

ABSTRACT

Title of Dissertation: DIRECTIONAL RELATIONS OF CHILD
ANXIETY AND PARENTING ACROSS
EARLY INTERVENTIONS FOR INHIBITED
YOUNG CHILDREN

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Given the robust evidence-base for the efficacy of cognitive behavioral therapies (CBTs) in reducing youth anxiety disorders, researchers have moved beyond efficacy outcome analysis to better understand *how* such interventions operate (i.e., mediation). However, the majority of this research has examined mechanisms of change in CBTs targeting anxiety in school-age youth or adolescents, and applying such findings to younger children may be misguided. Grounded in developmental-transactional models, interventions for younger children with or at risk for anxiety tend to target key parenting and child factors implicated in the early emergence and maintenance of anxiety. Nevertheless, the directional and temporal relations among these child and parenting factors in the context of *early* interventions remain unknown.

The current study thus builds on previous studies of CBT for older youth to elucidate mechanisms of change and treatment directionality within two *early* interventions for young children ($N = 151$) at risk for anxiety by virtue of behavioral inhibition: The multi-component

Turtle Program and the parent-only Cool Little Kids program. Reciprocal relations between parent-reported child anxiety, observed parenting (negative control and positive affect), and parent-reported accommodation of child anxiety were examined across 4 timepoints (pre-, mid-, and post-treatment, and one-year follow-up). Study hypotheses were tested via 1) a traditional cross-lagged panel model (CLPM), 2) a latent curve model with structured residuals (LCM-SR), and 3) a latent change score model (LCS).

Results were consistent with the child-to-parent influences found in previous research on CBT for older anxious youth. However, after extending the traditional CLPM to parse within- and between-person effects in the LCM-SR, these results only remained in Turtle. LCS analyses revealed bidirectional effects of *changes* in parent accommodation and *changes* in child anxiety during and after the intervention, but only in Turtle. Our findings coincide with developmental-transactional models suggesting that the development of child anxiety may be the result of child-to-parent influences rather than just the reverse, and highlight the importance of targeting parent *and* child factors simultaneously in early interventions for young inhibited children and their parents.

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ACROSS EARLY INTERVENTIONS FOR INHIBITED YOUNG CHILDREN

by

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Chapter 1: Background

Introduction

Debilitating and oftentimes chronic (Copeland et al., 2014; Ollendick & Hirshfeld-Becker, 2002), anxiety disorders are one of the most frequently occurring psychological disorders in children and adolescents (Egger & Angold, 2006). Fortunately, there is consistent evidence demonstrating that gold standard treatments, such as cognitive behavioral therapy (CBT), are efficacious in reducing child and adolescent anxiety disorders (Rith-Najarian et al., 2019; Weisz et al., 2017). This body of literature has thus started advancing beyond efficacy outcome analysis to elucidate *why and how* these treatments work, with the goal of identifying mechanisms of change and treatment directionality. Though there is still great need for further investigation into directional dynamics of change in CBT for older youth with anxiety, an understanding of these issues within treatments developed for *younger children* with or at risk for anxiety is especially lacking. This is concerning, as the early age of onset of anxiety is well established (Dougherty et al., 2013), with half of disorders developing before age 6 amongst anxious adolescents (Merikangas et al., 2010). The current study thus builds on previous findings within the school-age and adolescent anxiety CBT literature to examine directional patterns of change within two *early* interventions for inhibited preschool-age children.

Developmental-Transactional Model of Child and Environmental Factors in the Emergence of Child Anxiety

The early onset of anxiety and its adverse long-term consequences (Beesdo et al., 2007; Dougherty et al., 2013; Hussong et al., 2011) have prompted investigation into early risk factors. Decades of research have established child temperament as a foundational, early-emerging characteristic with biological underpinnings that has significant implications for child psychological development (Rothbart et al., 1995). Specifically, behavioral inhibition (BI) is a temperament that manifests as wariness, withdrawal, and avoidance in the context of novel people, places, and objects (Bishop et al., 2003; Kagan et al., 1988). Children with high and stable BI are at increased risk for developing anxiety, namely social anxiety disorder (Chronis-Tuscano et al., 2009; Clauss & Blackford, 2012). However, there is great heterogeneity in developmental outcomes for inhibited youth. Indeed, most children with elevated BI do not go on to develop clinical levels of anxiety (Hirshfeld et al., 1992), indicating that certain factors have the potential to effectuate or weaken the pathway from BI to later anxiety.

Extensively studied theoretical models have highlighted how risk for later anxiety ensues through dynamic transactions between children and their environments. Specifically, overcontrolling, overprotective and intrusive parenting behaviors have long been recognized as fundamental to the emergence and continuity of child anxiety (Degnan et al., 2002; Duchesne et al., 2010; Lewis-Morriarty et al., 2012; Rubin et al., 2002). Such parenting behaviors have also been implicated in moderating the stability of BI over time (Hudson et al., 2011; Johnson et al., 2016). These behaviors contrast with flexible, sensitive parenting that is responsive to child

needs and facilitates child exploration, autonomy, emotion regulation, and social competence. However, research that examines parental influences on child development and omits child influences on parenting implies a unidirectional causal pathway, when these interactions are unquestionably far more complex. Indeed, the developmental literature largely recognizes that *bidirectional and transactional interactions* between child and parent factors shape the developmental cascade toward later anxiety and impairment (Sameroff, 2010). That is, just as parent behaviors have been shown to predict anxiety and the stability of BI, inhibited children also have been shown to elicit overprotective responses from their parents (i.e., bidirectional pathways comprised of at least 2 timepoints; Hastings & Rubin, 1999). Parental overprotective responses then have the potential to predict subsequent child behaviors (i.e., transactional pathways comprised of at least 3 timepoints; Kiel & Buss, 2009, 2011; Liu et al., 2019).

To simultaneously capture the dynamic bidirectional and transactional interplay between child and parent factors and how they unfold across development, researchers have moved toward examining *reciprocal* models. In regard to the emergence and maintenance of anxiety, this model highlights how inhibited children pull for parental support and protection in the face of fear and novelty.

Simultaneously, parents come to perceive their inhibited children as vulnerable and incapable of independently coping with anxiety-provoking situations (Dadds & Roth, 2001; Rubin et al., 2009). Inhibited child reactions may inadvertently elicit parent distress or frustration, as well as an innate proclivity to quell child distress. Instead of providing an appropriate level of comfort to scaffold coping skills and encourage child autonomy, parents subsequently respond to their inhibited children in ways that

are overly protective and intrusive for the situation (Kiel & Buss, 2012, 2014). Alleviating child distress may serve to compound child avoidance and the likelihood for continued bids for parental reassurance. Concurrently, negative reinforcement of parental distress or frustration sets the stage for future accommodation of child anxiety (Dadds & Roth, 2001; Rubin et al., 2009). Ultimately, limiting opportunities to approach new situations may occasion a trajectory leading to anxiety (Rubin et al., 2009). What's more, having lacked opportunities to grasp developmentally-appropriate social skills, inhibited children go on to display less social competence and assertiveness as they navigate the peer context, making them visible targets for peer victimization, and in turn, exacerbating risk for loneliness, lower self-esteem, and depression (Bohlin et al., 2005; Gazelle & Faldowski, 2014; Rubin et al., 2003). Despite the transactional nature of these parent and child factors, research has largely focused on unidirectional parent-to-child pathways. Examining these interactions through reciprocal transactional pathways allows for the identification of mechanisms by which parent and child factors act upon one another to influence child adaptation across time.

Early Interventions for Young Children With or at Risk for Anxiety

In keeping with this developmental-transactional model, targeting parent behaviors as well as child coping and social skills has become a hallmark of early interventions for children at-risk for later anxiety. Though CBT delivered via various formats (e.g., individual or group, with or without parent involvement) has been deemed the most well-established treatment approach for anxious school-aged youth and adolescents (Higa-McMillan et al., 2016; Weisz et al., 2017), interventions with preschoolers call for specific developmental considerations (Chronis-Tuscano et al., 2018; Comer et

al., 2019). CBT tends to involve strategies such as thought monitoring to identify negative thinking styles, cognitive restructuring, exposure to feared stimuli, and problem-solving techniques. These skills are posited to improve youth and adolescent anxiety via changes in certain cognitive processes, such as decreases in negative automatic thoughts and increases in coping efficacy (Kendall & Treadwell, 2007; Kendall et al., 2016; Lau et al., 2010). However, these techniques, especially those that are cognitive in nature, may require executive functioning and higher-order logic skills that surpass younger children's developmental abilities (Carpenter et al., 2014). Therefore, established early interventions for younger children tend to emphasize the use of reinforcement systems, incorporate developmentally-appropriate language, and engage children in skill practice through interactive games. This developmentally-grounded approach ensures that cognitive demands are compatible with preschoolers' skillsets and attention spans.

Additionally, though evidence is mixed regarding the benefits of including parents in CBT for school-age youth and adolescents (Barmish & Kendall, 2005; Brienholst et al., 2012), parents tend to play a more focal role in early interventions for younger children with or at risk for anxiety (e.g., by virtue of BI). This is in part due to the central role that certain parenting practices play in the development and maintenance of anxiety in early childhood, which can be targeted through early intervention. Moreover, the preschool developmental period is especially characterized by significant parent involvement, as preschoolers rely heavily on their parents for their physical needs and to serve as external emotion regulators (Carpenter et al., 2014; Chronis-Tuscano et al., 2018; Comer et al., 2019). Thus, in line with developmental-transactional models (e.g., Rubin et al., 2009), early interventions for younger

children with or at risk for anxiety target the environment in which children are embedded through direct parental engagement in treatment (Chronis-Tuscano et al., 2018). This may involve “transferring control” from therapist to parent, such that the parent implements the majority of intervention strategies with the child outside of treatment.

The wide range of factors that put inhibited children at risk for later anxiety highlight the numerous potential levels for intervention, and treatment programs have been developed to target these key risk factors via varying delivery formats. Specifically, systematic review data specifies that Family-Based CBT and Group Parent CBT (which may include concurrent Group Child CBT) are Well-Established and Probably Efficacious treatments for anxiety in younger children, respectively (Comer et al., 2019). Group Parent CBT involves delivering treatment to a group of parents without children present. Sessions include psychoeducation regarding the emergence and persistence of child anxiety, strategies to identify maintaining factors, guidance to develop and implement child exposure hierarchies, and between-session assignments to gradually build skill use and generalization across various contexts. For example, Cool Little Kids (“CLK”; Rapee et al., 2005, 2010) is the most extensively evaluated Group Parent CBT program for parents of inhibited preschool-age children. In addition to the standard treatment components described above, this 6-session program also includes strategies to target parent anxiety through cognitive restructuring. Compared to a no-treatment control group, CLK has been shown to decrease anxiety at 1- and 3-year follow-ups (Rapee et al., 2005, 2010). Further, an 11-year follow-up during mid-adolescence revealed that girls whose parents received

CLK displayed fewer internalizing disorders and symptoms of anxiety compared to controls (Rapee, 2013).

Given evidence that inhibited children may lack developmentally appropriate social skills and thus be at risk for and particularly prone to the effects of aversive peer interactions and peer victimization (Bohlin et al., 2005; Gazelle & Ladd, 2003), researchers have also developed Group Child CBT programs to cultivate early social and coping skills. The Social Skills Facilitated Play program (“SSFP”; Coplan et al., 2010) is a child-only group for inhibited preschoolers that fosters social skills, problem-solving, emotion regulation, and relaxation via unstructured play and age-appropriate didactics. Evaluation of SSFP through a randomized controlled trial (RCT) revealed decreases in observed child reticence and increases in socially competent behaviors in school compared to those in the waitlist control condition (Coplan et al., 2010). Nevertheless, there were no differences between SSFP and waitlist in post-treatment teacher ratings of child reticent and social behaviors.

Finally, Family-Based CBT and Group Parent CBT with concurrent Child Group CBT involve addressing a greater number of parenting and child risk factors simultaneously. Compared to interventions that solely target parenting behaviors or peer interactions implicated in moderating the stability of BI, research investigating the efficacy of combined parent-child interventions is limited (Chronis-Tuscano et al., 2018). In an initial examination of concurrent parent and child groups for inhibited preschoolers, Lau and colleagues (2017) evaluated the effects of CLK and six concurrent sessions of SSFP. Compared to a waitlist control group, children in the intervention group exhibited significant decreases in anxiety severity, number of

anxiety diagnoses, and maternal-reported child anxiety symptoms and impairment (Lau et al., 2017).

Given promising initial findings, the next step in establishing the efficacy of parent-child interventions, and the most rigorous approach, is to compare combined interventions with a well-established parent-only intervention as an active control condition. In a recent large-scale RCT, Chronis-Tuscano and colleagues (2021) compared the parent-only CLK with the multicomponent Turtle Program (Danko et al., 2018). Grounded in the developmental-transactional model of child anxiety, the Turtle Program is an 8-session early intervention for inhibited preschoolers and their parents. The child component of the Turtle Program is an adaptation of SSFP and the parent component is an adaptation of group Parent-Child Interaction Therapy (PCIT; Eyberg, 1988), an evidence-based intervention initially developed to target child externalizing behaviors. Through in-vivo coaching, parents are guided in decreasing anxiogenic parenting and implementing exposures to reduce child anxiety and avoidance, including within the peer group context. In a pilot RCT, Turtle demonstrated significant increases in observed maternal positive affect and significant decreases in parent-reported child anxiety symptoms compared to waitlist control (Chronis-Tuscano et al., 2015). Moreover, Turtle demonstrated significant decreases in teacher-reported child anxiety as well as significant increases in classroom observations of child approach behaviors, indicating generalization of treatment gains to the preschool setting (Barstead et al., 2018). Results of Chronis-Tuscano and colleagues' (2021) large-scale comparison of the Turtle Program and CLK revealed that, though there were significant post-treatment and 1-year follow-up improvements in child anxiety severity, BI, and accommodation of child anxiety

across both groups, there were significant between-group differences found on observed parenting behaviors, with Turtle outperforming CLK.

Treatment Directionality and Mechanisms of Change in Interventions for Anxious

Youth

Despite accumulating evidence for the efficacy of the aforementioned early interventions, there is a dearth of literature examining *how* exactly early interventions for children with or at risk for anxiety *work*. More specifically, though studies have elucidated the temporal unfolding of factors that mutually interact to put children at risk for anxiety, there is little understanding of the reciprocal transactions between *child and parent factors* that unfold across interventions targeting child anxiety. In terms of *early* interventions, it is posited that including parents in treatment will serve to target key parent factors underlying the emergence and persistence of child anxiety, and that changes in parenting precede decreases in child anxiety outcomes. Nevertheless, despite the lack of research regarding child-to-parent effects in the development of child anxiety (see Hastings & Rubin, 1999; Kiel & Buss, 2009, 2011 for exceptions), it is certain that children are not merely passive recipients of parenting, yet there are few studies that have examined how changes in child anxiety influence changes in parent factors in treatment. It may be that changes in parent behaviors serve to influence child anxiety in treatment, yet it is also possible that child responses to treatment produce subsequent changes in parenting (i.e., reductions in child anxiety result in reductions in parental overcontrol). However, in accordance with the developmental-transactional models that inform anxiety treatment, it is also likely that *both* processes are unfolding simultaneously, rather than a single unidirectional pathway. However, little research has aimed to examine the direction

of parent-child change within the context of parent and parent-child interventions targeting anxiety in early childhood. The extant studies that have sought to clarify how child and parent factors influence one another during and following treatment have largely focused on CBT for *school-age youth and adolescents*. Thus, although findings may not hold within early interventions for younger children with or at risk for anxiety, the research described below primarily highlights findings from efficacy trials evaluating CBT with and without parent involvement for older youth.

In general, treatment mediation studies are sparse in the youth CBT literature and are typically restricted to examinations of single putative child mediators in school-age children and adolescents. Indeed, over a decade ago, Silverman and colleagues (2009) called for researchers to test assumptions regarding directionality of parent-child change in CBT for anxious youth, especially when parents are included in treatment. However, there remains a paucity of research examining these processes. This has become especially relevant in the *parent-involvement* CBT (Kendall et al., 2008; Silverman et al., 2009) literature, given that CBTs with substantial parent involvement do not seem to enhance treatment outcomes compared to individual youth CBT (Breinholst et al., 2012; Kendall et al., 2008). Studies have thus shifted to investigating *how* parent-involvement CBTs work (i.e., examining parent and child mediators), including directional links between child and parent factors during and following treatment.

Going beyond preconceived assumptions regarding directional patterns of change to examine contemporaneous reciprocal pathways and potential parent mediators is crucial, as it has the potential to shed light on mechanisms underlying positive child

anxiety treatment outcomes. In one of the first studies to delineate the directionality of change between parent factors (parent anxiety, negative parenting, parent-child conflict) and child anxiety outcomes in parent-involvement CBT, Silverman and colleagues (2009) found evidence suggesting child-to-parent influences, in that pre- to post-treatment decreases in child anxiety preceded decreases in negative parenting from post-treatment to follow-up. Though there was no evidence for mediation, results also revealed significant links between changes in pre- to post-treatment youth anxiety and pre- to post-treatment changes in parent anxiety. In an extension of this work, Settapani and colleagues (2013) found that the direction of change across individual CBT and family CBT flowed from decreases in maternal-reported child anxiety to decreases in maternal anxiety from post-treatment to follow-up. Results also implicated potential parent-to-child influences, such that pre- to post-treatment decreases in maternal psychological control and family affective involvement were linked with post-treatment to follow-up decreases in clinician-rated child anxiety. Though findings across these two studies were not causal in nature, they highlight the importance of examining child-to-parent treatment mechanisms alongside parent-to-child pathways. Most recently, Bertelsen and colleagues (2022) utilized a multilevel bivariate autoregressive cross-lagged panel model (CLPM) to examine the directional relationship between youth anxiety and family accommodation across 10 sessions of CBT for anxious youth ($M_{age} = 15.4$ years). Results revealed a bidirectional relationship between accommodation and child anxiety, underscoring the importance of targeting *both* child anxiety and accommodation to achieve optimal treatment outcomes. Further, child anxiety at one session produced a stronger influence on family accommodation at the following session than vice versa. These findings are

consistent with previous studies (i.e., Settapani et al., 2013; Silverman et al., 2009) indicating that youth may indirectly influence their parents in CBT for anxiety.

Additionally, including an active treatment control condition can shed light on how paths to positive child outcomes may differ across treatment approaches and formats. For instance, in Silverman and colleagues' (2019) comparison of two CBT formats for school-age youth and adolescents, peer-involvement group CBT and parent-involvement CBT produced similar effects on child anxiety outcomes, but through different mechanisms. Most recently, noting the lack of studies examining parent mediators of child CBT outcomes, Silverman and colleagues (2021a) conducted a dismantling study in which they isolated key parent components of parent-involvement CBT. This involved comparing two formats of parent-involvement CBT with individual CBT to best understand how parent involvement might bring about child outcomes. Findings revealed mechanisms by which reductions in parental use of negative reinforcement and parental psychological control influence child anxiety outcomes at follow-up (Silverman et al., 2021a). Such studies not only highlight which parent factors might serve as active treatment ingredients, but also have the potential to inform which treatment components do not contribute to change in order to create more parsimonious interventions. A follow-up study examining directional patterns of parent and child factors within the same efficacy trial suggested both child-to-parent influences as well as indirect parent-to-child influences (Silverman et al., 2021b). Interestingly, a number of the studies described above revealed that treatment directionality differed across parent and child informants, highlighting the importance of collecting data via multiple informants and methods of assessment (De Los Reyes et al., 2015). Additionally, the majority of these studies were limited to

two or three timepoints (pre-treatment, post-treatment and follow-up), setting the foundation for future studies utilizing more frequent data collection to provide a more refined understanding of mediating effects and directionality of changes during and following treatment (Carper et al., 2018; Maric et al., 2012).

Again, though the CBT studies described herein are significant contributions to the school-age and adolescent anxiety literature, it is unclear if the processes by which these CBTs work will translate to *early* interventions for *younger* children with or at risk for anxiety, for which parenting is theorized to play a critical role. Nevertheless, to best move forward in capturing directionality of change within early interventions for younger children, these CBT studies illustrate the crucial need to analyze change across multiple timepoints (i.e., beyond simply pre- and post-treatment, including measurement during treatment), incorporate multiple informants, include an active treatment control, and examine *parenting* mediators implicated in the etiology and persistence of child anxiety.

Gaps in the Literature

Though researchers have explicated how early child and parent influences interact across development to predispose young children for later anxiety, the transactions between these factors within the context of *treatment* remain unclear. A more comprehensive model of treatment mediation dynamics may further illustrate the ways in which child and parent factors unfold across early interventions, and in turn, *how* these treatments ultimately work. However, the foundational studies that have begun to establish how hypothesized relations between various parent and child factors unfold during treatment have solely captured these processes across

interventions for older youth with anxiety. Such findings may be less relevant to early interventions for younger children with or at risk for anxiety, as parent inclusion in treatment differs based on child developmental stage. Though evidence is mixed regarding the benefits of including parents in CBT for school-age youth and adolescents (Silverman et al., 2009; Breinholst et al., 2012), the preschool developmental period is marked by significant child reliance on parents. As such, parenting is a theoretically and empirically (Chronis-Tuscano et al., 2018) relevant variable hypothesized to bring about change in early interventions, and there is consistent support for parent involvement in treatments for young children with or at risk for later anxiety (Comer et al., 2019). Nevertheless, no study to our knowledge has examined directional patterns of change between child and parent factors during and following treatments for young inhibited children, including how anxiolytic parenting behaviors and child anxiety operate to bring about change in one another.

Additionally, the school-age and adolescent CBT literature highlights numerous methodological shortcomings that limit interpretation of previous findings. For example, most efficacy studies assess change from pre- to post-treatment and potentially include a follow-up assessment (Settipani et al., 2013; Silverman et al., 2009, 2019, 2021b), often limiting an examination of mechanisms to three timepoints, maximum. Additionally, few mediation studies measure parent and child factors repeatedly and simultaneously at multiple timepoints during and following child therapy. An approach that allows for each child and parent factor to potentially serve as predictor, moderator, or outcome at any timepoint is more consistent with developmental-transactional models of child psychopathology that highlight reciprocal parent-child interactions (Sameroff, 2010). Indeed, many parenting

intervention mediation studies are framed by the assumption that influence flows from parent to child, underestimating the potential for child-to-parent or bidirectional influences. Finally, most mediation dynamics studies in the child CBT literature have depended on parent-reported parenting or found that child and parent outcomes differed across informants. A multimethod assessment approach is therefore well-suited to limit shared rater variance and assess generalization of treatment gains (Chronis-Tuscano et al., 2018).

The Current Study

We addressed the gaps in the literature described herein by examining reciprocal (i.e., bidirectional and transactional) relations between child anxiety and parenting behaviors across two early interventions for inhibited preschoolers at risk for later anxiety and their parents: The multi-component Turtle Program (Chronis-Tuscano et al., 2015) and the parent-only Cool Little Kids program (Rapee et al., 2005). The current study extends past work by utilizing data collected across 4 timepoints, including both a mid-treatment timepoint (after 4 therapy sessions) as well as a one-year follow-up in addition to pre- and post-treatment assessments. Per best practices for examining mediators of child treatment outcomes (Carper et al., 2018; Maric et al., 2012), the current study employed a multimodal, repeated measures design to examine how one variable predicts another variable later in treatment, and vice versa. Specifically, we propose to fit a series of autoregressive cross-lagged panel models (CLPM) to examine reciprocal relations between parent-reported child anxiety, observed parenting (negative control and positive affect), and parent-reported accommodation of child anxiety.

However, continued criticisms of the CLPM include an inability to parse state-like fluctuations over time (i.e., within-person) and variability that remains stable over time (i.e., between-person), which can result in biased estimates (Curran & Hancock, 2021; Hamaker et al., 2015). Thus, in addition to fitting a series of traditional CLPM, we also utilized a latent curve model with structured residuals (LCM-SR; Curran et al., 2014) to adjust for autoregression and to separate within- and between-person effects (Curran & Hancock, 2021; Hamaker et al., 2015), all of which will help to enhance interpretation of findings (Falkenström et al., 2020). Finally, we sought to not only capture dynamic processes across the two interventions, but to also examine bidirectional *changes* in parent/child factors between two timepoints. Thus, in attempt to even further match our statistical analyses to our research questions, we also fit a latent change score model (LCS; McArdle, 2009) to examine whether *changes* in parenting (between two timepoints) predict subsequent *changes* in child anxiety (between the next two subsequent timepoints), and vice versa.

Taken together, our rigorous analytic approach allowed us to examine *both* within-person, cross-lagged, reciprocal level-to-future level and change-to-future change relations between child anxiety and parenting. To build on previous parent-involvement CBT findings (e.g., Settapani et al., 2013; Silverman et al., 2009, 2019, 2021b), we aimed to examine directionality of links between parenting and child anxiety (i.e., parent-to-child vs. child-to-parent influences) within each treatment group. The current study extends previous work by comparing two active treatments to explore whether mediation of treatment outcomes differs across treatment *formats*. Though examination of these dynamic relationships in young children are novel to the current study, we expected both groups to yield cross-lagged relations (i.e.,

bidirectional links across two timepoints) between child anxiety and parenting based on previous literature in older youth and developmental-transactional models of child anxiety. More specifically, we hypothesized that a) child anxiety would predict later improvements in both observed and self-reported parenting; b) both observed and self-reported parenting would predict improvements in child anxiety. Additionally, we aimed to evaluate intervening mechanisms that explain how parent and child factors bring about positive child anxiety and parenting outcomes (i.e., across three or more timepoints). Again, though investigation of child and parent mediators in interventions for inhibited young children is virtually unexplored, we hypothesized that parenting would mediate child anxiety outcomes, and that child anxiety would mediate parenting outcomes. As part of a previous examination of treatment effects using the current sample, parents in the Turtle Program were found to demonstrate significantly more observed positive affect and less negative control at post-treatment relative to those in CLK (Chronis-Tuscano et al., 2021), indicating that pathways from child anxiety to treatment outcomes via observed parenting mediators may differ as a function of treatment format.

Chapter 2: Method

Participants

151 families were block randomized to the Turtle Program or CLK based on child sex and presence of any anxiety disorder at baseline. Parents who spent the most time caring for the child or were able to attend the most treatment sessions were designated at the “primary parent.” The current study only includes primary parent data. See Table 1 for child and primary parent demographic information. Eligible families had a child 45 – 64 months old who a) attended a structured school program; b) fell at or above the 85th percentile on the Behavioral Inhibition Questionnaire (BIQ; Bishop et al., 2003); c) did not have a prior autism spectrum disorder diagnosis or obtain a score ≤ 15 on the Social Communication Questionnaire (SCQ; Eaves et al., 2006); d) did not meet diagnostic criteria for selective mutism; e) did not receive outside anxiety treatment during the treatment phase of the study. See Chronis-Tuscano et al., 2021 for further details regarding study sample and recruitment.

Procedures

Interested families were invited to complete a baseline laboratory visit if they met basic inclusion criteria during an initial phone screen. Observed parenting behaviors were assessed at the baseline visit as well as the mid- and post-treatment visits. Mid-treatment assessments occurred after the fourth treatment session for both treatment groups. Post-treatment assessments occurred 4-5 weeks after the mid-treatment assessment. More specifically, post-treatment visits were held following the four remaining sessions in the Turtle Program. Following the mid-treatment assessment,

families in CLK completed a fifth treatment session and spent the 2 subsequent weeks practicing skills outside of treatment sessions before completing the sixth and final treatment session. Thus, families in the Turtle Program and CLK completed the final treatment session and the post-treatment assessment at the same time intervals. Parents completed online questionnaires at all four timepoints. Informed consent was obtained from all participating parents; children did not provide assent given their young age. All procedures were approved by the University of Maryland institutional review board.

Measures

Child Anxiety. Parents completed the Preschool Anxiety Scale (PAS; Spence et al., 2001) at pre-, mid-, post-treatment, and one-year follow-up). The PAS assesses parent ratings of child anxiety disorder symptoms. The sum of the social anxiety, general anxiety, specific phobia, and separation anxiety symptom subscales were used in the current study (children in the current sample had a very low incidence of obsessive-compulsive symptoms, so this subscale was not included). The measure has demonstrated good construct validity with the internalizing scale of the Child Behavior Checklist (Spence et al., 2001). In the current sample, Cronbach alpha ranged from .86 – .89 for the total PAS score.

Accommodation of Child Anxiety. Parents completed the Family Accommodation Scale-Anxiety (FASA; Lebowitz et al., 2013) at pre-, mid-, and post-treatment, and one-year follow-up. The FASA assesses parent participation in child anxiety-related behaviors and modification of routines due to child anxiety. The Participation and Modification subscales have been shown to demonstrate strong reliability and

validity (Lebowitz et al., 2013). In the current sample, Cronbach alpha ranged from .83 – .86 for the total FASA score.

Observed Parenting. Parents and children were observed during a free play task during the pre-, mid-, and post-treatment assessments. Observers masked to treatment randomization coded parent positive affect and negative control using an adaptation of the Maternal Warmth and Control Scale (Rubin et al., 2016). Parents were ascribed a global score ranging from 1 (low) to 5 (high) on positive affect and negative control. Each coder reached reliability on 22% of cases, achieving ICCs of .75+ with a lead coder for each global parenting category.

Interventions

The Turtle Program. The Turtle Program comprises 8 concurrent 90-minute parent and child group sessions (Chronis-Tuscano et al., 2015; Danko et al., 2018). The parent component of The Turtle Program is an adaptation of group PCIT and consists of three phases. In the Child Directed Interaction (CDI) phase, parents received psychoeducation regarding BI, the etiology of anxiety, anxiolytic (i.e., overprotective and overly directive) parenting behaviors, and signs of child anxiety. In subsequent sessions, parents learned and practiced CDI skills (i.e., following the child’s lead in play, use of differential attention, planned ignoring, refraining from questions, commands, and criticism) through in-session activities, in-vivo coaching, and daily 5-minute playtime homework (“special time”). In the Bravery Directed Interaction (BDI) phase, parents built social fear hierarchies and learned how to use antecedent control and positive reinforcement to implement exposures. Parents also learned skills to manage parent anxiety and discussed potential plans for managing future

transitions. Parents practiced BDI skills through live, in-vivo coaching, in-session activities, and between-session homework. In the Parent Directed Interaction (PDI) phase, parents learned PDI skills to manage disruptive behaviors, including how to employ effective commands and a time-out sequence.

Children simultaneously participated in modified SSFP (Coplan et al., 2010). Session material and didactics were delivered in a developmentally-appropriate format, such that children learned problem solving, emotion regulation, and social skills via games, stories, and the use of props. The two SSFP group leaders facilitated and positively reinforced approach behaviors (e.g., making eye contact, sharing, initiating play) and social interactions. Treatment fidelity ratings indicated 98.99% and 91.40% adherence for the parent and child groups, respectively (for a percentage of randomly selected sessions).

Cool Little Kids. Cool Little Kids (CLK; Rapee et al., 2005, 2010) includes 6 parent-only group sessions. As the active control group for the current study, CLK sessions were extended from their typical 90 minutes to 2 hours in order to match the Turtle Program's total therapist contact time. Initial sessions included psychoeducation regarding the etiology of anxiety, identification of anxious child behaviors, and unhelpful parent responses to child anxiety. Successive sessions focused on parent management techniques, building and implementing exposure hierarchies, and troubleshooting barriers to between-session skill practice. Sessions also included anxiety management skills for parents and discussions regarding how to plan for future developmental transitions. Parents practiced skills through between-session

homework. Treatment fidelity ratings indicated 91.40% adherence for a percentage of randomly selected sessions.

Within each cohort, 5-7 families participated in each treatment group. Both the Turtle Program and CLK parent groups were implemented by two parent group leaders. SSFP and parent group leaders participated in weekly supervision with a licensed clinical psychologist. See Figure 1 for a description of session content for both CLK and The Turtle Program.

Data Analytic Plan

Analyses were conducted using the Lavaan package (Rosseel, 2012) of the R statistical software (R Core Team, 2019). To fulfill the primary aims proposed in the current study, our modeling approach included each variable repeatedly measured at each timepoint (i.e., pre-, mid-, post-treatment, and one-year follow-up). Each variable served as a potential predictor, mediator, and outcome variable at each timepoint. In doing so, we were able to model the directional and temporal relations among variables to elucidate whether one variable predicts another over time and to test for theory-driven mediators of child and parent outcomes.

Specifically, we generated an autoregressive cross-lag panel model (CLPM) to examine bidirectional and reciprocal links between all parenting and child anxiety variables at pre-, mid-, and post-treatment, and one-year follow-up. We included stability paths (autoregressive effects), within-timepoint correlations, and longitudinal cross-lag paths between variables at consecutive timepoints. Across the models described herein, we explored whether reciprocal associations were

moderated by treatment group (CLK vs. The Turtle Program) using a multi-group approach. For the traditional CLPM, we sequentially constrained blocks of model parameters to be equal between groups and over time: covariate regression coefficients, error variances and covariances; autoregressive and cross-lagged paths. Within each of these blocks, only the constraints that did not significantly worsen model fit were retained. Significant improvement in model fit was determined using the likelihood ratio test.

However, the standard CLPM has received criticism for failing to split within-person effects and stable between-person differences (Berry & Willoughby, 2017; Hamaker et al., 2015), which may yield biased estimates lacking meaningful interpretations. Thus, in addition to the traditional CLPM, and in accordance with recommendations of numerous researchers (Berry & Willoughby, 2017; Curran & Hancock, 2021; Hamaker et al., 2015), a latent curve model with structured residuals (LCM-SR; Curran et al., 2014) was also used to test hypotheses regarding reciprocal relationships between child anxiety and parenting. The LCM-SR model specifies a latent growth trajectory for each parent and child for each variable. The correlation between random intercepts and growth factor captures the between-person differences. The within-person variation is captured by the autoregressive and cross-lagged regressions among the structured residuals of the growth models. A multigroup structural equation modeling approach was used to compare treatment groups on parameters of the growth model and cross-lagged relations. We built models following the strategy detailed below.

For each construct, we started by fitting a univariate linear growth model. If the linear model (loadings 0, 1, 2, 14) had poor fit, modification indices were used to allow for freely-estimated loadings on the growth factor as needed (e.g., growth factor loadings = 0, *, 2, *). If it was found that the random growth factor model did not converge or produced a negligible growth factor variance/Heywood case, a fixed growth factor model was fit in which the growth factor was fixed to zero along with the covariance of the growth factor with the intercept factor. In building the multigroup multivariate model, we combined the univariate models for each construct, adding indicated covariates, factor covariances, autoregressive paths, and cross-lagged paths. If the growth factor variance was fixed to zero in a univariate model, any covariance with that growth factor was also fixed to zero. Parameters were not constrained between groups or across time in this fully unconstrained model. We then sequentially constrained blocks of model parameters to be equal between groups and over time: covariate regression coefficients, error variances and covariances; factor means, covariances, and loadings; autoregressive and cross-lagged paths. Within each of these blocks, only the constraints that did not significantly worsen model fit were retained. Significant improvement in model fit was determined using the likelihood ratio test.

Additionally, hypotheses regarding associations between *changes* in parenting and child anxiety were tested using a changes-to-changes extension to the latent change score model (LCS-CC; Grimm et al., 2016). More specifically, these models were used to examine whether 1) a variable's score at one time point predicts subsequent change in another variable at the following timepoint (and vice versa), and 2) change in one variable at one time point predicts change in another variable at the following time point (and vice versa). For our purposes, we built LCS-CC models with both

constant change and proportional change. The change component factor represented constant change during the intervention, and as such, was not loaded onto the change scores from T3 to time points after treatment completion (i.e., T4). Proportional growth parameters modeled long-term baseline growth. While each of the initial three time points (T1-T3) were separated by a month, T3 and T4 were separated by 12 months. For constructs measured at T4, we therefore included phantom variables representing measurements for each month between T3 and T4 (Ferrer et al., 2004). To identify the phantom variables and, in turn, the other effects in the LCS-CC models, we made the a-priori assumption of time-invariance for all paths.

We used a model building approach to arrive at a final LCS-CC model that examined whether the effects of interest differed by treatment group. We first fit univariate LCS-CC models, and added constraints to the change component (e.g., fixing factor variance or loadings to 0) in the case of convergence issues. In building the multigroup multivariate model, we combined the univariate models for each construct, adding indicated covariates, factor covariances, autoregressive (proportional growth) and cross-lagged (coupling) paths between true scores and change scores, and autoregressive and cross-lagged paths between change scores. We then established the optimal group equality constraints on blocks of model parameters to be equal between groups: the error (co)variances at each time point, the means of the initial true score and change component factors and the (co)variances between them, the proportional growth parameters, the coupling parameters, and the paths between change scores. Within each of these blocks, only the constraints that did not significantly worsen model fit were retained. Significant improvement in model fit was determined using the likelihood ratio test.

Nonnormality and missing data were accounted for via robust maximum likelihood (MLR) and full information maximum likelihood (FIML). Indirect effects were estimated as the product of relevant path coefficients and Monte Carlo-approximated confidence intervals were used to infer significance (Tofighi & MacKinnon, 2011). Covariates were included if they were found to predict the variables of interest at any time point. The comparative fit index (CFI > .95 for very good fit; CFI > .90 for adequate fit) and root-mean-square error of approximation (RMSEA < .05) were used to evaluate model fit (Bentler, 1990; Hooper et al., 2008; Kline, 1998).

Chapter 3: Results

Child Anxiety and Parent Accommodation of Child Anxiety

Autoregressive Cross-Lagged Panel Model. The unconstrained multivariate CLPM examining the reciprocal relationship between child anxiety and accommodation fit the data well ($\chi^2(87) = 86.897, p = .483, CFI = .997, RMSEA = .017$). Following the aforementioned process of imposing group constraints, the constrained model exhibited good fit ($\chi^2(97) = 96.318, p = .500, CFI = .995, RMSEA = .022$), with the exception that autoregressive paths from T1 \rightarrow T3 and T2 \rightarrow T4 were added for both accommodation and child anxiety. The final constrained model did not fit significantly worse than the initial unconstrained model ($\Delta\chi^2(10) = 9.502, p = .485$).

All direct paths are presented in Figure 2 (all path coefficients and standard errors are presented in Table 2). Though not the primary focus of the current analyses, we will note that both parent accommodation and child anxiety were predictive of accommodation and child anxiety at future timepoints, respectively ($p = <.001 - .025$). Cross-lagged paths were invariant across time, with the exception of the coefficients of all regressions with child anxiety predicting accommodation in CLK, T3 child anxiety predicting T4 accommodation in Turtle, and T3 accommodation predicting T4 child anxiety in both groups. Similarly, cross-lagged paths were invariant between the groups, with the exception of the regression coefficients of T1 child anxiety predicting T2 accommodation. Prior accommodation did not significantly predict child anxiety at the following timepoint in either group. In Turtle, child anxiety at the previous time point did not significantly predict

accommodation at the following time point between T1-T3. This was constrained to be equivalent to the CLK coefficient of T2 child anxiety predicting T3 accommodation. In both groups, child anxiety at the previous time point did not significantly predict accommodation at the following time point between T1-T3, with the exception of T1 child anxiety positively predicting T2 accommodation in CLK. This suggests that lower child anxiety at T1 predicted lower accommodation at T2. In both groups T3 child anxiety positively predicted T4 accommodation.

CLPM Indirect Effects. Estimates of the indirect effects are presented in Table 4. In both groups, lower levels of T1 child anxiety predicted lower T4 parent accommodation via lower levels of T2 and T3 child anxiety. In Turtle, lower levels of T1 child anxiety predicted lower levels of T4 accommodation via lower levels of T3 child anxiety. In CLK, lower levels of T1 child anxiety predicted lower levels of T4 accommodation via lower levels of T2 and T3 accommodation. Taken together, the traditional CLPM results suggest child-to-parent influences.

Latent Curve Models with Structured Residuals (LCM-SR). The unconstrained LCM-SR examining reciprocal relations between child anxiety and accommodation fit the data well ($\chi^2(67) = 74.043, p = .259, RMSEA = .035, CFI = 1.00$). Following the aforementioned process of imposing group constraints, the constrained model exhibited good fit ($\chi^2(104) = 105.816, p = .432, CFI = .992, RMSEA = .015$). The final constrained model did not fit significantly worse than the initial unconstrained model ($\Delta\chi^2(37) = 33.505, p = .634$).

All direct paths are presented in Figure 3 (all path coefficients and standard errors are presented in Table 3). In both groups, prior levels of child anxiety predicted child anxiety at the following time point during the intervention. In both groups, at the within-person level, T2 accommodation positively predicted T3 accommodation. This finding was time invariant in Turtle. In Turtle, T1 accommodation positively predicted T2 child anxiety. Also in Turtle, T3 child anxiety positively predicted T4 accommodation.

In both groups, at the between-person level, the random intercept factors for accommodation and child anxiety covaried significantly and positively (Turtle: $B = .109$, $SE = .038$, $p = .004$, $\beta = .697$, $SE = .103$; CLK: $B = .171$, $SE = .035$, $\beta = .860$, $SE = .076$, $p < .001$) indicating that parents who were typically lower in FAS across the four time-points tended to have children who displayed lower levels of anxiety over the same time period.

LCM-SR Indirect Effects. Estimates of the indirect effects are presented in Table 4. Multiple indirect effects were found in Turtle. Lower levels of T1 accommodation predicted lower levels of T3 child anxiety via lower T2 child anxiety. Additionally, lower levels of T1 accommodation predicted lower levels of T4 accommodation via lower levels of T2 and T3 child anxiety. Further, lower levels of T1 child anxiety predicted lower levels of T4 accommodation via lower levels of T2 and T3 child anxiety. Finally, lower levels of T2 child anxiety predicted lower levels of T4 accommodation via lower levels of T3 child anxiety. Taken together, results revealed a transactional path between parent accommodation and child anxiety that ultimately

produced lower levels of parent accommodation at T4. There were no indirect effects found in CLK.

Latent Change Score Model with Changes-to-Changes (LCS-CC). The unconstrained bivariate LCS-CC model containing accommodation and child anxiety fit the data well ($\chi^2(41) = 36.695, p = .662, CFI = 1.00, RMSEA = .00$). Following the aforementioned process of imposing group constraints, the constrained model exhibited good fit ($\chi^2(48) = 41.070, p = .750, CFI = 1.00, RMSEA = .00$). The final constrained model did not fit significantly worse than the initial unconstrained model ($\Delta\chi^2(6) = 3.433, p = .753$). A description of random intercept factor, coupling, and proportional growth (i.e., autoregressive coupling effects) findings are presented in Appendix A.

In Turtle, the changes-to-changes regression of accommodation change on child anxiety change was positive ($B = .507, SE = .244, p = .038$), indicating that a decrease in child anxiety from one time point to the next predicted a subsequent decrease in accommodation across the following two time points. The changes-to-changes regression of accommodation change on child anxiety change was not significant in CLK.

In Turtle, the changes-to-changes regression of child anxiety change on accommodation change was positive ($B = 1.533, SE = .466, p < .001$), indicating that a decrease in accommodation from one time point to the next predicted a subsequent decrease in child anxiety across the following two time points. Taken together, these results suggest that there was bidirectional change in child anxiety and

accommodation in Turtle. The changes-to-changes regression of child anxiety change on accommodation change was not significant in CLK.

Child Anxiety, Observed Parent Positive Affect and Negative Control

Autoregressive Cross-Lagged Panel Model. The unconstrained multivariate CLPM model examining child anxiety, PA, and NC fit the data well, $\chi^2(107) = 120.689, p = .173$, CFI = .991, RMSEA = .026. Following the aforementioned process of imposing group constraints, the constrained model exhibited good fit ($\chi^2(133) = 148.129, p = .175$, CFI = .985, RMSEA = .030), with the exception that autoregressive paths from T1→T3 were added for all variables as well as T2→T4 for child anxiety. The final constrained model did not fit significantly worse than the initial unconstrained model ($\Delta\chi^2(26) = 27.632, p = .377$).

All direct paths are presented in Figure 4 (all path coefficients and standard errors are presented in Table 5). Though not the primary focus of the current analyses, we will note that both observed parenting (PA and NC) and child anxiety were predictive of observed parenting (PA and NC) and child anxiety at future timepoints, respectively ($p = <.001 - .015$). Cross-lagged paths were invariant across time, with the exception of the coefficients of the regression of T4 child anxiety on T3 PA and NC. Similarly, cross-lagged paths were invariant between the groups, with the exception of the regressions of T2 and T3 child anxiety onto T1 and T2 PA, respectively.

Effects of Child Anxiety on Parenting. In both groups, prior child anxiety did not significantly predict PA or NC at the following timepoint.

Effects of Parenting on Child Anxiety. In both groups, prior parenting did not significantly predict child anxiety at the following timepoint.

Effects of Parenting on Parenting. In both groups, prior NC negatively predicted PA at the following timepoint. Prior PA negatively predicted NC at the following timepoint in both groups. As such, the traditional CLPM only exhibited bidirectional relations between observed parenting variables (i.e., no bidirectional relations between parent and child variables).

CLPM Indirect effects. Estimates of the indirect effects are presented in Table 7. Six indirect effects were found indicating transactional relations between positive and negative observed parenting in each group. Lower T1 NC predicted lower T3 NC via higher T2 PA at a trend level ($p = .05$). Simultaneously, higher T1 PA predicted higher T3 PA via lower T2 NC, also at a trend level ($p = .05$). In both groups, lower levels of T1 NC predicted higher levels of T3 PA via two pathways: 1) via higher T2 PA, and 2) via lower T2 NC. In both groups, higher levels of T1 PA predicted lower levels of T3 NC via higher T2 PA. In Turtle, higher levels of T1 PA also predicted lower levels of T3 NC via lower T2 NC.

Latent Curve Models with Structured Residuals (LCM-SR). The unconstrained LCM-SR containing child anxiety, PA, and NC fit the data well, $\chi^2(84) = 115.713$, $p = .012$, RMSEA = .066, CFI = .972. Following the aforementioned process of imposing group constraints, the constrained model exhibited good fit ($\chi^2(121) = 117.268$, $p = .579$, CFI = 1.00, RMSEA = .00). The final constrained model did not fit significantly worse than the initial unconstrained model ($\Delta\chi^2(37) = 9.356$, $p = 1.00$).

All direct paths are presented in Figure 5 (all path coefficients and standard errors are presented in Table 6). In Turtle, T2 PA predicted T3 PA, and T1 child anxiety positively predicted T2 child anxiety. In both groups, at the within-person level, T2 child anxiety predicted higher T3 PA at the following timepoint. This finding was time invariant in Turtle. Further, in both groups, T2 PA predicted lower levels of T3 NC. Interestingly, observed parenting did not predict child anxiety at any time point in either group.

In both groups, at the between-person level, the random intercept factors for PA and NC covaried significantly and negatively ($B = -.237, SE = .071, \beta = -.830, SE = .118, p = .001$), indicating that parents who were typically higher in PA across the three time-points tended to display less NC over the same time period. In both groups, no significant between-person level associations were found between child anxiety and NC ($B = -.036, SE = .028, \beta = -.155, SE = .111, p = .201$). In Turtle, no significant between-person level associations were found between child anxiety and PA (Turtle: $B = -.061, SE = .053, \beta = -.280, SE = .261, p = .249$). In CLK, there was a positive trend association between PA and child anxiety ($B = .066, SE = .039, \beta = .300, SE = .183, p = .095$). This suggests that parents in CLK who were typically higher in positive affect across the three timepoints had children who exhibited higher anxiety during the same time period.

LCM-SR Indirect effects. Estimates of the indirect effects are presented in Table 7. Three indirect effects were found in Turtle that suggest child-to-parent influences. Higher levels of T1 child anxiety predicted lower T3 NC via greater T2 PA. Higher

levels of T1 child anxiety predicted higher T3 PA via 2 pathways: 1) via greater T2 PA, and 2) via greater T2 child anxiety. No indirect effects were found in CLK.

Latent Chance Score Model with Changes-to-Changes Component (LCS-CC). The LCS-CC model containing negative control, positive affect, and child anxiety did not converge. We therefore ran two separate bivariate LCS-CC models, each containing one of the observed parenting variables and child anxiety. In doing so, we found that these bivariate LCS-CC models would not converge when including changes-to-changes paths. We describe findings from the bivariate models without the changes-to-changes component in Appendix A.

Chapter 4: Discussion

Overview

Despite progress in the development of effective interventions for anxious youth and their families, little is known about the mechanisms underlying their positive outcomes and directionality of the relations between child and parent treatment targets. Accordingly, the current study examined reciprocal within-person level-to-future level and change-to-future change relations between parenting and child anxiety across two early interventions for inhibited young children: 1) The Turtle Program (“Turtle”), an adaptation of PCIT comprised of concurrent parent and child groups (and in-vivo coaching); and 2) Cool Little Kids (“CLK”), a parent-only intervention. In partial support of our hypotheses, CLPM results were consistent with the child-to-parent influences found in previous research on CBT for older anxious youth (Silverman et al., 2009, 2021b; Settapani et al., 2013). However, these results only remained in Turtle after extending the traditional CLPM to parse within- and between-person effects in the LCM-SR. Additionally, results of our LCS-CC analyses revealed bidirectional effects of changes in parent accommodation and child anxiety during and after the intervention, but only in Turtle. Findings, clinical and methodological implications, and recommendations for future directions are discussed.

Child Anxiety and Parent Accommodation of Child Anxiety

Our examination of the reciprocal relations between child anxiety and parent accommodation highlight the importance of analyzing these paths via models that parse within- and between-person effects. The traditional CLPM that did not parse these effects suggested that, in both Turtle and CLK, positive accommodation

outcomes at the one-year follow-up (T4) came about both through stable decreases in child anxiety and accommodation. As such, the CLPM results only yielded child-to-parent influences on T4 accommodation, and did not reveal simultaneous parent-to-child influences on child anxiety. However, it is important to note that there were no group differences in post-treatment (T3) or follow-up (T4) child anxiety or accommodation outcomes. Thus, these results may suggest that a different index of parenting ultimately led to lower levels of child anxiety in both groups, or that results were influenced by the particular methodology utilized (i.e., informant vs. observation). For example, distinct patterns of parent-child agreement/disagreement on parent accommodation levels have been shown to differentially predict child anxiety outcomes across parent- and child-based interventions for youth anxiety (Zilcha-Mano et al., 2021). Such findings underscore how eliciting multiple informants' perspectives on parent accommodation may yield contrasting mechanisms of change in treatments for older anxious youth. In the context of *early* interventions for young children who may not yet be able to reliably report on their parents' accommodation, multi-informant ratings of accommodation from more than one caregiver may convey meaningful informant discrepancies that differentially predict child outcomes (De Los Reyes et al., 2015).

However, when we extended the traditional CLPM to parse within- and between-person effects in the LCM-SR, the two child-driven indirect paths that resulted in lower levels of T4 accommodation were no longer significant in CLK. This indicates that the traditional CLPM findings in CLK were likely capturing between-person differences. When separating the within-person process from the between-person associations in Turtle, the child-driven indirect path found in the traditional CLPM

remained. Additionally, an indirect path emerged whereby lower levels of T1 parent accommodation predicted lower levels of T4 accommodation via lower levels of T2 and T3 child anxiety.

Given that this LCM-SR included *parent-reported* accommodation and child anxiety, this indirect path suggests that only parents in Turtle developed a link between impressions of their children's anxiety and their own parenting approach (in terms of parent accommodation). More specifically, parents in Turtle who rated themselves as more accommodating of child anxiety at pre-treatment rated their children's anxiety as higher at mid-treatment. This relationship then became transactional as the intervention progressed, with parent-reported child anxiety at post-treatment becoming predictive of parent-reported accommodation at the one-year follow-up. These findings suggest that parents in Turtle became more attuned to their own and their children's behaviors/emotions, and as such, may have become more accurate reporters over the course of treatment, which has important implications for methods of testing the effectiveness of interventions. These findings are in accordance with prior research suggesting that parents who are more accurate in predicting their inhibited children's fearfulness tend to demonstrate more protective behaviors (Kiel & Buss, 2011). Though parent sensitivity (i.e., the ability to effectively infer and respond to children's needs) is typically regarded as a positive parent attribute, this sensitivity can be misguided for parents of inhibited children if their accurate predictions of child anxiety ultimately result in more parent accommodation. Nevertheless, parent attunement to child anxiety may not necessarily signal a maladaptive pattern in the context of interventions. As others have proposed, parents attuned to their children's anxiety may be well-poised to identify opportunities to

implement skills learned during treatment (Kiel & Buss, 2012). Indeed, both Turtle and CLK begin with parent activities to *increase* parent awareness of their children's anxiety and to identify instances in which they are drawn to engage in accommodation.

This pattern of results is especially intriguing given that parents in Turtle did not rate themselves as more or less accommodating than parents in CLK, and there are several conceptual reasons why the Turtle Program might have specifically cultivated such parental attunement. First, as an adaptation of PCIT, Turtle includes an initial Child-Directed Interaction (CDI) phase (first 4 sessions until T2). The CDI skills comprise differential attention techniques (e.g., labeled praises, imitation, reflections, enthusiasm) to positively reinforce desired child behaviors and encourage child autonomy. For example, if a child expressed that they felt nervous in an anxiety-provoking situation, parents were encouraged to first reflect how the child was feeling and then to express encouragement. At the same time, parents were instructed to limit their use of questions, commands, and “negative talk” (i.e., sarcasm, criticism) in order to foster warmth in the parent-child relationship and to encourage the child to remain in the lead during play. As between-session homework, parents completed 5 minutes of daily “Special Time” during which they practiced the CDI skills with their children. In order to implement these CDI skills and to respond to their children more sensitively, parents had to first be aware of their children's behaviors and how their own parenting might serve to impact their children's subsequent actions. Second, this parental reflection was reinforced when parents in Turtle received in-vivo coaching in utilizing the CDI skills across the intervention, both in play and during in-session exposures. Coaching to respond effectively and

sensitively to their children in-the-moment may have increased parent reflection on their own and their children's emotional state. As such, PCIT components such as Special Time and in-vivo coaching may have encouraged the parental sensitivity and reflection on parent behavior underlying the transactional paths identified in our findings. Indeed, PCIT has been shown to produce improvements in parent self-reported reflective functioning (Zimmer-Gembeck et al., 2019), a parent's ability to identify, understand, and sensitively respond to their children's cues (Slade, 2005). More specifically, PCIT has been found to produce improvements (i.e., declines) in parent prementalization, or the *inability* to consider and understand a child's inner experience and perspective (Zimmer-Gembeck et al., 2019). Our findings dovetail nicely with the literature suggesting that PCIT produces positive changes in parent mentalization and future research is needed to better understand the role of parent reflective functioning as a potential mechanism for the improvements found in early interventions for inhibited young children.

Though the LCM-SR sheds light on the transactional mechanisms by which positive treatment outcomes occur, this model does not explicitly assess whether *changes* in (rather than levels of) parenting/child anxiety are predicted by previous *changes* in these variables across two or more timepoints. We thus utilized an LCS-CC to answer such questions about dynamic change across the interventions. In Turtle, the LCS-CC revealed that a reduction in child anxiety across two time points led to a subsequent reduction in accommodation across the following two time points. Simultaneously, a reduction in accommodation across two time points led to a subsequent reduction in child anxiety across the following two time points. Though this finding was time invariant, indicating bidirectional change through T4, the 10

phantom variables modeled between T3 and T4 limited our ability to test for an indirect effect. Future research with a greater number of data collection points between post-treatment and one-year follow-up will thus be necessary to gain further insight into the transactional nature of these changes.

Nevertheless, these preliminary findings suggest that targeting both accommodation and child anxiety likely result in a positive feedback loop. Our results are in accordance to those found in previous research examining CBT for older anxious youth yielding a bidirectional relationship between family accommodation of child anxiety and child anxiety symptoms across treatment (Bertelsen et al., 2022). These findings have interesting implications for the use of parent-only interventions that solely target parent accommodation (e.g., the SPACE Program; Lebowitz et al., 2014), as they demonstrate that producing change in parent accommodation has the potential to give rise to subsequent changes in child anxiety symptoms. At the same time, these findings also highlight how targeting child anxiety prompts positive changes in parent accommodation that may potentially serve to produce further reductions in child anxiety. As such, early interventions that *directly* target child anxiety and parent accommodation simultaneously, like the Turtle Program, may produce optimal child/parent outcomes for younger children. Future examination regarding the efficacy of a parent-only format that solely targets parent accommodation is warranted in a sample of young children. Further, given the multi-component nature of Turtle, it is impossible for us to isolate which specific treatment components contributed to significant change in accommodation. Future studies employing a dismantling design will allow for deeper investigation into specific mechanisms underlying change in accommodation.

Though findings supporting reciprocal change in child anxiety and accommodation are in accordance with our hypotheses, it is unclear why these paths only emerged within Turtle and not within CLK. Again, it is important to note that the growth model yielded significant slope for both accommodation and child anxiety, indicating that, on average, children and parents in both interventions exhibited significant reductions in anxiety and accommodation at post-treatment and follow-up, respectively. Even though there were no significant differences in parent accommodation outcomes between the two interventions, our findings demonstrate that, even in such cases, there may be different paths by which ultimate changes in parent accommodation come about, highlighting the importance of taking treatment condition into account in analyses examining two active treatment groups (rather than collapsing across groups). Though reciprocal effects between child anxiety and accommodation led to positive child/parent outcomes in Turtle, there may well be other parent factors not examined in the current study that are responsible for yielding these outcomes in CLK. For example, parents in CLK are guided in cognitive restructuring regarding maladaptive thoughts related to their children's anxiety. Potential mechanisms to explore in future research may thus include parent cognitive reappraisal, parent tolerance of children's negative emotions, or parent anxiety symptoms. On the other hand, results may also be attributable to using a parent-reported measure of child anxiety. Use of gold-standard semi-structured interviews (e.g., Anxiety Disorder Interview Schedule for DSM-V-Child and Parent Version; ADIS-C/P; Silverman & Albano, 2020) and measures that capture impairment associated with child anxiety will be important to include in future studies replicating our findings (Creswell et al., 2021). For the current study, ADIS-C/P scores were only available at T1, T3, and T4, and the lack of T2 scores impeded

us from including this measure in our analyses. Taken together, the lack of LCM-SR/LCS-CC findings in CLK reinforce the need to utilize multi-informant/multimethod measures of child anxiety and to measure more specific anxiety-enhancing parent behaviors/cognitive processes, all while remaining cognizant of the amount of burden put on families with regard to number of questionnaires and assessment timepoints.

Child Anxiety, Observed Parent Positive Affect and Negative Control

In addition to examining parent behaviors specific to anxiety-provoking situations, we examined reciprocal relations between child anxiety and observed global measures of positive and negative parenting behaviors indicated in the development and maintenance of child anxiety (Rubin et al., 2009; McLeod et al., 2007). The traditional CLPM examining links between child anxiety and observed positive affect (PA) and negative control (NC) revealed reciprocal indirect effects in both groups. Specifically, we found that lower initial NC predicted lower levels of T3 PA via lower levels of T2 NC. Simultaneously, initial PA predicted lower levels of T3 NC via increases in T2 PA. A second set of reciprocal indirect effects between PA and NC were also found in Turtle. Taken together, findings from the traditional CLPM suggest that, though positive and negative parenting were reciprocally related, parenting neither predicted nor was predicted by child anxiety at any time point.

However, these CLPM findings should be interpreted with caution, as the reciprocal effects of PA and NC on one another were no longer significant in either group in the LCM-SR, again indicating that the traditional CLPM findings were potentially capturing between-person differences. Nevertheless, the LCM-SR revealed an

interesting mediating pathway in Turtle, whereby parents responded to their children's elevated levels of anxiety by increasing their use of PA in their play; and this increase in mid-treatment PA then prompted decreases in post-treatment NC. Much like the aforementioned LCM-SR findings regarding parental accommodation, these results suggest that parents in Turtle were especially attuned to their own and their children's emotions and behaviors. Again, though prior work has established links between parent accuracy in predicting inhibited children's fearful behaviors and the use of more intrusive parenting behaviors (Kiel & Buss, 2011), this may not necessarily be a negative pattern within the context of treatment. In fact, our findings indicate that parent attunement to child anxiety ultimately resulted in *lower* parental NC at post-treatment. Having received in-vivo coaching to allow children to remain in the lead during play thereby increasing child autonomy, parents of children with elevated levels of anxiety may have been especially attuned to their children's inhibition and subsequently responded with an increased use of CDI skills. A parent must first think from the perspective of the child or reflect on the child's inner experience in order to issue a labeled praise for independently putting a toy together during play or approaching a new child in an anxiety-provoking situation. It could also be hypothesized that increasing parents' use of skills that aim to foster child autonomy (i.e., PA) may limit the amount of time they were able to engage in controlling behaviors. Unfortunately, we were unable to determine whether such changes in PA/NC led to changes in child anxiety via the LCS-CC model due to model convergence issues. Nevertheless, the LCM-SR findings shed light on the utility of including treatment components such as CDI that directly target PA, produce reductions in NC, and potentially increase parent attunement.

Interestingly, if we conceptualize parent-to-child influences as parenting behaviors that acted as mediators of either T3 or T4 child outcomes, no parent-to-child influences were identified across all of the CLPM or LCM-SR analyses examining mediating pathways. Indeed, in contrast with our hypotheses, neither accommodation nor observed PA/NC at T2/T3 significantly predicted child anxiety outcomes at post-treatment or follow-up. In fact, with the exception of the finding that T1 accommodation predicted T2 child anxiety in Turtle (and our LCS-CC findings), parenting did not predict later child anxiety *at any time point* across the groups in any of our analyses. In accordance with the call for more frequent data collection points in RCTs examining interventions targeting childhood anxiety (Peris et al., 2021; Carper et al., 2018), our results may reflect the number of data collection points and the timing between those time points. For instance, a greater number of data collection points between T3 - T4 may be necessary to capture the dynamic changes that occur between these child and parent factors *after* the completion of treatment. It may also be that more frequent data collection is necessary *during the intervention* in order to capture parent-to-child influences.

Additionally, there are likely other parenting behaviors that need to be incorporated into observational coding schemes to better examine these dynamic processes. Further, it may be that the particular context used in the current parent-child observation paradigm elicited certain parenting behaviors over others. In the current study, observed parenting was measured during a free play task in which children could play with any of the available toys and parents were told to play with their children as they usually would. Free play, a situation in which children aren't necessarily pulling for parental intrusion or scaffolding, can be an optimal context to

observe controlling and directive parenting behaviors. Higher levels of negative control during a task that does not inherently elicit controlling parent behaviors may map onto similar behaviors during daily playtime outside of the laboratory, and potentially imply even higher levels of negative control in situations that require parental scaffolding. Research supporting such context effects suggests that parental oversolicitousness in lower stakes situations (i.e., free play) predicts greater levels of child social reticence (Kiel & Buss, 2012; Rubin et al., 2001). Nevertheless, the addition of further conditions may be necessary to sufficiently measure other anxiety parenting behaviors and the parenting behaviors specifically directly targeted in CLK and Turtle.

Strengths, Limitations, and Future Directions

The current study was conducted in accordance with the recent recommendations for conducting and reporting on RCTs for childhood anxiety (Creswell et al., 2021) and offers important methodological advances informed by the seminal CBT studies for school-age youth and adolescents (Settipani et al., 2013; Silverman et al., 2009, 2019, 2021b). Indeed, many previous studies examining mediators of treatment response solely examined outcomes across two or three timepoints, due to study design. Even so, longitudinal evaluations of treatment studies often fail to leverage data collected across multiple timepoints and to examine putative mediators and outcome variables *at each timepoint*. Within transactional models of child development, child and parent factors are not necessarily specified as predictors, mediators, or outcome variables, as there may be a number of ways that relations between parent and child behaviors change sequentially across development (Sameroff, 2010). By allowing all child/parent variables to serve as predictors and outcomes at each time point, we

were able to establish causal, reciprocal relationships and the timing of changes *during and following* treatment (Carper et al., 2018; Maric et al., 2012). Further, despite progress in identifying reciprocal change processes across interventions for anxious youth, previous studies have relied on models that produce estimates conflating between- and within-person variance. In particular, our results underscore the importance of extending the traditional CLPM model to parse within- and between-person effects, as many of our results were no longer significant when accounting for between-person variance. Employing methodology that addresses *within-person variations* to answer *within-person questions* about dynamic change will be crucial in future studies examining similar change processes. Finally, most of the prior CBT mediation dynamics studies have utilized self-report measures of parenting, despite evidence that parents may be biased in reporting on their own behaviors or interactions with their children (Althubaiti, 2016). Observations of parenting behaviors are less susceptible to such reporter bias (Lotzin et al., 2015). Thus, the current study is also strengthened by our multimethod approach utilizing two measures of observed and one measure of self-reported parenting behaviors targeted by the Turtle Program and CLK. Taken together, as one of the few RCTs to compare two *active* interventions for young children at-risk for anxiety, our rigorous study design and analytical approach represent a unique template for future studies examining mechanisms underlying positive parent/child outcomes and how those paths may vary across treatment formats.

There are some limitations to the current study that highlight exciting directions for future research. First, although our sample size is on the larger end of the parent-child intervention studies for childhood anxiety described herein, future studies with larger

sample sizes are needed to test the robustness of our findings. Second, as an efficacy study, the current findings may not be generalizable to lower resourced, community-based settings where barriers to treatment engagement may serve as a primary limitation to optimal treatment outcomes (Mian, 2014). Future research in a community setting with a more socioeconomically diverse sample will be necessary to test the generalizability of our findings. Third, it is impossible to parse apart which treatment components are responsible for each effect due to the multi-component nature of Turtle. In particular, in contrast to CLK, the Turtle Program included both a child group and in-vivo coaching beyond the parent group. Future dismantling studies will be necessary to understand which treatment components are necessary to produce positive child/parent outcomes, as well as the optimal sequencing of such components. Nevertheless, the LCM-SR findings of the current study highlight the benefits of including a CDI phase to target anxiety parenting behaviors, as increased PA subsequently predicted reductions in parents' NC by post-treatment. Fourth, there may be several reasons a limited number of parent-to-child influences emerged in our findings. For example, future studies should test if findings are replicated when utilizing clinician-rated symptoms of child anxiety and observational measures of other parent autonomy-supporting behaviors. Additionally, future studies will benefit from incorporating parent cognitive processes and anxiety symptoms. Fifth, as previously described, we were limited in our ability to examine changes-to-changes processes in our observed parenting variables, as they were only collected at three timepoints. Future research elucidating the optimal number of data collection points and time lags will be necessary to best understand changes in specific youth symptoms and parenting behaviors, while at the same time considering participant burden and cost. Notwithstanding these limitations, this study is the first to test

preconceived assumptions regarding directionality of parent-child change in the context of two active early interventions for *young* children at-risk for anxiety.

Conclusion

The current study provides novel insight into the directionality of parent and child factors across varying formats of early interventions for young children at-risk for later anxiety. Coinciding with developmental-transactional models suggesting that the development of child anxiety may be the result of both child-to-parent and parent-to-child influences rather than just parent-to-child influences as often assumed, our results revealed reciprocal relationships between changes in child anxiety and parent accommodation of child anxiety during and after treatment for families in the Turtle Program. In accordance with previous research examining CBT for older youth with anxiety, these findings highlight the importance of targeting *both* factors simultaneously in early interventions for young children and their parents.

Additionally, the current study contributes to the literature supporting the inclusion of a Child-Directed Interaction component and in-vivo coaching in adaptations of PCIT for young child with or at-risk for anxiety. Our lack of findings indicating parent-to-child influences and mechanistic paths within CLK underscores the need for future research incorporating multi-informant and multi-method measures, as well as methodology that specifically captures the parent cognitive and behavioral characteristics targeted within treatment. Finally, our findings emphasize the importance of matching our statistical models to the specific within-person inferences we hope to draw about intervention processes. Failure to do so could result in improper conclusions, which, in turn, could inform the development of invalid theory (Berry & Willoughby, 2017). Future research incorporating rigorous methodology

will be crucial in identifying additional mechanisms underlying these interventions, with the hope of further individualizing treatment, and ultimately, improving engagement and outcomes.

Appendices

Appendix A. Latent Change Score Model with Changes-to-Changes (LCS-CC)

Results of random intercept factor, coupling, and proportional growth (i.e., autoregressive coupling effects) findings are presented below.

Child Anxiety and Parent Accommodation of Child Anxiety

The child anxiety random intercept factor for constant change scores was invariant between the groups and had a significant mean ($B = -.079, SE = .024, p < .001$), indicating a meaningful decrease over time in child anxiety. The variance of the factor was also invariant between the groups, and did not significantly differ from zero ($B = .018, SE = .13, p = .180$), indicating that there was not significant variability across families in change in child anxiety.

The accommodation random intercept factor for constant change scores was invariant between the groups and had a significant mean ($B = -.085, SE = .023, p < .001$), indicating a meaningful decrease over time in accommodation.

The random intercept factor for initial child anxiety true scores was positively correlated with the random intercept factor for initial accommodation true scores ($B = .221, SE = .035, p < .001$). This suggests that, at pre-treatment, children with higher anxiety tended to have parents with higher levels of accommodation.

The covariance between the random intercept factors for initial child anxiety and change in child anxiety was negative ($B = -.057, SE = .027, p = .033$), indicating that children who started with higher anxiety exhibited a greater decrease in anxiety.

Proportional growth (i.e., autoregressive coupling effects) in accommodation was invariant between the groups and negative ($B = -.025, SE = .011, p = .024$). There was no significant

proportional growth in PAS ($B = -.012, SE = .017, p = .503$). Neither child anxiety nor accommodation demonstrated significant change-to-change autoregressions in either group.

Accommodation and child anxiety coupling effects were invariant between the groups. The coupling parameter for the child anxiety true score on accommodation change was positive ($B = .022, SE = .008, p = .007$), indicating that lower levels of child anxiety at the previous time point predicted a decrease in accommodation from that time point to the subsequent time point. The coupling parameter for the accommodation true score on child anxiety change was not significantly different from zero ($B = .034, SE = .024, p = .149$).

Child Anxiety and Parent Negative Control

The unconstrained bivariate LCS-CC model of NC and child anxiety fit the data well ($\chi^2(73) = 68.091, p = .641, CFI = 1.00, RMSEA = .00$). Following the aforementioned process of imposing group constraints, the constrained model exhibited good fit ($\chi^2(80) = 71.077, p = .752, CFI = 1.00, RMSEA = .00$). The final constrained model did not fit significantly worse than the initial unconstrained model ($\Delta\chi^2(7) = 4.025, p = .777$).

The mean for the child anxiety change component was invariant between the groups and not significantly different from zero ($B = -.119, SE = .079, p = .135$) indicating that, after accounting for proportional growth and controlling for the effects of level and change in NC, there was no meaningful constant change in child anxiety. The variance of the factor was also invariant between the groups, and was not significantly different from zero ($B = .006, SE = .010, p = .533$), suggesting that there was not significant variability across families in change in child anxiety. For both groups, the mean of the NC change component was negative ($B = -.955, SE = .220, p < .001$), indicating a meaningful decrease in NC between T1 and T2. In

both groups, initial child anxiety true scores did not significantly covary with the initial NC true scores (Turtle: $B = -.028$, $SE = .025$, $p = .257$; CLK: $B = .002$, $SE = .010$, $p = .849$).

In both groups, the initial child anxiety true score and the child anxiety change component did not significantly covary (Turtle: $B = -.029$, $SE = .031$, $p = .350$, CLK: $B = -.001$, $SE = .010$, $p = .922$). In Turtle, the initial NC true score and the NC change component contrived negatively ($B = -.285$, $SE = .128$, $p = .026$).

Proportional growth (i.e., autoregressive coupling effects) in NC was invariant between the groups and not significant ($B = .062$, $SE = .092$, $p = .499$). In both groups, there was no significant proportional growth in child anxiety (Turtle: $B = .001$, $SE = .007$, $p = .841$; CLK: $B = -.002$, $SE = .010$, $p = .813$).

In Turtle, child anxiety change-to-change autoregressions were positive and significant ($B = .700$, $SE = .236$, $p = .003$). In CLK, child anxiety change-to-change autoregressions were not significantly different from zero ($B = .413$, $SE = .477$, $p = .387$).

NC and child anxiety coupling effects were not invariant between the groups. In Turtle, the coupling parameter for the child anxiety true score on NC change was not significantly different from zero ($B = -.064$, $SE = .063$, $p = .313$). This coupling parameter was significant and positive in CLK, ($B = .290$, $SE = .069$, $p < .001$). This indicates that, in CLK, lower child anxiety at the previous time point predicted a decrease in observed parent NC from that time point to the subsequent time point. The coupling parameter for the NC true score on child anxiety change was not significantly different from zero in either group (Turtle: $B = .022$, $SE = .043$, $p = .612$; CLK: $B = .012$, $SE = .033$, $p = .720$).

Child Anxiety and Parent Positive Affect

The unconstrained bivariate LCS-CC model of PA and child anxiety fit the data well ($\chi^2(74) = 69.526, p = .626, CFI = 1.00, RMSEA = .00$). Following the aforementioned process of imposing group constraints, the constrained model exhibited good fit ($\chi^2(79) = 73.599, p = .650, CFI = 1.00, RMSEA = .00$). The final constrained model did not fit significantly worse than the initial unconstrained model ($\Delta\chi^2(5) = 3.938, p = .559$).

The mean for the child anxiety change component was invariant between the groups and did not significantly differ from zero ($B = -.047, SE = .080, p = .557$) indicating that, after accounting for proportional growth and controlling for the effects of level and change in PA, there was no meaningful constant change in child anxiety. The variance of the factor was also invariant between the groups, and was not significantly different from zero ($B = .004, SE = .007, p = .602$), indicating that there was not significant variability across families in change in child anxiety.

The mean for the PA change component in Turtle was positive ($B = 1.089, SE = .228, p < .001$), indicating a meaningful increase in PA between T1 and T2. In CLK, the mean for the PA change component was not significantly different from zero ($B = .353, SE = .364, p = .332$). In both groups, the initial child anxiety true scores did not significantly covary with the initial PA true scores (Turtle: $B = -.087, SE = .065, p = .228$; CLK: $B = .080, SE = .050, p = .105$). In both groups, the initial child anxiety true score and the child anxiety change component did not significantly covary (Turtle: $B = -.029, SE = .031, p = .350$, CLK: $B = -.001, SE = .010, p = .922$). In Turtle, the initial PA true score and the PA change component covaried at a trend level ($B = -.213, SE = .128, p = .097$).

Proportional growth (i.e., autoregressive coupling effects) in PA was invariant between the groups and not significant ($B = -.085, SE = .056, p = .128$). In CLK, there was no significant proportional growth in child anxiety ($B = .003, SE = .006, p = .578$). In Turtle, proportional growth in child anxiety was positive at a trend level ($B = .008, SE = .005, p = .078$).

In Turtle, child anxiety change-to-change autoregressions were positive and significant ($B = .763, SE = .296, p = .010$). In CLK, child anxiety change-to-change autoregressions were not significantly different from zero ($B = .464, SE = .548, p = .397$).

PA and child anxiety coupling effects were not invariant between the groups. In Turtle, the coupling parameter for the child anxiety true score on PA change was positive and significant ($B = .216, SE = .103, p = .036$), indicating that higher child anxiety at the previous time point predicted an increase in observed PA from that time point to the subsequent time point. This coupling parameter was not significant in CLK ($B = -.019, SE = .114, p = .893$). The coupling parameter for the child anxiety true score on PA change was not significantly different from zero in either group (Turtle: $B = -.013, SE = .027, p = .637$; CLK: $B = -.019, SE = .114, p = .893$).

Table 1. *Sample characteristics at baseline assessment.*

<u>Primary Parent (N = 151)</u>	<u>Turtle Program</u>	<u>CLK</u>	
Age in years, <i>M (SD)</i>	38 (4.4)	39.4 (5.7)	
Sex, (% female)	88%	83%	
Parent race, (%)			
White	69%	61%	
Asian	21%	16%	
Black	7%	20%	
Other	3%	3%	
Hispanic or Latinx, (%)	7%	7%	
Parent education, (%)			
3 years of college or less	9%	12%	
4 years of college (Bachelor's)	24%	24%	
Master's Degree or equivalent	48%	36%	
Doctoral Degree or equivalent	19%	28%	
Median household income	\$150,000+		
<u>Child (N = 151)</u>	<u>Turtle Program</u>	<u>CLK</u>	
Age in months, <i>M (SD)</i>	53.2 (5.5)	52.7 (5.9)	
Sex, (% female)	56%	46%	
Child Race, (%)			
White	58%	43%	
Asian	19%	9%	
Black	7%	18%	
Other	16%	30%	
Hispanic or Latinx, (%)	7%	11%	
<u>Outcome Measures</u> <i>M (SD)</i>	<u>Turtle Program</u>	<u>CLK</u>	<i>t</i>
Family Accommodation Scale (FAS)	1.10 (0.73)	1.23 (0.82)	0.96
Preschool Anxiety Scale (PAS)	2.29 (0.62)	2.31 (0.52)	0.20
Observed Negative Control	2.42 (0.88)	2.69 (0.95)	1.78
Observed Positive Affect	2.50 (0.90)	2.23 (0.95)	-1.78

Note. CLK = Cool Little Kids, PP = Primary Parent, * = $p < .05$.

Table 2. Direct effects of the CLPM examining reciprocal relations between child anxiety and parent accommodation of child anxiety

Path	Turtle		CLK	
	B (SE)	β (SE)	B (SE)	β (SE)
Autoregressions				
T1 ANX → T2 ANX	0.80 (0.05)***	0.82 (0.05)***	0.77 (0.05)***	0.75 (0.05)***
T2 ANX → T3 ANX	0.43 (0.12)***	0.47 (0.14)***	0.77 (0.05)***	0.76 (0.07)***
T1 ANX → T3 ANX	0.30 (0.13)*	0.34 (0.14)*	-0.03 (0.10)	-0.03 (0.09)
T3 ANX → T4 ANX	0.34 (0.14)*	0.35 (0.14)*	0.34 (0.14)*	0.32 (0.13)*
T2 ANX → T4 ANX	0.25 (0.13)†	0.27 (0.14)†	0.61 (0.16)***	0.55 (0.12)***
T1 ACC → T2 ACC	0.60 (0.08)***	0.71 (0.07)***	0.27 (0.11)*	0.29 (0.12)*
T2 ACC → T3 ACC	0.58 (0.12)***	0.56 (0.11)***	0.77 (0.12)***	0.77 (0.09)***
T1 ACC → T3 ACC	0.18 (0.10)†	0.20 (0.10)†	-0.02 (0.09)	-0.02 (0.10)
T3 ACC → T4 ACC	0.22 (0.11)*	0.25 (0.13)*	0.22 (0.11)*	0.26 (0.13)*
T2 ACC → T4 ACC	0.24 (0.11)*	0.25 (0.12)*	0.24 (0.11)*	0.27 (0.12)*
Cross-Lags				
T1 ACC → T2 ANX	0.02 (0.04)	0.03 (0.05)	0.02 (0.04)	0.03 (0.06)
T2 ACC → T3 ANX	0.02 (0.04)	0.03 (0.04)	0.02 (0.04)	0.03 (0.05)
T3 ACC → T4 ANX	0.02 (0.06)	0.02 (0.08)	0.02 (0.06)	0.02 (0.08)
T1 ANX → T2 ACC	0.06 (0.07)	0.06 (0.07)	0.64 (0.15)***	0.45 (0.10)***
T2 ANX → T3 ACC	0.06 (0.07)	0.06 (0.06)	0.06 (0.07)	0.04 (0.05)
T3 ANX → T4 ACC	0.36 (0.11)**	0.33 (0.09)**	0.36 (0.11)**	0.31 (0.08)**

Note. CLPM = Cross-lagged panel model; CLK = Cool Little Kids; Turtle = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; ANX = child anxiety; ACC = parent accommodation of child anxiety; † p = trend, * p < .05, ** p < .01, *** p ≤ .001.

Table 3. Direct effects of the LCM-SR examining reciprocal relations between child anxiety and parent accommodation of child anxiety

Path	Turtle		CLK	
	B (SE)	β (SE)	B (SE)	β (SE)
Autoregressions				
T1 ANX → T2 ANX	0.48 (0.14)***	0.50 (0.14)***	0.48 (0.14)***	0.52 (0.09)***
T2 ANX → T3 ANX	0.48 (0.14)***	0.60 (0.20)***	0.48 (0.14)***	0.39 (0.16)***
T3 ANX → T4 ANX	0.21 (0.23)	0.24 (0.26)	0.21 (0.23)	0.22 (0.23)
T1 ACC → T2 ACC	0.57 (0.11)***	0.64 (0.09)***	0.09 (0.13)	0.13 (0.18)
T2 ACC → T3 ACC	0.57 (0.11)***	0.60 (0.11)***	0.57 (0.11)***	0.50 (0.08)***
T3 ACC → T4 ACC	0.15 (0.12)	0.16 (0.13)	0.15 (0.12)	0.20 (0.16)
Cross-Lags				
T1 ACC → T2 ANX	0.22 (0.09)*	0.30 (0.11)*	-0.08 (0.05)	-0.19 (0.12)
T2 ACC → T3 ANX	-0.08 (0.05)	-0.13 (0.08)	-0.08 (0.05)	-0.11 (0.07)
T3 ACC → T4 ANX	-0.10 (0.13)	-0.16 (0.20)	-0.10 (0.13)	-0.15 (0.19)
T1 ANX → T2 ACC	-0.00 (0.13)	-0.00 (0.11)	-0.00 (0.13)	-0.00 (0.09)
T2 ANX → T3 ACC	-0.00 (0.13)	-0.00 (0.11)	-0.00 (0.13)	-0.00 (0.08)
T3 ANX → T4 ACC	0.82 (0.25)**	0.62 (0.13)**	-0.06 (0.20)	-0.06 (0.19)

Note. LCM-SR = Latent curve model with structured residuals; CLK = Cool Little Kids; Turtle = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; ANX = child anxiety; ACC = parent accommodation of child anxiety; † p = trend, * p < .05, ** p < .01, *** p ≤ .001.

Table 4. Indirect effects of the CLPM and LCM-SR examining reciprocal relations between child anxiety and parent accommodation of child anxiety

CLPM						
Path	B (SE)	CLK β (SE)	95% CI	B (SE)	Turtle β (SE)	95% CI
T1 ANX → T2 ANX → T3 ANX → T4 ACC	.22(.08)***	.17(.05)***	.08, .29	.13(.06)***	.13(.05)***	.04, .24
T1 ANX → T3 ANX → T4 ACC				.11(.06)*	.11(.06)*	.02, .25
T1 ANX → T2 ACC → T4 ACC	.15(.08)*	.12(.06)*	.01, .26			
T1 ANX → T2 ACC → T3 ACC → T4 ACC	.11(.06)*	.09(.05)*	.001, .20			
LCM-SR						
Path	B (SE)	CLK β (SE)	95% CI	B (SE)	Turtle β (SE)	95% CI
T1 ACC → T2 ANX → T3 ANX				.11(.05)*	.17(.08)*	.04, .34
T1 ACC → T2 ANX → T3 ANX → T4 ACC				.09(.06)*	.11(.06)*	.02, .25
T1 ANX → T2 ANX → T3 ANX → T4 ACC				.21(.14)***	.21(.01)***	.03, .56
T2 ANX → T3 ANX → T4 ACC				.40(.18)**	.38(.18)**	.10, .77

Note. CLPM = Cross-lagged panel model; LCM-SR = latent curve model with structured residuals; CLK = Cool Little Kids; Turtle = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; ANX = child anxiety; ACC = parent accommodation of child anxiety; †*p* = trend, **p* < .05, ***p* < .01, ****p* ≤ .001.

Table 5. Direct effects of the CLPM examining reciprocal relations between child anxiety and observed positive affect and negative control

Path	Turtle		CLK	
	B (SE)	β (SE)	B (SE)	β (SE)
Autoregressions				
T1 ANX → T2 ANX	0.83 (0.05)***	0.84 (0.04)***	0.74 (0.06)***	0.75 (0.04)***
T2 ANX → T3 ANX	0.44 (0.14)**	0.48 (0.16)**	0.74 (0.06)***	0.74 (0.07)***
T1 ANX → T3 ANX	0.32 (0.15)*	0.35 (0.16)*	-0.05 (0.10)	-0.05 (0.10)
T3 ANX → T4 ANX	0.31 (0.13)*	0.33 (0.13)*	0.31 (0.13)*	0.26 (0.12)*
T2 ANX → T4 ANX	0.30 (0.12)*	0.34 (0.14)*	0.73 (0.18)***	0.63 (0.11)***
T1 PA → T2 PA	0.43 (0.06)***	0.32 (0.05)***	0.43 (0.06)***	0.41 (0.06)***
T2 PA → T3 PA	0.43 (0.06)***	0.51 (0.07)***	0.43 (0.06)***	0.43 (0.06)***
T1 NC → T2 NC	0.26 (0.08)**	0.32 (0.09)**	0.53 (0.08)***	0.46 (0.07)***
T2 NC → T3 NC	0.32 (0.13)*	0.26 (0.11)*	0.14 (0.15)	0.15 (0.16)
T1 NC → T3 NC	0.13 (0.10)	0.13 (0.10)	0.43 (0.14)**	0.40 (0.13)**
Cross-Lags				
T1 PA → T2 ANX	-0.03 (0.03)	-0.05 (0.04)	0.03 (0.03)	0.06 (0.06)
T1 NC → T2 ANX	-0.02 (0.03)	-0.03 (0.04)	-0.02 (0.03)	-0.03 (0.05)
T2 PA → T3 ANX	-0.03 (0.03)	-0.07 (0.06)	0.03 (0.03)	0.07 (0.07)
T2 NC → T3 ANX	-0.02 (0.03)	-0.02 (0.04)	-0.02 (0.03)	-0.04 (0.06)
T3 PA → T4 ANX	-0.05 (0.05)	-0.10 (0.09)	-0.05 (0.05)	-0.09 (0.08)
T3 NC → T4 ANX	-0.03 (0.04)	-0.06 (0.07)	-0.03 (0.04)	-0.06 (0.07)
T1 ANX → T2 PA	0.09 (0.10)	0.05 (0.05)	0.09 (0.10)	0.05 (0.05)
T1 NC → T2 PA	-0.14 (0.07)*	-0.10 (0.05)*	-0.14 (0.07)*	-0.13 (0.07)*
T2 ANX → T3 PA	0.09 (0.10)	0.06 (0.06)	0.09 (0.10)	0.05 (0.05)
T2 NC → T3 PA	-0.14 (0.07)*	-0.10 (0.05)*	-0.14 (0.07)*	-0.15 (0.08)*
T1 ANX → T2 NC	0.00 (0.08)	0.00 (0.06)	0.00 (0.08)	0.00 (0.04)
T1 PA → T2 NC	-0.14 (0.05)**	-0.18 (0.07)**	-0.14 (0.05)**	-0.12 (0.05)**
T2 ANX → T3 NC	0.00 (0.08)	0.00 (0.05)	0.00 (0.08)	0.00 (0.04)
T2 PA → T3 NC	-0.14 (0.05)**	-0.19 (0.07)**	-0.14 (0.05)**	-0.14 (0.05)**

Note. CLPM = Cross-lagged panel model; CLK = Cool Little Kids; Turtle = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; ANX = child anxiety; PA = observed parent positive affect; NC = observed parent negative control; † p = trend, * p < .05, ** p < .01, *** p ≤ .001.

Table 6. Direct effects of the LCM-SR examining reciprocal relations between child anxiety and observed positive affect and negative control

Path	Turtle		CLK	
	B (SE)	β (SE)	B (SE)	β (SE)
Autoregressions				
T1 ANX → T2 ANX	0.62 (0.15)***	0.64 (0.13)***	0.17 (0.11)	0.28 (0.16)
T2 ANX → T3 ANX	0.17 (0.11)	0.30 (0.19)	0.17 (0.11)	0.09 (0.08)
T3 ANX → T4 ANX	-0.90 (0.51)†	-0.58 (0.24)†	0.21 (0.21)	0.23 (0.22)
T1 PA → T2 PA	0.15 (0.23)	0.12 (0.18)	0.23 (0.20)	0.19 (0.17)
T2 PA → T3 PA	0.41 (0.12)***	0.43 (0.13)***	0.23 (0.20)	0.27 (0.23)
T1 NC → T2 NC	-0.18 (0.15)	-0.28 (0.27)	-0.18 (0.15)	-0.16 (0.13)
T2 NC → T3 NC	-0.18 (0.15)	-0.11 (0.07)	-0.18 (0.15)	-0.18 (0.15)
Cross-Lags				
T1 PA → T2 ANX	0.02 (0.03)	0.03 (0.06)	0.02 (0.03)	0.05 (0.11)
T1 NC → T2 ANX	-0.01 (0.04)	-0.01 (0.07)	-0.01 (0.04)	-0.03 (0.15)
T2 PA → T3 ANX	0.02 (0.03)	0.07 (0.14)	0.02 (0.03)	0.04 (0.07)
T2 NC → T3 ANX	-0.01 (0.04)	-0.01 (0.08)	-0.01 (0.04)	-0.02 (0.10)
T3 PA → T4 ANX	0.08 (0.12)	0.22 (0.33)	0.02 (0.10)	0.04 (0.22)
T3 NC → T4 ANX	-0.10 (0.14)	-0.21 (0.28)	0.05 (0.06)	0.12 (0.16)
T1 ANX → T2 PA	0.87 (0.27)**	0.36 (0.12)**	-0.65 (0.40)	-0.27 (0.14)
T1 NC → T2 PA	0.05 (0.12)	0.03 (0.08)	0.05 (0.12)	0.04 (0.10)
T2 ANX → T3 PA	0.87 (0.27)**	0.37 (0.12)**	0.87 (0.27)**	0.25 (0.11)**
T2 NC → T3 PA	0.05 (0.12)	0.02 (0.05)	0.05 (0.12)	0.05 (0.13)
T1 ANX → T2 NC	-0.03 (0.21)	-0.03 (0.21)	-0.03 (0.21)	-0.01 (0.09)
T1 PA → T2 NC	-0.04 (0.13)	-0.08 (0.25)	-0.04 (0.13)	-0.04 (0.11)
T2 ANX → T3 NC	-0.03 (0.21)	-0.02 (0.12)	-0.03 (0.21)	-0.01 (0.05)
T2 PA → T3 NC	-0.28 (0.10)**	-0.39 (0.14)**	-0.03 (0.23)	-0.03 (0.24)

Note. LCM-SR = Latent curve model with structured residuals; CLK = Cool Little Kids; Turtle = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; ANX = child anxiety; PA = observed parent positive affect; NC = observed parent negative control; † p = trend, * p < .05, ** p < .01, *** p ≤ .001.

Table 7. Indirect effects of the CLPM examining reciprocal relations between child anxiety, and observed positive affect and negative control

CLPM						
Path	B (SE)	CLK β (SE)	95% CI	B (SE)	Turtle β (SE)	95% CI
T1 NC → T2 PA → T3 NC	.02(.01) [†]	.02(.01) [†]	-.001, .04	.02(.01) [†]	.02(.01) [†]	-.001, .04
T1 NC → T2 PA → T3 PA	-.06(.03)*	-.05(.03)*	-.10, .00	-.06(.03)*	-.05(.02)*	-.10, .00
T1 NC → T2 NC → T3 PA	-.07(.04)*	-.07(.04)*	-.16, .00	-.04(.03)*	-.03(.02)*	-.09, .00
T1 PA → T2 NC → T3 PA	.02(.01) [†]	.02(.01) [†]	-.001, .04	.02(.01) [†]	.02(.01) [†]	-.001, .04
T1 PA → T2 NC → T3 NC	-.02(.02)	-.02(.02)	-.06, .02	-.04(.02)*	-.04(.02)*	-.08, -.01
T1 PA → T2 PA → T3 NC	-.06(.03)**	-.06(.03)**	-.11, -.01	-.06(.03)**	-.06(.03)**	-.12, -.02
LCM-SR						
Path	B (SE)	CLK β (SE)	95% CI	B (SE)	Turtle β (SE)	95% CI
T1 ANX → T2 PA → T3 NC				-.23(.10)**	-.14(.06)**	-.26, -.04
T1 ANX → T2 PA → T3 PA				.34(.13)**	.15(.05)**	.06, .24
T1 ANX → T2 ANX → T3 PA				.53(.21)***	.24(.10)***	.07, .47

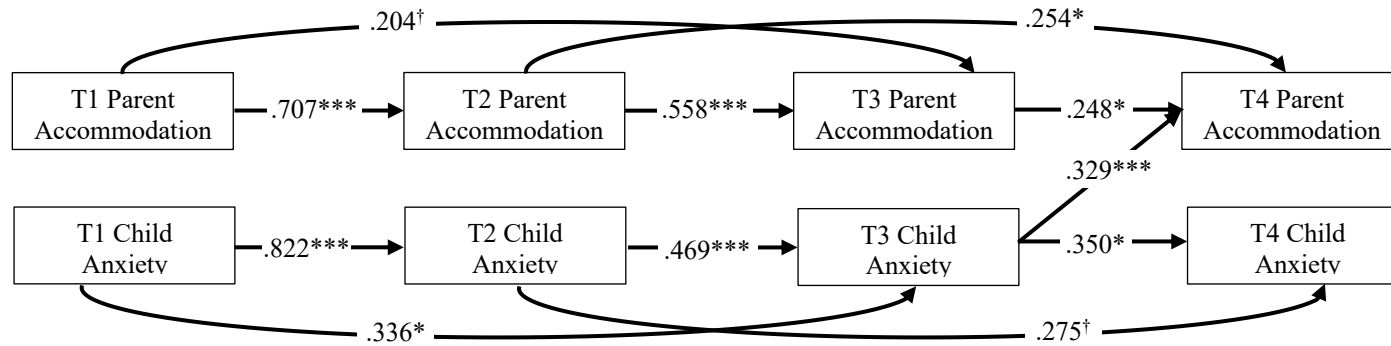
Note. CLPM = Cross-lagged panel model; LCM-SR = latent curve model with structured residuals; CLK = Cool Little Kids; Turtle = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; ANX = child anxiety; ACC = parent accommodation of child anxiety; [†]*p* = trend, **p* < .05, ***p* < .01, ****p* ≤ .001.

Figure 1. *The Turtle Program and Cool Little Kids session content*

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Session 7	Session 8
Turtle Program	PG: Anxiety Psychoeducation	PG: Review identification of child anxiety CDI teach	PG: Review identification of child anxiety Troubleshoot CDI In-vivo CDI coaching	PG: BDI teach Differential Attention for brave behaviors Principles of exposure + Fear hierarchies	PG: Troubleshoot CDI + exposures In-vivo BDI coaching (exposure practice) Monitoring and managing parent anxiety	PG: Troubleshoot CDI + exposures In-vivo BDI coaching (Show-and-Tell role play practice) ----- CG: Dealing with disappointment	PG: Troubleshoot CDI + exposures Differentiating anxiety and misbehaviors PDI teach ----- CG: Assertiveness	PG: Troubleshoot CDI + PDI + exposures Planning for future transitions In-vivo coaching during graduation ----- CG: Review skills
	CG: How to introduce yourself How to ask someone to play	CG: Eye contact Identifying anxiety Balloon Breathing (relaxation)	CG: How to give compliments How to share about hobbies	CG: What it means to be brave Introduction to bravery ladders	CG: Identifying and expressing emotions	CG: Compromising with friends Show-and-Tell	CG: Working together to make decisions Listening to others' ideas Scavenger Hunt	CG: Graduation ceremony and party
Cool Little Kids	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6		
	Anxiety psychoeducation	Review identification of child anxiety Role of anxiolytic parenting in increasing child anxiety Parent management skills for responding to child anxiety	Review examples of anxiolytic parenting Principles of exposure Fear hierarchies Monitoring parent anxiety in exposures	Troubleshoot exposures Additional fear hierarchies Cognitive restructuring for parent anxiety	Review parent encouragement of child independence Troubleshoot exposures Practice parent cognitive restructuring	Troubleshoot exposures Planning for future transitions		

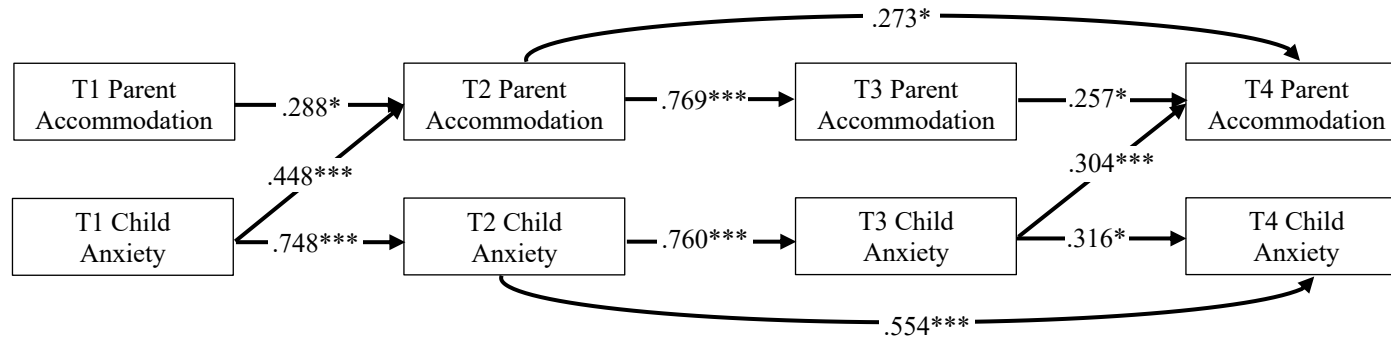
Note. CG = Child Group, PG = Parent Group, CDI = Child Directed Interaction, BDI = Bravery Directed Interaction, PDI = Parent Directed Interaction. For more information, see Chronis-Tuscano et al., 2015; Danko et al., 2018; Rapee et al., 2005.

Figure 2a. CLPM examining reciprocal relations between child anxiety and parent accommodation of child anxiety in Turtle



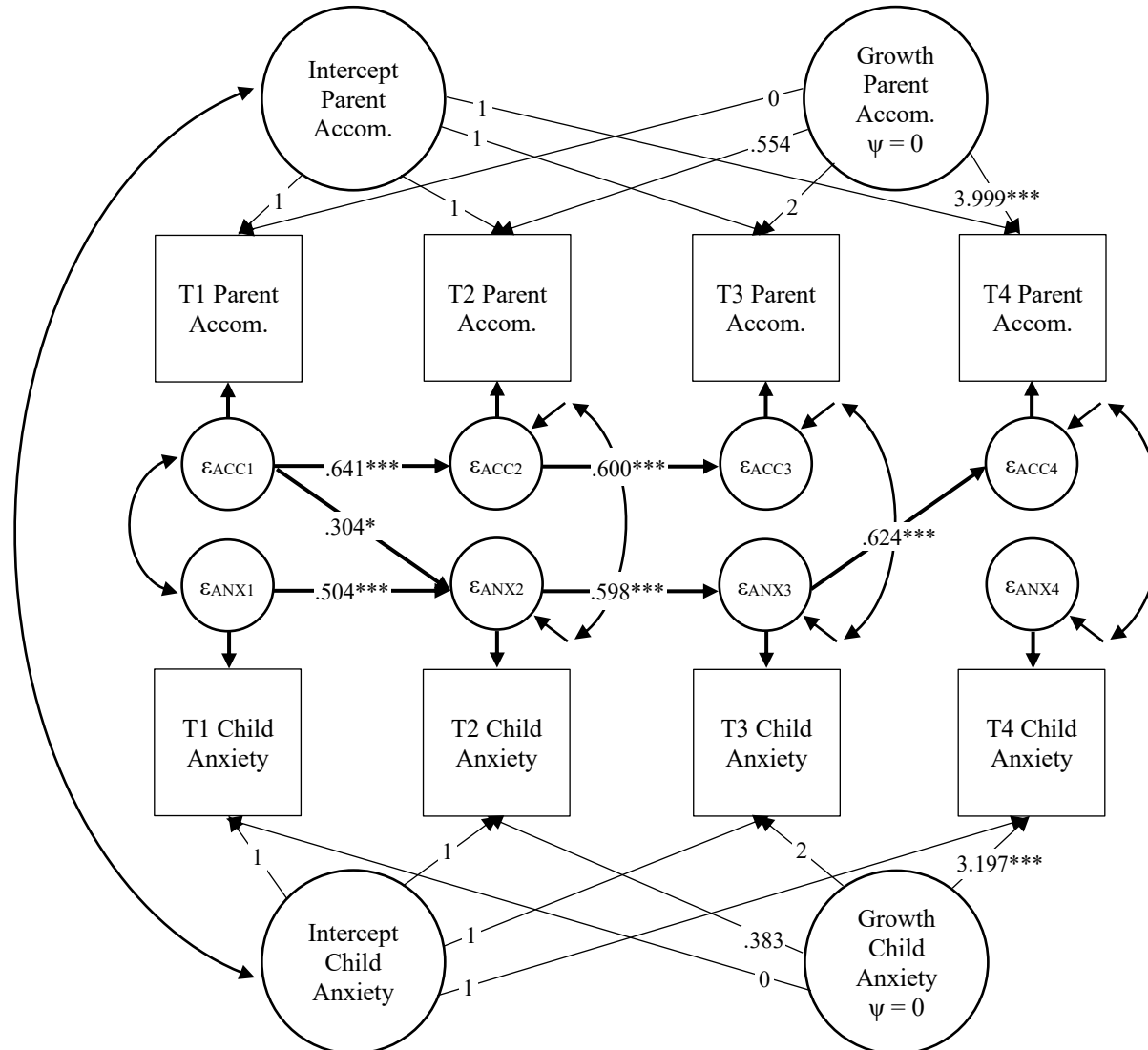
Note. CLPM = Cross-lagged panel model; Turtle = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; Only significant direct paths with standardized estimates are included for clarity; $^\dagger p = \text{trend}$, $*p < .05$, $**p < .01$, $***p \leq .001$.

Figure 2b. CLPM examining reciprocal relations between child anxiety and parent accommodation of child anxiety in CLK



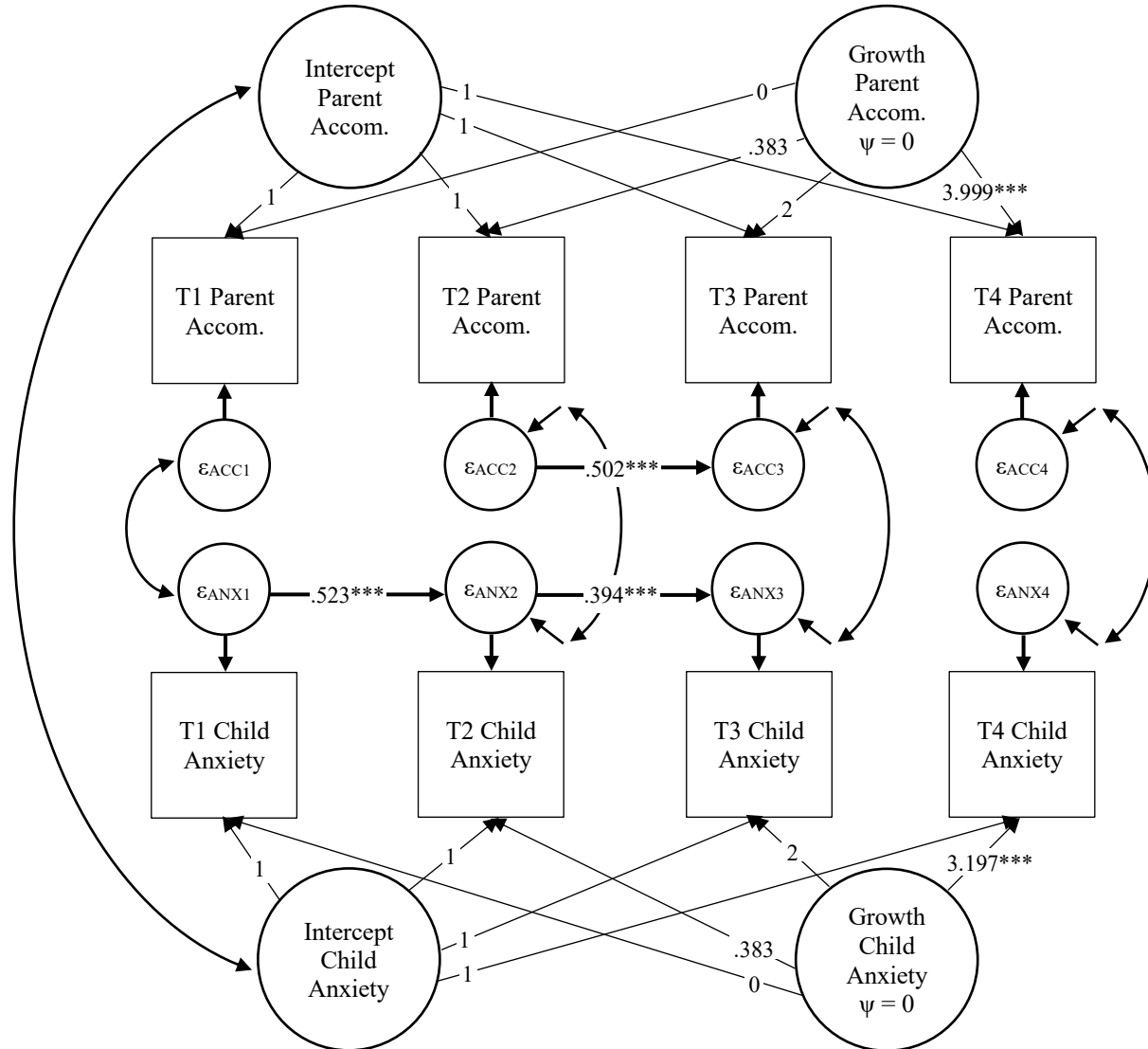
Note. CLPM = Cross-lagged panel model; CLK = Cool Little Kids; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; Only significant direct paths with standardized estimates are included for clarity; $^\dagger p = \text{trend}$, $*p < .05$, $**p < .01$, $***p \leq .001$.

Figure 3a. LCM-SR examining reciprocal relations between child anxiety and parent accommodation of child anxiety in Turtle



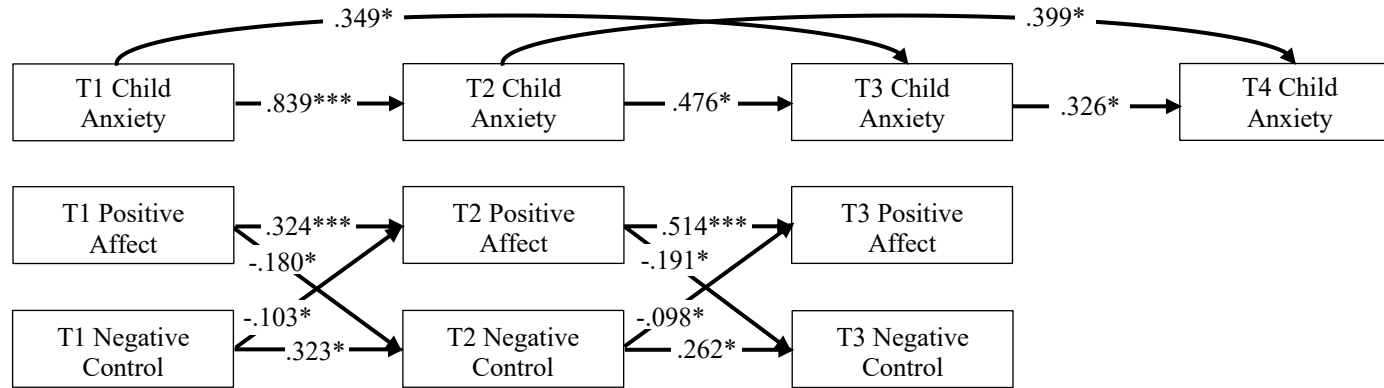
Note. LCM-SR = Latent curve model with structured residuals; Turtle = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; Accom./ACC = parent accommodation of child anxiety; ANX = child anxiety; ϵ = residual of observed measures; Only significant direct paths with standardized estimates are included for clarity; † p = trend, * p < .05, ** p < .01, *** p ≤ .001.

Figure 3b. LCM-SR examining reciprocal relations between child anxiety and parent accommodation of child anxiety in CLK



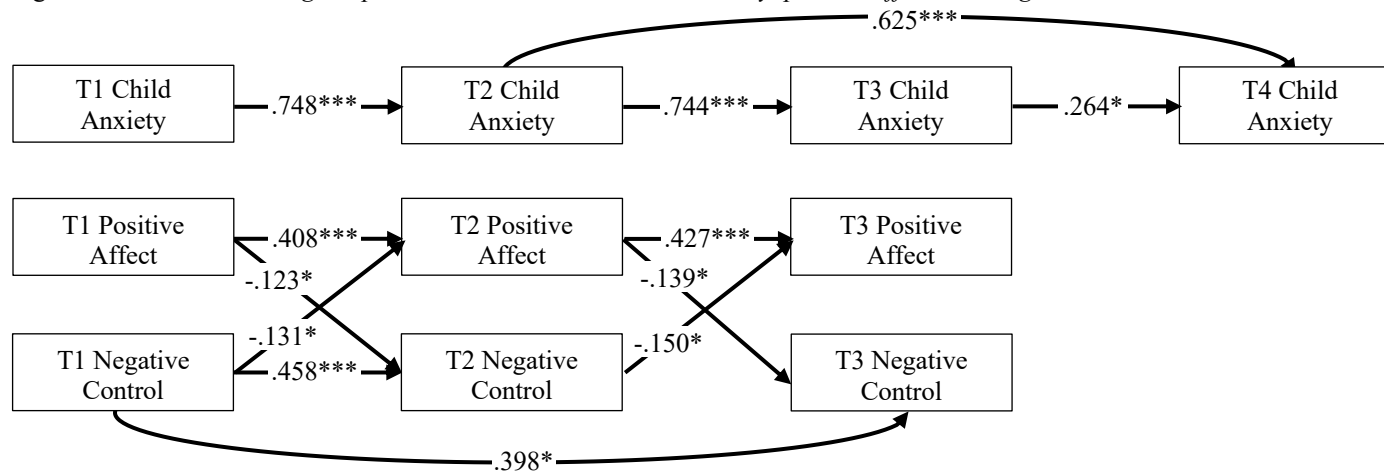
Note. LCM-SR = Latent curve model with structured residuals; CLK = Cool Little Kids; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; Accom./ACC = parent accommodation of child anxiety; ANX = child anxiety; ϵ = residual of observed measures; Only significant direct paths with standardized estimates are included for clarity; † p = trend, * p < .05, ** p < .01, *** p ≤ .001.

Figure 4a. CLPM examining reciprocal relations between child anxiety, positive affect, and negative control in Turtle



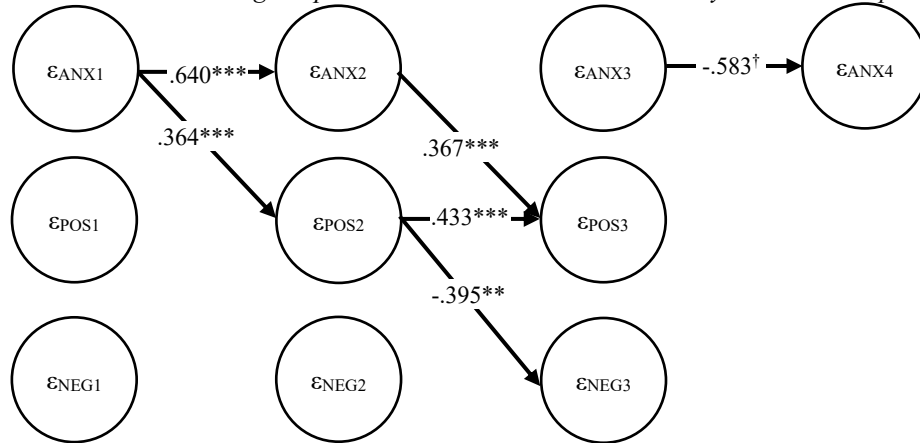
Note. CLPM = Cross-lagged panel model; Turtle = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; Only significant direct paths with standardized estimates are included for clarity; †*p* = trend, **p* < .05, ***p* < .01, ****p* ≤ .001.

Figure 4b. CLPM examining reciprocal relations between child anxiety, positive affect, and negative control in CLK



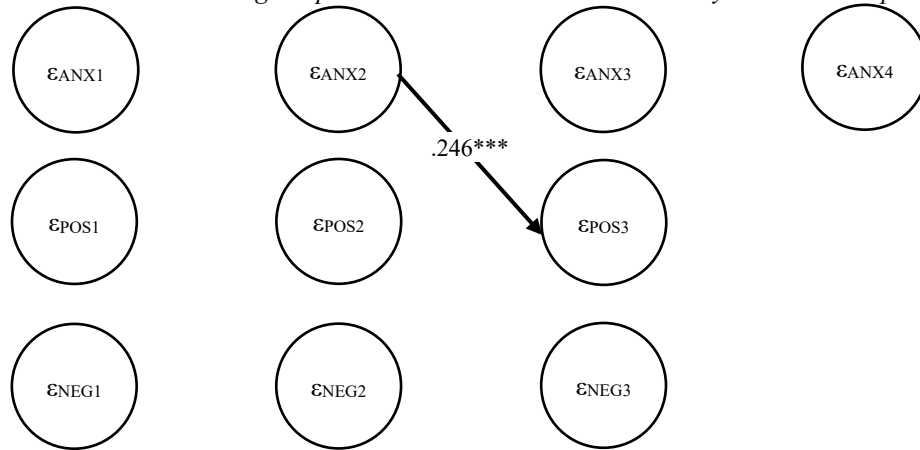
Note. CLPM = Cross-lagged panel model; “CLK” = Cool Little Kids; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; Only significant direct paths with standardized estimates are included; †*p* = trend, **p* < .05, ***p* < .01, ****p* ≤ .001.

Figure 5a. LCM-SR examining reciprocal relations between child anxiety and observed parenting in Turtle



Note. LCM-SR = Latent curve model with structured residuals; “Turtle” = The Turtle Program; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; ANX = child anxiety; POS = observed parent positive affect; NEG = observed parent negative control; ϵ = residual of observed measures; Only significant within-person direct paths with standardized estimates are included; [†] p = trend, * p < .05, ** p < .01, *** p ≤ .001.

Figure 5b. LCM-SR examining reciprocal relations between child anxiety and observed parenting in Turtle in CLK



Note. LCM-SR = Latent curve model with structured residuals; “CLK” = Cool Little Kids; T1 = pre-treatment, T2 = mid-treatment (4 weeks into treatment), T3 = post-treatment (4 weeks after T2), T4 = one-year follow-up; ANX = child anxiety; POS = observed parent positive affect; NEG = observed parent negative control; ϵ = residual of observed measures; Only significant within-person direct paths with standardized estimates are included; [†] p = trend, * p < .05, ** p < .01, *** p ≤ .001.

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