -

.15 to -.17) and were no longer statistically significant when other implicit theories (of anxiety, intelligence, and emotion) were controlled in the analysis. Personality theories were not significantly related to somatic anxiety or social anxiety. In a study of 405 college students examining worry, social anxiety, somatic anxiety, depression, and alcohol problems, Schroder, Dawood, Yalch, Donnellan, and Moser (2016) also found small and mostly non-significant correlations (ranging from .04 to -.16). Rosenberg et al. (2016) found that among a mixed sample of adolescents and emerging adults (total N = 140) implicit theories of personality were not significantly related to self-reported internalizing (r = -.02) or externalizing (r = -.13) problems. In sum, direct relations between implicit theories of personality and overall adjustment and psychological symptoms appear to be rather small. Thus, it is not the case that these beliefs simply reflect overall adjustment or psychological health.

Taken together, the findings just reviewed suggest that implicit theories of personality continue to play an important role in interpersonal relationship conflict management in emerging adulthood and adulthood. To summarize, because entity theorists view themselves and others as static and unchanging, they are more likely to feel threatened by relational conflicts, because in their view, these conflicts reflect *unchangeable problems in the other, the self, or in the relationship.* They then tend to adopt avoidant and passive or aggressive responses to such conflicts, which ironically leads to further conflict and distress. On the other hand, those who espouse the incremental theory of personality, or the growth belief of relationships, are more apt to treat relational conflicts as learning opportunities. These individuals are more likely to communicate their feelings appropriately in an effort to repair the relationship. Together, findings in adults are similar to earlier developmental periods in that these beliefs may be

important cognitive vulnerability and protective factors in terms of reactions to interpersonal discord.

What about middle age and older adults? How do implicit theories of personality operate in these important life stages? Unfortunately, we are not aware of any empirical studies examining this question. However, we would estimate that these theories are just as important, as there are often novel interpersonal situations in these periods. For instance, many adults become parents and eventually grandparents, which opens up exciting avenues for research: what effects do parents' implicit theories have on their offspring? How are implicit theories *transmitted* from parents to offspring? One study found that parents' entity theories of intelligence were directly associated with children's social anxiety (Schleider, Schroder, et al., in press) but that study did not assess implicit theories of personality. To be sure, future studies will need to evaluate how implicit theories of personality impact interpersonal functioning among people of all ages.

Conclusions and Future Directions

We all face social stressors at various points in our lives. To make sense of and cope with them, we rely on our guiding beliefs about the interpersonal world. Implicit theories of personality represent one such belief system that can powerfully shape attributions, stress-coping, and mental health in the face of interpersonal challenge. We have proposed that entity and incremental theories of personality may operate as cognitive vulnerability and protective factors, respectively, for the development and maintenance of mental health problems--specifically when social adversity occurs. In reviewing research on children, adolescents, and adults, we aimed to demonstrate this model's applicability across multiple stages of life. Although the literature discussed is informative, we are far from achieving a comprehensive picture of relations between implicit theories of personality, social stress-coping, and mental

health across development. Below, we highlight three promising directions for future work examining these relations, as well as their potential applications to preventing and reducing psychopathology.

(1) Develop new measurement modalities for implicit theories of personality. Self-report measures of implicit characteristics have their limitations, and future research should develop new methods of assessing these beliefs. Using novel measurement techniques would also help further refine and expand the construct validity and nomological net of implicit theories of personality. One potential avenue may be applying the implicit association test (IAT, Greenwald, McGhee, & Schwartz, 1998), a two-choice task in which attributes are paired with various types of stimuli. The IAT has been used to uncover a number of different evaluative biases that are often not consciously expressed, making it particularly promising for the measurement of implicit beliefs. As we have seen in this chapter, there are several ways in which implicit beliefs of personality exert their influence. It is likely that they have a similar impact on how individuals communicate with one another. Another means of measuring implicit theories of personality may be to analyze language consistent with these beliefs. Using a formal coding scheme such as Linguistic Inquiry and Word Count (LIWC, Pennebaker, Francis, & Booth, 2007) may help identify linguistic markers of entity and incremental theories. For instance, it is possible that phrases such as "she's just that type of person" reflect an entity theory of personality. This type of linguistic analysis has been applied to other implicit theory domains such as intelligence and has made for some rather important and straightforward advice regarding praise for performance (e.g., Mueller & Dweck, 1998). This type of analysis therefore offers a fascinating opportunity for work in the personality/interpersonal domain. Ultimately,

using multiple means of capturing implicit beliefs will likely be an important next methodological step.

(2) Expand existing research linking implicit theories of personality, social stress-coping, and psychopathology beyond adolescence. Extant research linking implicit theories of personality to interpersonal stress responses has focused on adolescent populations. Indeed, as discussed above, there are empirical and theoretical reasons that an entity theory of personality may be a potent vulnerability factor for psychopathology during the adolescent years. However, each stage of life discussed here – childhood, adolescence, and adulthood – is characterized by a unique set of interpersonal challenges, and implicit theories of personality have been shown to interact with these challenges across development. Accordingly, there is a need for a more inclusive developmental framework linking implicit theories of personality to responses to social adversity: one that extends beyond the adolescent years. At present, there is a dearth of research on links between implicit theories of personality, social stress coping, and mental health in non-adolescent populations (particularly adults), raising many questions about how these associations might change across the lifespan. For example: are entity theories linked to maladaptive social stress responses *to the same degree* in children, adolescents, and adults? If not, to what degree does this association change over time? What additional psychological processes develop during emerging adulthood that mediate relations between implicit theories of personality and relevant outcomes? Do fixed views of social traits remain equally malleable across the lifespan, or is there an "ideal" developmental period during which to administer interventions concerning incremental theories of personality? Relatedly, can these interventions improve emotional and behavioral outcomes in younger children or adults? If not, might developmentally-informed adaptations to the existing interventions render them effective for these populations? Future

longitudinal, experimental, and intervention studies including non-adolescent samples are needed to address these questions.

(3) Incorporate implicit theories of personality into clinical psychology research. To understand how implicit theories of personality relate to the etiology and treatment of mental health problems, it will be crucial to examine these theories in clinical populations. Overall, there is an association between entity theories of personality and psychological symptoms (Schleider, Abel, & Weisz, 2015) that may change over the course of development. However, additional work is needed to unpack the nature of this association. For example, are fixed beliefs about interpersonal traits more characteristic or predictive of some disorders than others? Relative to other cognitive vulnerability factors for mental illness, such as a hopeless attributional style or low perceived control, how strongly does entity theory of personality predict the onset of various psychological disorders? Research exploring such questions in clinical samples may elucidate whether, and how, implicit theories of personality may inform novel mental health treatment and prevention efforts. Studies measuring patients' implicit theories of personality throughout psychotherapy may also support this goal. Such work may reveal whether baseline entity theories of personality predict psychological treatment response, or whether reductions in these theories mediate greater symptom reductions over the course of therapy. Recent studies of implicit theories in other domains have found evidence that these beliefs do in fact matter for psychotherapy outcomes. Valentiner et al. (2013) found that incremental theories of shyness predicted greater symptom reduction in exposure therapy for adults with an anxiety disorder. Moreover, initial evidence suggests that an incremental personality theory intervention may be helpful for early adolescents experiencing elevated anxiety and depressive symptoms (Schleider & Weisz, 2016; Schleider & Weisz, revision under review). However, replication of these results

is needed, and the utility of such interventions for younger children and adults experiencing psychopathology remains unexplored.

Additionally, because a significant portion of individuals with psychopathology will require more care than a brief incremental theories intervention can provide, it is possible that such an intervention may be a useful adjunct to longer-term treatments. As an example, cognitive-behavioral therapy (CBT) -- widely considered the gold-standard treatment for anxiety and depression (Beck, 2005; Hoffman & Smits, 2008; Weisz, Ng, Lau, Rutt, & Masland) -- is rooted in the idea that personal change is possible. Specifically, CBT theory suggests that one's symptoms are not fixed aspects of one's character, but rather are malleable and reducible through directed effort and support. Administering a brief incremental personality theory intervention at the start of this change-focused therapy might enhance patients' buy-in to the CBT model, serve as a rationale for increased effort in and out of sessions, and ultimately support positive treatment response. Future evaluations of incremental theory of personality interventions, both as stand-alone programs and as adjuncts to traditional treatment, may clarify their ability to help reduce psychological symptoms and disorders. Ultimately, combined with longitudinal and experimental work, such evaluations may clarify the strength of incremental theories of personality as cognitive protective factors for maladaptive coping and psychopathology in children, adolescents, and adults.

References

Abela, J. R., & Sarin, S. (2002). Cognitive vulnerability to hopelessness depression: A chain is only as strong as its weakest link. *Cognitive Therapy and Research*, *26*, 811-829.

Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: critique and reformulation. *Journal of Abnormal Psychology*, *87*, 49-74.

Alloy, L. B., Kelly, K. A., Mineka, S., & Clements, C. M. (1990). Comorbidity of anxiety and depressive disorders: A helplessness-hopelessness perspective. In J. D. Maser & C. R. Cloninger (Eds.), *Comorbidity of mood and anxiety disorders* (pp. 499-543). Washington, DC: American Psychiatric Press.

Arnett, J. J. (2007). Emerging adulthood: What is it, and what is it good for? *Child Development Perspectives, 1,* 68-73.

Aronson, E. (1999). The power of self-persuasion. *American Psychologist*, *54*, 875-884.

Beck, A. T. (2005). The current state of cognitive therapy: A 40-year retrospective. *Archives of General Psychiatry*, *62*, 953-959.

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. Philadelphia, PA: University of Pennsylvania Press.

Beer, J. S. (2002). Implicit self-theories of shyness. *Journal of Personality and Social Psychology*, *83*, 1009-1024.

Blackwell, L., Trzesniewski, K., & Dweck, C.S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*, 246-263.

Birnbaum, D., Deeb, I., Segall, G., Ben-Eliyahu, A., & Diesendruck, G. (2010). The development of social essentialism: The case of Israeli children's inferences about Jews and Arabs. *Child Development*, *81*, 757-777.

Caprara, G. V., & Steca, P. (2005). Affective and social self-regulatory efficacy beliefs as determinants of positive thinking and happiness. *European Psychologist*, *10*, 275-286.

Constantine, M. G., Okazaki, S., & Utsey, S. O. (2004). Self-concealment, social self-efficacy, acculturative stress, and depression in African, Asian, and Latin American international college students. *American Journal of Orthopsychiatry*, *74*, 230-241.

Bowlby, J. (1973). *Attachment and loss, vol. II: Separation*. New York, NY: Basic Books.

Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2014). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, *78*, 246-263.

Bukowski, W. M., & Newcomb, A. F. (1984). Stability and determinants of sociometric status and friendship choice: A longitudinal perspective. *Developmental Psychology*, *20*, 941-952.

Burnette, J. L., O'Boyle, E. H., Vanepps, E. M., Pollack, J. M., & Finkel, E. J. (2013). Mind-sets matter: A meta-analytic review of implicit theories and self-regulation. *Psychological Bulletin*, *139*, 655-701.

Cairns, R., Xie, H., & Leung, M. C. (1998). The popularity of friendship and the neglect of social networks: Toward a new balance. *New Directions for Child and Adolescent Development*, *81*, 25-53.

Cassidy, J. (2000). The complexity of the caregiving system: A perspective from attachment theory. *Psychological Inquiry*, *11*, 86-91.

Chan, A., & Poulin, F. (2007). Monthly changes in the composition of friendship networks in early adolescence. *Merrill-Palmer Quarterly*, *53*, 578-602.

Chan, J. C. Y., Sit, E. N. M., & Lau, W. M. (2014). Conflict management styles, emotional intelligence and implicit theories of personality and nursing students: A cross-sectional study. *Nurse Education Today, 34,* 934-939.

Chen, Z., DeWall, C. N, Poon, K., & Chen, E. (2012). When destiny hurts: Implicit theories of relationships moderate aggressive responses to ostracism. *Journal of Experimental Social Psychology, 48,* 1029-1036.

Chiu, C. Y., Dweck, C. S., Tong, J. Y. Y., & Fu, J. H. Y. (1997). Implicit theories and conceptions of morality. *Journal of Personality and Social Psychology*, *73*, 923-940.

Chiu, C., Hong, Y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of Personality and Social Psychology, 73*, 19-30.

Cobb, R. A., DeWall, C. N., Lambert, N. M., & Fincham, F. D. (2013). Implicit theories of relationships and close relationships violence: Does believing your relationship can grow relate to lower perpetration of violence? *Personality and Social Psychology Bulletin, 39,* 279-290.

Cohen, G. L., & Prinstein, M. J. (2006). Peer contagion of aggression and health risk behavior among adolescent males: An experimental investigation of effects on public conduct and private attitudes. *Child Development*, *77*, 967-983.

Crick, N. R., & Dodge, K. A. (1996). Social information-processing mechanisms in reactive and proactive aggression. *Child Development*, *67*, 993-1002.

Dodge, K. A. (1986). A social information processing model of social competence in children. In M. Perlmutter (Ed.), *Minnesota symposium on child psychology* (Vol. 18, pp. 77-125). Hillsdale, NJ: Lawrence Erlbaum.

Donnellan, M.B., Trzesniewski, K.H., Robins, R.W., Moffitt, T.E., & Caspi, A. (2005). Low self-esteem is related to aggression, antisocial behavior, and delinquency. *Psychological Science, 16,* 328-335.

Downey, G., Lebolt, A., Rincón, C., & Freitas, A. L. (1998). Rejection sensitivity and children's interpersonal difficulties. *Child Development*, *69*, 1074-1091.

Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality and development.* Philadelphia, PA: Psychology Press.

Dweck, C. S. (2008). Can personality be changed? The role of beliefs in personality and change. *Current Directions in Psychological Science*, *17*, 391-394.

Dweck, C. S., Chiu, C., & Hong, Y. (1995). Implicit theories: Elaboration and extension of the model. *Psychological Inquiry*, *6*, 322-333.

Dweck, C. S., Hong, Y., & Chiu, C. (1993). Implicit theories individual differences in the likelihood and meaning of dispositional inference. *Personality and Social Psychology Bulletin*, *19*, 644-656.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*, 256-273.

Dweck, C. S., & Sorich, L. (1999). Mastery-oriented thinking. *Coping*, *11*, 232-251.

Dupeyrat, C., & Marine, C. (2005). Implicit theories of intelligence, goal orientation, cognitive engagement, and achievement: A test of Dweck’s model with returning to school adults. *Contemporary Educational Psychology*, *30*, 43-59.

Erdley, C. A., Cain, K. M., Loomis, C. C., Dumas-Hines, F., & Dweck, C. S. (1997). Children's social goals and implicit theories as predictors of their responses to social failure. *Developmental Psychology*, *33*, 263-272.

Faris, R., & Felmlee, D. (2011). Status struggles network centrality and gender segregation in same-and cross-gender aggression. *American Sociological Review*, *76*, 48-73.

Findlay, L. C., Coplan, R. J., & Bowker, A. (2009). Keeping it all inside: Shyness, internalizing coping strategies and socio-emotional adjustment in middle childhood. *International Journal of Behavioral Development*, *33*, 47-54.

Gaudiano, B. A., Miller, I. W., & Herbert, J. D. (2007). The treatment of psychotic major depression: is there a role for adjunctive psychotherapy? *Psychotherapy and psychosomatics*, *76*, 271-277.

Garber, J., & Flynn, C. (2001). Predictors of depressive cognitions in young adolescents. *Cognitive Therapy and Research*, *25*, 353-376.

Gest, S. D., Graham, Bermann, S. A., & Hartup, W. W. (2001). Peer experience: Common and unique features of number of friendships, social network centrality, and sociometric status. *Social Development*, *10*, 23-40.

Gifford-Smith, M. E., & Brownell, C. A. (2003). Childhood peer relationships: Social acceptance, friendships, and peer networks. *Journal of School Psychology*, *41*, 235-284.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74,* 1464-1480.

Grusec, J. E., & Lytton, H. (1988). Socialization and the family. In J.E. Grusec & H. Lytton (Eds.), *Social Development: History, Theory, and Research* (pp. 161-212). New York, NY: Springer.

Hale, W. W., Van Der Valk, I., Engels, R., & Meeus, W. (2005). Does perceived parental rejection make adolescents sad and mad? The association of perceived parental rejection with adolescent depression and aggression. *Journal of Adolescent Health*, *36*, 466-474.

Hardy, C. L., Bukowski, W. M., & Sippola, L. K. (2002). Stability and change in peer relationships during the transition to middle-level school. *The Journal of Early Adolescence*, *22*, 117-142.

Heider, F. (1958) *Interpersonal relations.* New York, NY: Wiley.

Hofmann, S. G., & Smits, J. A. (2008). Cognitive-behavioral therapy for adult anxiety disorders: a meta-analysis of randomized placebo-controlled trials. *The Journal of Clinical Psychiatry*, *69*, 621-632.

Hong, Y., Chiu, C., Dweck, C. S., Lin, D., & Wan, W. (1999). Implicit theories, attributions, and coping: A meaning system approach. *Journal of Personality and Social Psychology*, *77*, 588-599.

Hong, Y. Y., Chiu, C. Y., Dweck, C. S., & Sacks, R. (1997). Implicit theories and evaluative processes in person cognition. *Journal of Experimental Social Psychology*, *33*, 296-323.

Howe, L. C., & Dweck, C. S. (2016). Changes in self-definition impede recovery from rejection. *Personality and Social Psychology Bulletin, 42,* 54-71.

Hughes, J. S. (2015). Support for the domain specificity of implicit beliefs about persons, intelligence, and morality. *Personality and Individual Differences, 86,* 195-203.

Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health, 46,* 3-10.

Hymel, S., Bowker, A., & Woody, E. (1993). Aggressive versus withdrawn unpopular children: variations in peer and self-perceptions in multiple domains. *Child Development*, *64*, 879-896.

Kammrath, K., & Dweck, C. (2006). Voicing conflict: Preferred conflict strategies among incremental and entity theorists. *Personality and Social Psychology, 32,* 1497-1508.

Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Ustam, T. B. (2007). Age of onset of mental disorders: A review of recent literature. *Current Opinion in Psychiatry, 20,* 359-364.

Killen, M., Kelly, M. C., Richardson, C., & Jampol, N. S. (2010). Attributions of intentions and fairness judgments regarding interracial peer encounters. *Developmental Psychology*, *46*, 1206-1213.

Knee, C. R. (1998). Implicit theories of relationships: Assessment and prediction of romantic relationship initiation, coping, and longevity. *Journal of Personality and Social Psychology, 74,* 360-370.

Knee, C. R., Patrick, H., & Lonsbary, C. (2003). Implicit theories of relationships: Orientations toward evaluation and cultivation. *Personality and Social Psychology Review, 7,* 41-55.

Knee, C. R., Patrick, H., Vietor, N. A., & Neighors, C. (2004). Implicit theories of relationships: Moderators of the link between conflict and commitment. *Personality and Social Psychology Bulletin, 30,* 617-628.

Levy, S. R., & Dweck, C. S. (1999). The impact of children's static versus dynamic conceptions of people on stereotype formation. *Child Development*, *70*, 1163-1180.

Levy, S. R., Stroessner, S. J., & Dweck, C. S. (1998). Stereotype formation and endorsement: The role of implicit theories. *Journal of Personality and Social Psychology, 74,* 1421-1436.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development*, *50*, 66-104.

Markovic, A., Rose-Krasnor, L., & Coplan, R. J. (2013). Shy children's coping with a social conflict: The role of personality self-theories. *Personality and Individual Differences*, *54*, 64-69.

Mathews, A., & MacLeod, C. (2005). Cognitive vulnerability to emotional disorders. *Annual Review of Clinical Psychology*, *1*, 167-195.

Miller, C. H., Burgoon, J. K., & Hall, J. R. (2007). The effects of implicit theories of moral character on affective reactions to moral transgressions. *Social Cognition*, *25*, 819-832.

Miu, A. S., & Yeager, D. S. (2015). Preventing symptoms of depression by teaching adolescents that people can change: Effects of a brief incremental theory of personality intervention at 9-month follow-up. *Clinical Psychological Science*, *3*, 726-743.

Molden, D. C., & Dweck, C. S. (2006). Finding "meaning" in psychology: A lay theories approach to self-regulation, social perception, and social development. *American Psychologist*, *61*, 192-203.

Mueller, C. M., & Dweck, C. S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology, 75,* 33-52.

Muris, P. (2002). Relationships between self-efficacy and symptoms of anxiety disorders and depression in a normal adolescent sample. *Personality and Individual Differences*, *32*, 337-348.

Neel, R., & Lassetter, B. (2015). Growing fixed with age: Lay theories of malleability are target age-specific. *Personality and Social Psychology Bulletin, 41,* 1505-1522.

Nolen-Hoeksema, S., Girgus, J. S., & Seligman, M. E. (1992). Predictors and consequences of childhood depressive symptoms: A 5-year longitudinal study. *Journal of Abnormal Psychology*, *101*, 405-422.

Pennebaker, J. W., Booth, R. J., & Francis, M. E. (2007). LIWC2007: Linguistic inquiry and word count. *Austin, Texas: liwc. net*.

Petersen, A. C. (1988). Adolescent development. *Annual Review of Psychology*, *39*, 583-607.

Plaks, J. E., Levy, S. R., & Dweck, C. S. (2009). Lay theories of personality: Cornerstones of meaning in social cognition. *Social and Personality Psychology Compass, 3/6,* 1069-1081.

Pomerantz, E. M., & Saxon, J. L. (2001). Conceptions of ability as stable and self-evaluative processes: A longitudinal examination. *Child Development, 72,* 152-173.

Prior, M., Smart, D., Sanson, A., & Oberklaid, F. (2000). Does shy-inhibited temperament in childhood lead to anxiety problems in adolescence? *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*, 461-468.

Renaud, J. M., & McConnell, A. R. (2007). Wanting to be better but thinking you can't: Implicit theories of personality moderate the impact of self-discrepancies on self-esteem. *Self and Identity, 6,* 41-50.

Roberts, B. W., & DelVecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin, 126,* 3-25.

Robins, R. W., & Pals, J. L. (2002). Implicit self-theories in the academic domain: Implications for goal orientation, attributions, affect, and self-esteem change. *Self and Identity, 1,* 313-336.

Rosenberg, E. R., Burt, K. B., Forehand, R. L., & Paysnick, A. A. (2016). Youth self-views, coping with stress, and behavioral/emotional problems: The role of incremental self-theory. *Journal of Child and Family Studies, 25,* 1713-1723.

Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*, *42*, 5-37.

Rubin, K. H., Bukowski, W. M., & Parker, J. G. (1998). Peer interactions, relationships, and groups. In W. Damon & N. Eisenberg (Eds.), *Handbook of Child Psychology, Vol. 3*. *Social, Emotional, and Personality Development* (pp. 619-700). New York, NY: John Wiley & Sons.

Rubin, K. H., Wojslawowicz, J. C., Rose-Krasnor, L., Booth-LaForce, C., & Burgess, K. B. (2006). The best friendships of shy/withdrawn children: Prevalence, stability, and relationship quality. *Journal of Abnormal Child Psychology*, *34*, 139-153.

Rudolph, K. D. (2010). Implicit theories of peer relationships. *Social Development*, *19*, 113-129.

Rydstedt, L. W., Devereux, J., & Furnham, A. F. (2004). Are lay theories of work stress related to distress? A longitudinal study in the British workforce. *Work & Stress*, *18*, 245-254.

Schleider, J. L., Abel, M. R., & Weisz, J. R. (2015). Implicit theories and youth mental health problems: A random-effects meta-analysis. *Clinical Psychology Review*, *35*, 1-9.

Schleider, J. L., Schroder, H. S., Lo, S. L., Fisher, M. E., Danovitch, J. H., Weisz, J. R., & Moser, J. S. (in press). Parents' intelligence mindsets relate to child internalizing problems: Moderation through child gender. *Journal of Child and Family Studies.*

Schleider, J. L., & Weisz, J. R. (2016). Implicit theories relate to youth psychopathology, but how? A longitudinal test of two predictive models. *Child Psychiatry & Human Development*, 47, 603-617.

Schleider, J. L., & Weisz, J. R. (2016). Reducing risk for internalizing problems in adolescents: Impacts of a single-session intervention teaching that personality can change. *Behaviour Research and Therapy*, *87*, 170-181.

Schleider, J. L., & Weisz, J. R. (revision under review). *Modifying mindsets for youth mental health: An RDoC-guided randomized controlled trial*.

Schleider, J. L., Vélez, C. E., Krause, E. D., & Gillham, J. (2014). Perceived psychological control and anxiety in early adolescents: The mediating role of attributional style. *Cognitive Therapy and Research*, *38*, 71-81.

Schroder, H. S., Dawood, S., Yalch, M. M., Donnellan, M. B., & Moser, J. S. (2015). The role of implicit theories in mental health symptoms, emotion regulation, and hypothetical treatment choices in college students. *Cognitive Therapy and Research*, *39*, 120-139.

Schroder, H. S., Dawood, S., Yalch, M. M., Donnellan, M. B., & Moser, J. S. (2016). Evaluating the domain specificity of mental health-related mindsets. *Social Psychological and Personality Science, 7,* 508-520.

Schroder, H. S., Moran, T. P., Donnellan, M. B., & Moser, J. S. (2014). Mindset induction effects on cognitive control: A neurobehavioral investigation. *Biological Psychology*, *103*, 27-37.

Skinner, E. A., Zimmer-Gembeck, M. J., Connell, J. P., Eccles, J. S., & Wellborn, J. G. (1998). Individual differences and the development of perceived control. *Monographs of the society for Research in Child Development*, i-231.

Spinath, B., Spinath, F. M., Riemann, R., & Angleitner, A. (2003). Implicit theories about personality and intelligence and their relationship to actual personality and intelligence. *Personality and Individual Differences*, *35*, 939-951.

Stroud, L. R., Foster, E., Papandonatos, G. D., Handwerger, K., Granger, D. A., Kivlighan, K. T., & Niaura, R. (2009). Stress response and the adolescent transition: Performance versus peer rejection stressors, *Development and Psychopathology, 21*, 47-68.

Tam, K, Shu, T., Ng, H., & Tong, Y. (2013). Beliefs about immutability of moral character and punitiveness toward criminal offenders. *Journal of Applied Social Psychology, 43,* 603-611.

Tonge, B., King, N., Klimkeit, E., Melvin, G., Heyne, D., & Gordon, M. (2005). The self-efficacy questionnaire for depression in adolescents (SEQ-DA). *European Child & Adolescent Psychiatry*, *14*, 357-363

Valentiner, D. P., Jencius, S., Jarek, E., Gier-Lonsway, S. L., & McGrath, P. B. (2013). Pre-treatment shyness mindset predicts less reduction of social anxiety during exposure therapy. *Journal of Anxiety Disorders, 27,* 267-271.

Waas, G. A., & Honer, S. A. (1990). Situational attributions and dispositional inferences: The development of peer reputation. *Merrill-Palmer Quarterly*, *36,* 239-260.

Webb, T. L., Miles, E., & Sheeran, P. (2012). Dealing with feeling: a meta-analysis of the effectiveness of strategies derived from the process model of emotion regulation. *Psychological Bulletin*, *138*, 775-808.

Weisz, J. R., Francis, S. E., & Bearman, S. K. (2010). Assessing secondary control and its association with youth depression symptoms. *Journal of Abnormal Child Psychology*, *38*, 883-893.

Williams, J. M. G., Watts, F. N., MacLeod, C., & Mathews, A. (1988). *Cognitive psychology and emotional disorders*. New York, NY: John Wiley & Sons.

Weisz, J. R., Ng, M. N., Rutt, C., Lau, N., & Masland, S. A. (2013). Psychotherapy for children and adolescents. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (6th ed., pp. 541-586). New York, NY: Wiley.

Yeager, D. S., Johnson, R., Spitzer, B. J., Trzesniewski, K. H., Powers, J., & Dweck, C. S. (2014). The far-reaching effects of believing people can change: implicit theories of personality shape stress, health, and achievement during adolescence. *Journal of Personality and Social Psychology*, *106*, 867-884.

Yeager, D. S., Lee, H. Y., & Jamieson, J. P. (2016). How to improve adolescent stress responses: Insights from integrating implicit theories of personality and biopsychosocial models. *Psychological Science*, *27*, 1078-1091.

Yeager, D. S., Miu, A. S., Powers, J., & Dweck, C. S. (2013). Implicit theories of personality and attributions of hostile intent: A meta-analysis, an experiment, and a longitudinal intervention. *Child Development*, *84*, 1651-1667.

Yeager, D. S., Trzesniewski, K. H., & Dweck, C. S. (2013). An implicit theories of personality intervention reduces adolescent aggression in response to victimization and exclusion. *Child Development*, *84*, 970-988.

Yeager, D. S., Trzesniewski, K., Tirri, K., Nokelainen, P., & Dweck, C. S. (2011). Adolescents' implicit theories predict desire for vengeance after peer conflicts: Correlational and experimental evidence. *Developmental Psychology*, *47*, 1090-1107.

Yeates, K. O., & Selman, R. L. (1989). Social competence in the schools: Toward an integrative developmental model for intervention. *Developmental Review*, *9*, 64-100.