



## Prospective relations among preschoolers' play, coping, and adjustment as moderated by stressful events<sup>☆</sup>



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### ABSTRACT

This study evaluated the prospective contribution of preschoolers' pretend play to observer reports of internalizing and externalizing behavior problems one year later, as mediated by observed coping flexibility during a delay of gratification task and as moderated by children's exposure to stressful life events. Preschoolers' ( $N=250$ ;  $M_{\text{age}}=49.05$  months,  $SD=2.95$ ; 50% female) fantasy and affect expression in pretend play were assessed during a laboratory visit. Moderated mediation models tested for conditional indirect effects of play fantasy and affect expression on behavior problems through coping flexibility as a function of the child's exposure to stress. Preschoolers' fantasy and negative affect expression in pretend play predicted lower rates of internalizing, but not externalizing, problems. Coping flexibility partially mediated this relation, particularly among children with relatively more life stress. These findings clarify processes by which, and contexts within which, preschoolers' pretend play influences later behavioral adjustment.

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Pretend play is a powerful mechanism of and context for children's cognitive, affective, and social development (Göncü & Gaskins, 2006a, b; Pellegrini, 2010). Researchers have documented relations between the cognitive features of children's pretend play, such as the quality of expressed fantasy, and varied outcomes, including creativity, divergent thinking, and coping skills (Christiano & Russ, 1996; Christie & Johnsen, 1983; Niec & Russ, 2002; Russ & Schafer, 2006). Studies also show that affective features of children's pretend play, such as the frequency and valence of expressed affect in play, correlate with similar outcomes (Russ, 1993, 2004). Together, these studies demonstrate that pretend play is critical for healthy development (Pellegrini, 2001). However, little is known about either the mechanisms by which cognitive and affective pretend play features foster development, or about if and how these processes vary across contexts. Clarifying relations between children's pretend play and adjustment, as well as adaptive mechanisms that underlie them, will inform empirically-based practice and intervention in educational and clinical settings.

The capacity to engage in flexible thinking and problem solving is a likely candidate for understanding the positive developmental effects of pretend play. Some research on pretend play and coping supports this hypothesis (Russ, 1998), but other evidence suggests that these relations may vary across contexts (Christiano & Russ, 1996). The current

study advanced extant research on pretend play, coping, and child adjustment by using a prospective research design and observational measures in a large and diverse preschool sample to clarify the extent to which the contribution of preschoolers' fantasy and expressed emotion in pretend play to children's internalizing and externalizing behavior problems one year later can be explained by enhanced coping flexibility, as well as if and how these relations vary as a function of preschoolers' exposure to stressful life events.

### Theories of pretend play

Play is a universal, yet multi-faceted feature of child development. Theorists have long appreciated this diversity, emphasizing different dimensions of play to varying degrees. Some play typologies focus on sociocognitive factors, such as Parten's (1925) distinctions among solitary, onlooker, parallel, associative, and cooperative play patterns, which represent increasingly sophisticated social play behaviors as a function of children's developing cognitive abilities. Other theorists have categorized play based on its structure across functional, constructive, dramatic, and rule governed play types (Smilansky, 1968). More recently, Pellegrini and Smith (1998) emphasized the importance of context (e.g., school context, non-social context) when categorizing and defining play.

Despite their differences, play theorists typically view play as a childhood phenomenon that develops toward increasing complexity. Moreover, most recognize that children's emerging capacity to engage in symbolic thinking and pretense is central to this advancing sophistication, noting that the capacity to engage in playful pretense takes on special significance during the preschool period (Bergen, 2002; Pellegrini, 2010). Thus, the current investigation focused on preschoolers' pretend

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play and *behavioral* adjustment because pretense 1) is central to most theories of play, 2) takes on heightened importance during the preschool period, and 3) is a well-established correlate of positive child well-being and adjustment.

In pretend play, children engage in fantasy and symbolism such that pillows can become forts and sticks can be used “as-if” they were swords. Pretend play encompasses cognitive, affective, interpersonal, and conflict resolution capacities (Russ, 2004). Akin to broader theories and typologies of play, theorists have emphasized these processes to varying degrees when discussing *pretend* play.

Psychodynamic theorists conceptualized pretend play as a way for children to communicate and negotiate their inner desires. Freud (1961) suggested that pretend play helps children cope with negative experiences, such as the departure of a parent or a visit to the doctor, by providing a venue to reenact and control stressful life events. Erikson (1964) also believed that pretend play allows children to create model situations to deal with their experiences, but he emphasized the interpersonal salience of pretend play to a greater extent than Freud's affective emphasis.

Likewise, cognitive theorists viewed pretend play as an important context for development, but emphasized cognition over emotion. Although Piaget (1952) did not believe that pretend play teaches children new skills, he appreciated that play could serve as a venue for children to practice and consolidate newly-acquired skills that could be lost without the practice of play. Vygotsky (1978) believed that pretend play could facilitate the acquisition of new skills by helping children to separate meaning from objects thereby facilitating their transition from concrete to abstract thinking. Similarly, other cognitive theorists, such as Bruner (1972) and Sutton-Smith (1967), viewed pretend play as a way for children to free themselves from the constraints of the real world to develop their creativity and explore different possibilities, including varied behavioral options in response to challenging situations (see also Hutt, 1978).

#### *Pretend play and adjustment*

Although theorists emphasize unique dimensions of pretend play and posit different mechanisms undergirding its developmental effects, they nevertheless converge on the assertion that pretend play is central to healthy child development. Research supports cognitive and psychodynamic play theories to show that *both* cognitive and affective features of pretend play contribute to development. The quantity and quality of fantasy and affect expression in pretend play are associated with an array of adaptive indices, including creativity and divergent thinking, problem solving and goal orientation, emotion knowledge and regulation, social and educational adjustment, and internalizing and externalizing behaviors (Alessandri, 2008; Butcher & Niec, 2005; Castro, Mendez, & Fantuzzo, 2002; Coplan & Rubin, 2001; Lindsey & Colwell, 2003; Pearson, Russ, & Cain Spannagel, 2008; Seja & Russ, 1999). Moreover, these relations remain significant when intelligence is held constant (Christiano & Russ, 1996) and carry forward over time (Antelmanová & Severová, 1990; Chiang, Wu, & Lee, 2006; Rogers & Pennington, 2008). Although some researchers have suggested that positive relations between pretend play and adjustment may be explained by intermediary outcomes, such as flexible problem-solving and coping (Russ, 2004), research has yet to evaluate these suggestions empirically.

#### *Pretend play and coping flexibility*

Coping, particularly the flexibility with which a child is able to employ varied strategies in the face of challenge (i.e., coping flexibility), is a candidate mechanism for understanding the positive effects of pretend play on development. As reviewed previously, both cognitive features of pretend play, such as the quality of the child's engagement in fantasy, and affective features, such as the amount and valence of

expressed emotion in play, are associated with improved divergent thinking skills (Butcher & Niec, 2005; Kelly-Vance, Ryalls, & Glover, 2002; Russ & Kaugars, 2001; Russ & Schafer, 2006; Susa & Benedict, 1994). Moreover, evidence suggests that divergent thinkers have better coping skills, at least in part, because they can employ varied coping strategies (Carson, Bittner, Cameron, Brown, & Meyer, 1994; Russ, 1988, 1998). Yet coping flexibility is distinct from divergent thinking because it captures the ability to engage multiple problem-solving strategies when negotiating a challenging situation, whereas divergent thinking refers to a broader capacity for flexible thinking that may or may not translate to coping behavior in the face of challenge.

Prior research has documented the important contribution of pretend play to problem-solving capacities, and, by extension, to varied adjustment outcomes. Russ, Robins, and Christiano (1999) found that children's ability to engage in imaginative and expressive play in early grade school was positively related to their ability to come up with more unique solutions when presented with problem scenarios (e.g., What would you do if you lost a book you need to study for a test?). In addition to heightened coping flexibility (i.e., number of strategies used), imaginative and expressive players were more likely than their less imaginative and expressive peers to evidence high quality problem-solving during a challenge task four years later. Similarly, in a sample of 55 first graders, Goldstein and Russ (2000) found that children's capacity for imaginative play was positively related to their use of varied coping strategies when presented with a challenging story task. Extending to in situ observations, Christiano and Russ (1996) found that grade school children who expressed more affect in their pretend play evidenced more positive coping strategies during an invasive dental procedure relative to their peers who were less expressive in play. Building on these findings, the current study examined whether cognitive and affective pretend play features (i.e., fantasy quality, positive affect expression, and negative affect expression) were related to children's flexible problem-solving and coping in the face of a challenging task.

#### *Coping flexibility and adjustment*

Coping flexibility may serve as an adaptive mechanism underlying expected relations between pretend play and positive development. Coping reflects “cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141). Previous studies of coping and adjustment have focused on specific types of coping, such as problem-focused coping, emotion-focused coping, or support seeking (Compas & Boyer, 2001). However, these studies have yielded mixed results, with some suggesting that coping strategies are similarly adaptive in all contexts (Eisenberg et al., 1993), and others indicating that the effectiveness of specific coping strategies may vary as a function of different factors, including prior stress exposure (Band & Weisz, 1988; Berzenski, 2011; Brand & Alexander, 2003) or resource availability (Grey, Berzenski, & Yates, 2012). Inconsistent findings in the literature on coping and adjustment point to the importance of looking at coping *processes*, such as coping flexibility, rather than solely on specific coping strategies.

In the present study, we assessed children's capacity to engage multiple distinct coping strategies in the face of a challenge (i.e., coping flexibility) as a putative explanatory mechanism underlying expected relations between children's fantasy and affect expression in pretend play and their behavioral adjustment one year later. Behavior problems are a salient index of adjustment during the preschool years, because children's capacities to regulate negative emotion (i.e., internalizing problems) and behavior (i.e., externalizing problems) take on increasing importance during this developmental period (Eisenberg et al., 1997; Eisenberg et al., 2001). The capacity to confront challenging situations with a flexible coping style was expected to support children's emotional and behavioral adjustment.

### Pretend play, coping flexibility, and behavioral adjustment in context

Children encounter varying degrees and forms of stressful life events, and their differential levels of exposure may magnify or attenuate specific developmental processes and pathways (Brooks-Gunn, 1988; Trad & Greenblatt, 1990). Coping abilities contribute to positive adjustment and reduce maladjustment, but they also take on increased salience in stressful contexts (see Compas & Boyer, 2001 for review). Several studies have examined the relation between coping and adjustment in various contexts, including those characterized by relative elevations in stressful life events (de Anda et al., 1997; Fabes & Eisenberg, 1992). McCubbin, Needle, and Wilson (1985) explored the influence of family stressors, such as divorce, death of a close relative, and familial incarceration, on adolescents' coping strategy selection, but research has not fully evaluated the influence of stressful life events on expected relations between coping and adjustment.

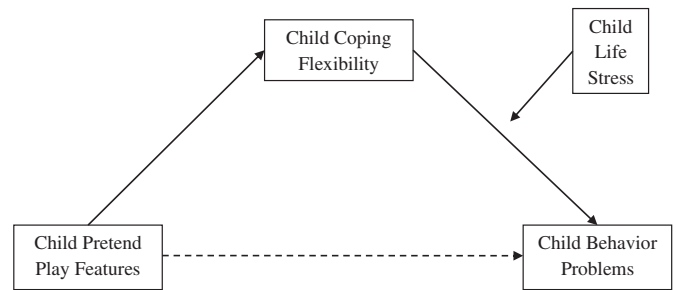
In a recent cross-sectional study of sixty-one 5.5–10-year-old females, Burck (2011) found only moderate support for relations among pretend play, which was measured with the Affect in Play Scale (Russ, 2004), teacher and maternal reports of coping on the Emotion Regulation Checklist (Shields & Cicchetti, 1997), self-reported coping on the School Coping Scale (Russ & Peterson, 1990), teacher reported adjustment on the Behavior Assessment System for Children (Reynolds & Kamphaus, 2004), and self-reported life stress, which was measured with the Coddington Life Events Scale for Children (Coddington, 1972a,b) and Daily Life Stressors Scale (Kearney, Drabman, & Beasley, 1993). In this small, variably-aged, single-gender sample, pretend play was related to teacher-rated adjustment, but there were no significant interactions between play and stress or between coping and stress.

Burck's (2011) findings illustrate the need for contextually-sensitive studies of play, coping, and adjustment while highlighting potential avenues to strengthen it. First, most research on pretend play, coping, and adjustment has been cross-sectional, which limits the capacity to evaluate predictive relations. Second, relative to naturalistic studies of children's peer play (Bulotsky-Shearer et al., 2012), studies of nonsocial, pretend play have typically employed small, homogenous White middle-class samples with limited generalizability. Third, there is a pressing need for studies to examine contextual influences on the meaning and mechanisms of play effects in development. Finally, only a few studies have used observational measures of coping (e.g., Galyer & Evans, 2001), and most have been conducted in clinical settings (e.g., Christiano & Russ, 1996).

#### The current study

This study evaluated relations among pretend play and adjustment, pretend play and coping, and coping and adjustment using observational measures in a large and diverse preschool sample. Moreover, analyses evaluated if and how expected mediating relations among preschoolers' pretend play features (i.e., fantasy and affect expression), coping flexibility (i.e., the number of strategies used during a laboratory challenge), and prospective adjustment (i.e., observer ratings of children's internalizing and externalizing behavior problems) varied by context (i.e., children's exposure to stressful life events; see Fig. 1).

We examined solitary pretend play using a standardized laboratory task to assess preschoolers' capacities for imaginative and expressive pretend play as distinct from the socially embedded manifestations of these same play features in peer play. We predicted that cognitive and affective pretend play features would engender positive behavioral adjustment, and that these developmental effects would be explained by positive relations between pretend play features and children's capacity to engage in flexible coping. Moreover, we hypothesized that contexts of challenge would magnify the developmental significance of individual differences in coping flexibility, such that the proposed mediating relations among pretend play features and child behavioral adjustment through coping flexibility would be stronger for children with relatively



**Fig. 1.** Conceptual model of the contribution of children's pretend play features (i.e., fantasy quality, positive affect, negative affect) to internalizing and externalizing child behavior problems through coping flexibility as moderated by child life stress. Covariates (not shown) include child gender, child age, Hispanic child, child IQ, family SES, and negative affect during the coping challenge.

high exposure to stressful life events relative to children with less stress exposure. In evaluating these hypotheses, we sought to clarify when and why a specific explanatory path from pretend play to child behavioral adjustment would be relatively more or less salient for understanding child development to inform applied practice and intervention with vulnerable children and families.

## Method

### Participants

The current investigation is part of an ongoing longitudinal study of child development among 250 diverse preschoolers (50% female;  $M_{\text{age}}=49.05$  months,  $SD=2.95$ ; 50% Hispanic, 18.0% Black, 10.4% White, .4% Asian, and 21.2% multiracial). Families were recruited to participate in a study of children's early learning and development via flyers placed in community-based child development centers and preschool programs. Caregivers completed a brief intake screening by phone before scheduling a 3-hour laboratory assessment. Exclusionary criteria included children with diagnosed developmental disabilities and delays ( $n=3$ ), children who were not able to understand English ( $n=4$ ), and children outside the target age range of 45–54 months (not tracked). The sample in this study is consistent with the demographics of the surrounding community from which it was drawn (U.S. Census Bureau, 2011a).

The majority of caregivers were biological mothers (91.2%). Education levels were variable (i.e., 19.8% of caregivers had not completed high school, 17.3% had a high school diploma or GED, 62.9% had some kind of technical training or college coursework). Just over half the caregivers were employed (55.6%). The majority of caregivers were married (61.6%) or in a committed relationship (18.8%). The average family socioeconomic status (SES) score, based on the Hollingshead (1975) Four-Factor Index of Social Status, was 32.13 ( $SD=12.14$ ), which corresponds to semi-skilled employment (e.g., sales clerk).

Preschooler-caregiver dyads completed a three-hour assessment in a child-friendly university laboratory. Caregivers completed narrative assessments, a semi-structured clinical interview, and standardized questionnaires while the child completed a variety of tasks, including measures of intelligence, symbolic play, and coping during a frustrating delay of gratification task, in an adjacent room. Follow-up assessments were completed one year later ( $M_{\text{age}}=61.93$  months;  $SD=2.45$ ), at which time, 215 dyads (86% retention) completed a range of novel tasks and child adjustment measures. Chi-square analyses and independent samples *t*-tests indicated that participants who returned for the follow-up assessment did not differ from those who did not on all study variables, including child gender, race-ethnicity, age, IQ, family SES, play, behavior problems, coping flexibility, and stress.

## Measures

### Intelligence

During the wave one visit, children completed the Vocabulary and Block Design subtests of the Wechsler Preschool and Primary Scale of Intelligence – III (Wechsler, 2002). Verbal IQ was assessed using the Vocabulary test in which the child pointed at pictures to identify orally presented words for children who were less than 48 months of age, or verbally explained what orally-presented words mean for children who were 48 months or older. The age appropriate measure of vocabulary was used to assess each child's verbal ability ( $M=96.87$ ,  $SD=15.55$ ). Performance IQ was assessed using the Block Design subtest in which the child was asked to assemble red and white blocks to match models ( $M=92.33$ ,  $SD=17.67$ ). Estimated Verbal and Performance IQs were averaged to yield a prorated measure of Full Scale IQ ( $M=94.97$ ,  $SD=13.54$ ), which was used as a covariate in subsequent analyses.

### Play

The Affect in Play Scale – Preschool version (APS-P, Kaugars & Russ, 2009) is a five-minute standardized play measure that was adapted from the Affect in Play Scale for school-aged children (Russ, 1993, 2004) to measure cognitive and affective processes in preschoolers' play. Measures of fantasy quality, negative affect frequency, and positive affect frequency from the wave one assessment were used as individual predictors in the current analyses.

The APS-P has demonstrated strong reliability and validity in preliminary studies (Bonucci, Lis, Di Riso, Salcuni, & Mazzeschi, 2008; Fehr & Russ, 2013; Kaugars & Russ, 2009). Further, evidence points to concurrent validity between the APS-P and Russ' well-established APS scale (Mazzeschi, Salcuni, Parolin, & Lis, 2004). Whereas the APS uses two human puppets to inspire play, the APS-P uses a standardized set of toys that are designed to activate a range of aggressive, neutral, and affiliative themes. Children were presented with the following toys in a scripted fashion: five small stuffed animals (i.e., hippo, bear, big dog, little dog, shark), three plastic cups, one small car, four plastic zoo animals (i.e., elephant, giraffe, zebra, and tiger), and one small, colored, squishy ball with bumps.

After presenting the toys to the child, the examiner narrated a play vignette in which the bear toy looked in one cup and found good food to eat and then looked in another cup and found food s/he did not like. The examiner then instructed the child to keep playing and make up a story. Children were encouraged to play freely for 5 min. If the child did not play after the first 30 s, s/he was encouraged to "go ahead, play with the toys and make up a story." The same prompt was used again if the child continued not to play for an additional 60 s. The task was discontinued after 2 min if the child did not play. Examiners repeated each child utterance to facilitate coding accuracy and encourage ongoing play, as is often done in play assessments with young children (Emde, Wolf, & Oppenheim, 2003).

APS-P administrations were video recorded and transcribed verbatim for coding by advanced research assistants. *Fantasy quality* was indicated by a composite of three 5-point ratings of the child's imagination in play (i.e., the extent to which the child depicted novel and unique themes), organization (i.e., the coherence of the child's play), and complexity (i.e., the extent to which the child enacted complex themes, sound effects, voice intonation, and character development in her/his play). Measures of *affect frequency* were based on the child's verbal and nonverbal affect expressions in the play narrative (e.g., "They are saved [the little dog and the big dog hug];" "You ate all my grass and I kick your butt with my tail"). Expressions of affect were coded as present/absent across 11 categories of positive (e.g., happy/pleasure, nurture/affection) and negative (e.g., sad/hurt, anger/aggression) affect during each 10-second play interval and composited to yield measures of positive and negative affect frequency in play. Interrater reliabilities

across 30% of the sample were excellent for ratings of fantasy ( $ICC=.94$ ), positive affect frequency ( $ICC=.85$ ), and negative affect frequency ( $ICC=.97$ ).

Evidence for the validity of the APS-P in ethnoracially diverse samples is limited. The APS has been used in samples with non-White children, including Hispanics (Christian, Russ, & Short, 2011) and African Americans (see Fehr & Russ, 2013; Scott, Short, Singer, Russ, & Minnes, 2006 for similar findings using the APS) with relations observed between play indicators and theoretically relevant constructs, such as problem behaviors and social competence. Using the APS-P, several studies have documented comparable relations between play variables and child adjustment indicators, such as emotional understanding, verbal IQ, and internalizing and externalizing behaviors, among African Americans and White European Americans (Kaugars, Noland, & Singer, 2001; Kaugars, Russ, & Singer, 2009; Scott et al., 2006). In addition, the criteria for coding children's fantasy in play are designed to be relatively robust to cultural differences. For example, imagination is coded based on the relations among story elements, rather than the elements themselves. Thus, playing a game or preparing food is not novel regardless of what game or food types are depicted. In contrast, pairing two things in unusual ways (e.g., a tiger sailing a boat) would be considered unique. As such, the APS-P coding scheme to assess the quality of pretend play is designed to capture expressions of creativity and imagination in a similar fashion across cultural groups.

Preliminary findings from the current study support the validity of the APS-P among Hispanic children. Ancillary analyses evaluated the comparability of relations among the APS-P dimensions (i.e., fantasy, negative affect, positive affect) and between each play feature and external measures of IQ and adjustment among Hispanic and non-Hispanic sub-samples. Relations among the play variables themselves were the same between the groups. Similarly, all relations between play and adjustment were comparable across groups with only slight differences suggesting somewhat stronger relations among non-Hispanic children than among Hispanic children. Importantly, the reliability of the play variables was similar across groups for fantasy ( $ICC_{\text{Hispanic}}=.95$ ;  $ICC_{\text{non-Hispanic}}=.93$ ), positive affect ( $ICC_{\text{Hispanic}}=.84$ ;  $ICC_{\text{non-Hispanic}}=.82$ ), and negative affect ( $ICC_{\text{Hispanic}}=.97$ ;  $ICC_{\text{non-Hispanic}}=.97$ ).

### Coping flexibility

Children's coping was assessed during a delay of gratification task that was administered during wave one of the study. The child was instructed to sit on the floor while the examiner played with an attractive remote control car for 2 min in front of her/him (Bennett, Bendersky, & Lewis, 2005). If the child asked to play with the car, the examiner ignored her/him. If the child reached for the car, the examiner responded by saying, "Don't touch the car" in a neutral voice. After the two-minute delay period, the child was allowed to play with the car. Although delay tasks can be used to measure emotion regulation (duration of negative affect; Cole, Zahn-Waxler, & Smith, 1994), they also reveal information about children's coping strategy use in response to challenge (Eisenberg et al., 1993). Children's coping was coded for different strategies, including instrumental (e.g., child asks when it will be her/his turn), avoidance/distraction (e.g., child plays with other toys in the room), aggressive (e.g., child hits the examiner), venting (e.g., child cries), support seeking (e.g., child asks for the examiner or caregiver), and cognitive restructuring (e.g., child verbally comforts her/himself by stating "I'll get to play with it later"; Berzenski, 2009; Eisenberg et al., 1993).

Consistent with prior studies that define coping flexibility based on the variety of strategies used to negotiate challenge (Biao & Yang, 2006; Kato, 2012; Watanabe, Iwanaga, & Ozeki, 2002), coping flexibility was indicated by the total number of different strategies employed by the child during the two-minute waiting period (range=0–5;  $M=2.44$ ,  $SD=1.73$ ;  $ICC$  across 30% of the cases=.84). Not surprisingly,

children who evidenced higher levels of negative affect in the task, which was measured on a four-point scale (range=0–3;  $M=.54$ ,  $SD=.71$ ; ICC across 30% cases=.94), tended to exhibit more coping ( $r=.22$ ,  $p=.001$ ). Therefore, all analyses controlled for the child's negative affect during the delay of gratification task to ensure that the findings were pertinent to coping flexibility, and not child distress.

The car-based delay of gratification task in this study has been used in only one other study, which employed a predominantly African American sample (Bennett et al., 2005). However, similar delay of gratification tasks (e.g., waiting one's turn, waiting for a reward) have been used in several studies (Tobin & Graziano, 2010), including with racially and socioeconomically heterogeneous samples (Cipriano & Stifter, 2010; Doan, Fuller-Rowell, & Evans, 2012; Mittal, Russell, Britner, & Peake, 2012; Wilson, Lengua, Tininenko, Taylor, & Trancik, 2009). Extensive data support the validity of these measures in diverse populations as evidenced by consistent associations with theoretically relevant variables, such as informant reports on reactivity and emotionality, across ethnic groups (Cipriano & Stifter, 2010; Doan et al., 2012; Mittal et al., 2012; Wilson et al., 2009). Preliminary findings in this study revealed no significant differences in correlations between coping flexibility and external measures of IQ and adjustment between Hispanic and non-Hispanic children. Moreover, the reliability of coping flexibility was comparable across groups ( $ICC_{\text{Hispanic}}=.93$ ;  $ICC_{\text{non-Hispanic}}=.92$ ).

### Stressful life events

Caregivers reported on children's exposure to stressful life events during the wave one assessment using a list of 19 items from the Parent Stress Index (PSI; Abidin, 1995). Caregivers were asked if an array of events (e.g., divorce, death, change in finances, residential move, legal problems) had occurred in the immediate family during the preceding 12 months. If the caregiver endorsed "yes," she was asked to rate how much of an effect it had in her own life and on her child using separate 5-point Likert scales from an *extremely positive impact* (1) to an *extremely negative impact* (5; Sarason, Johnson, & Siegel, 1978). Caregiver ratings of the impact of stressful life events on the child were used in this study. Scores were recoded from extremely negative (2) to neutral (0) to extremely positive (–2) values and composited to yield an index of child stress exposure. The sample evidenced varying levels of stress exposure with an average of 3.6 stressful life events occurring during the preceding year ( $SD=2.20$ ). The most common stressors endorsed were moving to a new school (52.4%), decrease in income (43.4%), and pregnancy (34%). The PSI has been well-validated in the literature, including in ethnographically diverse samples (Barker et al., 2011; Costin & Chambers, 2007; Kratochvil et al., 2007; Lee, Taylor, & Bellamy, 2012).

### Child behavior problems

The Test Observation Form (TOF; McConaughy & Achenbach, 2004) was completed by the examiner following the three-hour laboratory assessment at wave two. Examiners rated the child across 125 behavioral descriptors using a 4-point scale that ranged from *no occurrence of the behavior* (0), to *very slight or ambiguous occurrence of the behavior* (1), to *a definite occurrence with mild to moderate intensity and frequency and less than three minutes total duration* (2), to *a definite occurrence with severe high intensity, high frequency, or three or more minutes total duration* (3). The TOF contains two broadband psychopathology scales that assess internalizing (e.g., withdrawn/depressed) and externalizing (e.g., attention problems) problems. TOF scores are scaled with respect to child age and gender with a  $t$ -score  $\geq 63$  connoting clinically significant problems (McConaughy & Achenbach, 2004). Clinical elevations in internalizing and externalizing behaviors were observed in 16.67% and 9.31% of the current sample, respectively.

Although not available from the single rater data in this study, McConaughy and Achenbach (2004) reported interrater reliabilities of  $r=.43$  and  $.78$  for internalizing and externalizing behavior scores,

respectively, and test–retest reliabilities of  $r=.83$  for both scale scores in their validation sample. Moreover, they used a diverse sample to develop and validate this measure, which has since been used in other ethnographically diverse samples (McConaughy, Ivanova, Antshel, & Eiraldi, 2009; Rettew, Stanger, McKee, Doyle, & Hudziak, 2006).

### Data preparation and analysis

All data were examined for non-normality (Afifi, Kotlerman, Ettner, & Cowan, 2007). Four participants were dropped from these analyses due to missing data on the play ( $n=3$ ) or coping measure ( $n=1$ ) at wave one yielding a final sample of 246. The expectation-maximization (EM) algorithm (Schafer & Graham, 2002) estimated missing data for externalizing and internalizing behavior problems for participants who did not complete the wave two assessment ( $n=32$ ; 13.3%) using LISREL 8.72 (Jöreskog & Sörbom, 2001). A multivariate analysis of variance (MANOVA) evaluated group differences in study variables as a function of the child's gender, race–ethnicity, and their interaction. Bonferroni-corrected post hoc comparisons probed for significant differences in study variables that evidenced a main effect of race–ethnicity. Bivariate analyses explored relations among study variables to inform mediation and moderated mediation analyses.

Separate models evaluated the indirect effect of each pretend play feature (i.e., fantasy, positive affect, negative affect) on children's behavior problems one year later (i.e., internalizing and externalizing behaviors) through coping flexibility (i.e., number of strategies employed during a challenging delay of gratification task). Moderated mediation analyses evaluated whether or not the mediating path through coping flexibility was significantly stronger among children who had been exposed to relatively more stressful life events during the year preceding the first interview than among those with relatively lower levels of stress exposure.

Hayes (2013) SPSS PROCESS routines for simple mediation and moderated mediation yielded 95% bootstrapped confidence intervals for both unconditional and conditional effects. Bootstrapping is a non-parametric technique that minimizes the influence of non-normality across study variables, and yields a more reliable estimation of mediation than Sobel's (1982) test, particularly in smaller samples (Preacher, Rucker, & Hayes, 2007). Bootstrapping allows for direct estimation of mediation and accommodates violations of the assumption that the interaction term is normally distributed. Moreover, bootstrapping mitigates power problems due to the asymmetric and non-normal sampling distribution of indirect effects (Edwards & Lambert, 2007). These routines also permit the evaluation of conditional indirect effects (i.e., moderated mediation) by calculating the significance of the indirect effect at a given value of the moderator. In this investigation, indirect effects were calculated at low (minus 1 SD), average, and high (plus 1 SD) levels of child life stress. All models controlled for child age, child IQ, child gender, child race–ethnicity (non-Hispanic=0, Hispanic=1), family SES, and child negative affect during the coping task. All predictors were centered to reduce multicollinearity (Kraemer & Blasey, 2006).

## Results

### Descriptive findings

Table 1 depicts descriptive statistics for study variables by child gender and race–ethnicity. A MANOVA revealed main effects for gender (Wilks'  $\lambda=.83$ ,  $p=.00$ ), race–ethnicity (Wilks'  $\lambda=.81$ ,  $p=.03$ ), and their interaction (Wilks'  $\lambda=.80$ ,  $p=.02$ ). Females expressed higher rates of positive affect in play and lower levels of negative affect in play than their male peers. Post-hoc Bonferroni-corrected comparisons probed significant ethnic differences in child IQ, play fantasy, coping flexibility, and negative affect during the car task. White children earned higher IQ scores than their Hispanic peers. Black children expressed higher quality of fantasy and more negative affect during

**Table 1**  
Descriptive statistics for study variables by child gender and race–ethnicity.

| Variable                    | Child gender                 |                             | Child race–ethnicity         |                             |                       |                             | Univariate ANOVA |           |                  |
|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|-----------------------|-----------------------------|------------------|-----------|------------------|
|                             | Male<br>M<br>(SD)            | Female<br>M<br>(SD)         | White<br>M<br>(SD)           | Black<br>M<br>(SD)          | Hispanic<br>M<br>(SD) | Multi/other<br>M<br>(SD)    | F<br>Gender      | F<br>Race | F<br>Gender×Race |
| Child age (months)          | 49.07<br>(2.85)              | 49.04<br>(2.98)             | 49.58 <sup>a</sup><br>(2.64) | 48.45<br>(3.15)             | 49.26<br>(2.84)       | 48.82<br>(2.95)             | 0.76             | 1.25      | 1.79             |
| Child IQ                    | 93.56<br>(12.82)             | 96.38<br>(14.13)            | 101.29<br>(17.92)            | 94.56<br>(13.09)            | 92.70<br>(11.90)      | 97.53<br>(14.17)            | 2.23             | 3.77*     | 2.33             |
| Family SES                  | 31.37<br>(12.11)             | 32.76<br>(12.26)            | 38.25<br>(13.08)             | 31.79<br>(13.00)            | 30.89<br>(11.14)      | 32.19<br>(12.89)            | 1.32             | 2.23      | 0.94             |
| Fantasy quality in play     | 2.77<br>(1.05)               | 2.64<br>(1.17)              | 2.86<br>(1.32)               | 3.04 <sup>a</sup><br>(1.13) | 2.52<br>(1.05)        | 2.79<br>(1.06)              | 0.49             | 2.73*     | 0.06             |
| Positive affect frequency   | 5.25<br>(4.57)               | 6.94<br>(6.34)              | 7.06<br>(6.33)               | 7.48<br>(7.52)              | 5.39<br>(4.93)        | 6.19<br>(4.72)              | 7.91**           | 1.78      | 2.83*            |
| Negative affect frequency   | 10.85<br>(9.06)              | 5.54<br>(5.17)              | 8.69<br>(8.61)               | 9.30<br>(8.70)              | 7.69<br>(7.90)        | 8.26<br>(6.69)              | 21.53***         | 0.69      | 1.55             |
| Coping flexibility          | 2.37 <sup>a</sup><br>(1.611) | 2.51 <sup>a</sup><br>(1.84) | 3.04 <sup>a</sup><br>(2.07)  | 2.98<br>(1.94)              | 2.02<br>(1.58)        | 2.70 <sup>a</sup><br>(1.51) | 0.89             | 5.40**    | 0.51             |
| Negative affect in car task | .09<br>(.17)                 | .10<br>(.19)                | .11<br>(.15)                 | .16 <sup>a</sup><br>(.30)   | .06<br>(.10)          | .10<br>(.20)                | 0.15             | 3.58*     | 4.61*            |
| Internalizing problems      | 58.67<br>(5.34)              | 59.84<br>(5.50)             | 58.50<br>(4.86)              | 57.90<br>(3.64)             | 59.98<br>(6.07)       | 59.00<br>(5.19)             | 2.42             | 1.98      | 1.48             |
| Externalizing problems      | 57.73<br>(4.77)              | 57.30<br>(3.74)             | 56.50<br>(2.43)              | 57.57<br>(4.42)             | 57.21<br>(3.61)       | 58.56<br>(5.79)             | 0.21             | 1.96      | 1.03             |
| Child life stress           | −1.85<br>(2.98)              | −1.79<br>(3.02)             | −2.17<br>(2.84)              | −2.24<br>(2.75)             | −1.65<br>(2.95)       | −1.72<br>(3.35)             | 0.03             | 0.51      | .13              |

<sup>a</sup> Significantly different from Hispanic.  
\**p*<.05. \*\**p*<.01. \*\*\**p*<.001.

the challenge task than their Hispanic peers. Not surprisingly, given their lower expressed distress, Hispanic children evidenced fewer coping strategies during the challenge task than their non-Hispanic peers. There were no significant ethnorracial differences in children's internalizing and externalizing problems or exposure to life stress. There were significant gender by race–ethnicity interactions for positive affect in play and negative affect during the challenge task. Females of all ethnorracial groups expressed more positive affect in play, however, this gender difference was most pronounced among White and Black children. Black and Hispanic females experienced more negative affect during the car task than males, but this pattern was reversed with higher levels of negative affect among males in the White and multiracial groups.

*Bivariate relations*

Table 2 depicts bivariate relations among study variables for the total sample. Child IQ was related to increased coping flexibility and fewer child behavior problems. Quality of fantasy in play was positively related to both negative and positive affect expression in play. All play

variables were related to lower internalizing problems at follow-up, however, positive affect in play was also related to increased externalizing behaviors. Coping flexibility was positively related to fantasy in play and negative, but not positive, affect expression in play. Coping flexibility was related to fewer internalizing behaviors and more externalizing behaviors.

*Mediation analyses*

Separate mediation analyses evaluated relations between children's play qualities at wave one (i.e., observed fantasy quality, positive affect frequency, negative affect frequency) and their behavioral adjustment one year later (i.e., examiner reports of internalizing and externalizing behavior) as explained by coping flexibility, which was assessed during the wave one assessment. All analyses controlled for child IQ, child gender, child race–ethnicity, family SES, and negative affect expressed during the coping challenge. Parameter estimates and 95% bootstrap confidence intervals (CI) across 5000 resamples are reported here. Mediation analyses revealed significant indirect effects of children's fantasy and negative (but not

**Table 2**  
Bivariate correlations among study variables.

|                                | 1    | 2      | 3     | 4      | 5      | 6     | 7      | 8    | 9     | 10   | 11 |
|--------------------------------|------|--------|-------|--------|--------|-------|--------|------|-------|------|----|
| 1. Child age (months)          | –    |        |       |        |        |       |        |      |       |      |    |
| 2. Child IQ                    | −.08 | –      |       |        |        |       |        |      |       |      |    |
| 3. Family SES                  | −.05 | .23**  | –     |        |        |       |        |      |       |      |    |
| 4. Fantasy quality in play     | .03  | .11    | .07   | –      |        |       |        |      |       |      |    |
| 5. Positive affect frequency   | −.00 | .05    | .11   | .49**  | –      |       |        |      |       |      |    |
| 6. Negative affect frequency   | .06  | .02    | .01   | .62**  | −.08   | –     |        |      |       |      |    |
| 7. Coping flexibility          | −.04 | .14*   | .12   | .25**  | .11    | .20** | –      |      |       |      |    |
| 8. Negative affect in car task | −.06 | .11    | .01   | .07    | −.01   | .05   | .47**  | –    |       |      |    |
| 9. Internalizing problems      | .02  | −.21** | −.16* | −.25** | −.19** | .26** | −.25** | .00  | –     |      |    |
| 10. Externalizing problems     | −.10 | −.11   | −.11  | .08    | .20**  | .02   | .15*   | .05  | .17** | –    |    |
| 11. Child life stress          | .02  | −.10   | −.07  | −.05   | .05    | −.08  | −.07   | −.01 | −.03  | −.09 | –  |

\**p*<.05. \*\**p*<.01.

**Table 3**

Mediation of child internalizing problems on fantasy through coping flexibility (model 1) as moderated by stress (model 2).

| Effect  | Estimate | Bootstrap SE | t     | p   | 95% CI bias corrected |       |
|---|----------|--------------|-------|-----|-----------------------|-------|
|   |          |              |       |     | LLCI                  | ULCI  |
| <b>Model 1: Simple mediation</b>                        |          |              |       |     |                       |       |
| <b>Covariates</b>                                       |          |              |       |     |                       |       |
| Child gender (male=0; female=1)                         | 1.36     | .65          | 2.10  | .04 | .08                   | 2.64  |
| Child age (months)                                      | .01      | .11          | .12   | .91 | -.21                  | .23   |
| Child race-ethnicity (non-Hispanic=0; Hispanic=1)       | .46      | .68          | .69   | .49 | -.87                  | 1.80  |
| Child IQ  | -.06     | .03          | -2.58 | .01 | -.11                  | -.02  |
| Family SES  | -.04     | .03          | -1.44 | .04 | -.09                  | .01   |
| Negative affect during car task                         | 8.96     | 3.99         | 2.10  | .03 | 1.09                  | 16.82 |
| c (fantasy quality⇒internalizing behavior [unmediated]) | -.81     | .30          | -2.66 | .01 | -1.41                 | -.21  |
| a (fantasy quality⇒coping flexibility)                  | .29      | .09          | 3.35  | .00 | .12                   | .46   |
| b (coping flexibility⇒internalizing behavior problems)  | -.76     | .22          | -3.44 | .00 | -1.20                 | -.32  |
| c' (fantasy quality⇒internalizing behavior [mediated])  | -.22     | .09          |       |     | -.45                  | -.08  |
| <b>Model 2: Moderated mediation</b>                     |          |              |       |     |                       |       |
| <b>Covariates</b>                                       |          |              |       |     |                       |       |
| Child gender (male=0; female=1)                         | 1.50     | .65          | 2.32  | .02 | .23                   | 2.77  |
| Child age (months)                                      | .02      | .11          | .16   | .87 | -.20                  | .24   |
| Child race-ethnicity (non-Hispanic=0; Hispanic=1)       | .43      | .67          | .65   | .52 | -.89                  | 1.76  |
| Child IQ  | -.07     | .02          | -2.62 | .01 | -.11                  | -.02  |
| Family SES  | -.04     | .03          | -1.51 | .13 | -.09                  | .01   |
| Negative affect during car task                         | 8.54     | .65          | 2.15  | .03 | .73                   | 16.35 |
| c (fantasy quality⇒internalizing behavior [unmediated]) | -.80     | .30          | -2.64 | .01 | -1.39                 | -.20  |
| a (fantasy quality⇒coping flexibility)                  | .29      | .09          | 3.35  | .00 | .12                   | .46   |
| b (coping flexibility⇒internalizing behavior problems)  | -.75     | .22          | -3.40 | .00 | -1.18                 | -.31  |
| c' (fantasy quality⇒internalizing behavior [mediated])  | -.22     | .09          |       |     | -.45                  | -.08  |
| Interaction (coping flexibility*stress)                 | -.14     | .07          | -1.99 | .05 | -.27                  | -.00  |
| High stress   | -.35     | .14          |       |     | -.71                  | -.13  |
| Average stress  | -.22     | .09          |       |     | -.44                  | -.09  |
| Low stress  | -.09     | .10          |       |     | -.33                  | .07   |

Note. SE=Standard Error. LLCI=Lower limit confidence interval. ULCI=Upper limit confidence interval.

positive) affect in play on later internalizing behaviors through coping flexibility (see Tables 3 and 4, model 1). Coping flexibility partially mediated the contribution of fantasy and negative affect in play to fewer internalizing behaviors.

#### Moderated mediation analyses

Hayes' (2013) PROCESS routine evaluated the conditional indirect effect of children's internalizing on play features as explained by coping

**Table 4**

Mediation of child internalizing problems on negative affect through coping flexibility (model 1) as moderated by stress (model 2).

| Effect  | Estimate | Bootstrap SE | t     | p   | 95% CI bias corrected |       |
|---|----------|--------------|-------|-----|-----------------------|-------|
|   |          |              |       |     | LLCI                  | ULCI  |
| <b>Model 1: Simple mediation</b>                        |          |              |       |     |                       |       |
| <b>Covariates</b>                                       |          |              |       |     |                       |       |
| Child gender (male=0; female=1)                         | .82      | .69          | 1.18  | .24 | -.55                  | 2.18  |
| Child age (months)                                      | .02      | .11          | .21   | .83 | -.20                  | .24   |
| Child race-ethnicity (non-Hispanic=0; Hispanic=1)       | .60      | .67          | .89   | .38 | -.73                  | 1.92  |
| Child IQ  | -.07     | .03          | -2.68 | .01 | -.12                  | -.02  |
| Family SES  | -.04     | .02          | -1.54 | .13 | -.10                  | .01   |
| Negative affect during car task                         | 9.02     | 3.98         | 2.26  | .02 | 1.17                  | 16.86 |
| c (negative affect⇒internalizing behavior [unmediated]) | -.13     | .05          | -2.80 | .01 | -.22                  | -.04  |
| a (negative affect⇒coping flexibility)                  | .04      | .01          | 3.36  | .00 | .02                   | .07   |
| b (coping flexibility⇒internalizing behavior problems)  | -.75     | .22          | -3.42 | .00 | -1.19                 | -.32  |
| c' (negative affect⇒internalizing behavior [mediated])  | -.03     | .01          |       |     | -.07                  | -.01  |
| <b>Model 2: Moderated mediation</b>                     |          |              |       |     |                       |       |
| <b>Covariates</b>                                       |          |              |       |     |                       |       |
| Child gender (male=0; female=1)                         | .94      | .69          | 1.37  | .17 | -.41                  | 2.29  |
| Child age (months)                                      | .03      | .11          | .26   | .79 | -.19                  | .25   |
| Child race-ethnicity (non-Hispanic=0; Hispanic=1)       | .56      | .67          | .85   | .39 | -.75                  | 1.88  |
| Child IQ  | -.07     | .02          | -2.72 | .01 | -.12                  | -.02  |
| Family SES  | -.04     | .03          | -1.61 | .11 | -.10                  | .01   |
| Negative affect during car task                         | 8.58     | 3.95         | 2.17  | .03 | .79                   | 16.36 |
| c (negative affect⇒internalizing behavior [unmediated]) | -.13     | .04          | -2.89 | .00 | -.22                  | -.04  |
| a (negative affect⇒coping flexibility)                  | .04      | .01          | 3.36  | .00 | .02                   | .07   |
| b (coping flexibility⇒internalizing behavior problems)  | -.73     | .22          | -3.36 | .00 | -1.17                 | -.30  |
| c' (negative affect⇒internalizing behavior [mediated])  | -.03     | .01          |       |     | -.07                  | -.01  |
| Interaction (coping flexibility*stress)                 | -.15     | .07          | -2.25 | .03 | -.28                  | -.02  |
| High stress   | -.05     | .02          |       |     | -.11                  | -.02  |
| Average stress  | -.03     | .01          |       |     | -.07                  | -.01  |
| Low stress  | -.01     | .01          |       |     | -.05                  | .01   |

Note. SE=Standard Error. LLCI=Lower limit confidence interval. ULCI=Upper limit confidence interval.

flexibility at different levels of children's stress exposure. As shown in Table 3, model 2, a significant interaction between child life stress and coping flexibility moderated the mediating effect of coping flexibility on the relation between play fantasy and fewer internalizing behaviors revealing significant mediation at average and high levels of life stress, but not at low levels of stress. As shown in Table 4, model 2, children's exposure to stressful life events also moderated the mediating effect of coping flexibility on the relation between negative affect in play and reduced internalizing such that there was significant mediation at average and high stress levels, but not at low levels of stress.

## Discussion

This investigation evaluated prospective relations among preschoolers' pretend play, coping flexibility, and behavior problems across varied degrees of child stress exposure. Preschoolers who expressed more fantasy and/or negative affect in their play engaged in more varied coping strategies (i.e., coping flexibility) during a contemporaneous delay of gratification challenge and fewer internalizing behaviors one year later. Coping flexibility also contributed to improved behavioral adjustment as indicated by lower examiner ratings of internalizing problems at follow-up.

Mediation results were consistent with our prediction that coping flexibility is one mechanism by which children's fantasy quality and frequency of negative affect expression in pretend play contribute to lower examiner ratings of internalizing problems. Moreover, moderated mediation analyses revealed that this indirect effect was more pronounced among children with relatively high rates of stress exposure during the year preceding the play evaluation. Contrary to our expectations, however, pretend play features were not related to improved behavioral adjustment with respect to externalizing problems and, in fact, positive affect expression in play was associated with more externalizing problems at the bivariate level.

To our knowledge, this investigation is the first to evaluate mediating relations among pretend play, coping flexibility, and behavioral adjustment using a prospective design, an ethnographically diverse sample, multiple methods and informants, and in consideration of children's broader stress exposure. Overall, our findings are consistent with previous studies showing that the ability to engage in imaginative and expressive pretend play is associated with improved adjustment, including coping flexibility and behavior (see Moore & Russ, 2008; Pearson et al., 2008 for review). At the same time, this investigation extends extant research by identifying coping flexibility as a contextually sensitive explanatory mechanism for understanding these relations.

The current analyses controlled for important covariates, such as child gender, child age, race–ethnicity, IQ, socioeconomic status, and negative affect during the delay of gratification task. However, group differences in study variables as a function of child gender, race–ethnicity, and their interaction highlight the need for ongoing efforts to clarify specific pathways and processes that may be more or less salient across sociodemographic contexts. First, females expressed more positive affect and males expressed more negative affect during the play task. Although these findings are consistent with widely replicated evidence for gender differences in play content (Jones & Glenn, 1991; Libby & Aries, 1989; Muthukrishna & Sokoya, 2008), further research is needed to evaluate if and how the meaning of affective expression and valence may vary by child gender. Second, differences in study variables as a function of race–ethnicity may point to possible moderating effects on these relations. Black children engaged in higher quality of fantasy in their play and expressed less negative affect during the delay challenge than Hispanic children. Not surprisingly, given their lower levels of negative affect, Hispanic children exhibited less coping flexibility than the other children in the study. Further research is needed to explore factors beyond children's stress exposure that may moderate mediating relations among pretend play features, coping flexibility, and behavioral adjustment.

In addition to studies of sociodemographic influences on the obtained relations, future research is needed to elucidate processes that may account for the obtained relations between pretend play and coping flexibility. For example, although not examined directly in this investigation, divergent thinking may explain the observed relations between pretend play features and coping flexibility. This interpretation is supported by research showing that pretend play is related to divergent thinking (Russ & Grossman-McKee, 1990), divergent thinking is related to coping (Carson et al., 1994; Russ, 1998), and pretend play is related to coping (Christiano & Russ, 1996). By allowing children to experiment with difficult problems and feelings in a safe milieu, imaginative and expressive pretend play may engender cognitive flexibility, which, in turn, may contribute to coping flexibility. People who are able to engage in different coping strategies may have better outcomes because they are more likely to find the coping strategy that best suits a given stressor (Biao & Yang, 2006; Kato, 2012; Watanabe et al., 2002). These findings suggest that it is the coping process (i.e., flexible strategy engagement) rather than any one coping strategy that is most salient for understanding children's behavioral adjustment.

Additional research is also needed to clarify the differential meaning of negative and positive affect in pretend play for children's development. Negative affect expression in play was more strongly related to behavioral adjustment outcomes than positive affect in play. Previous empirical studies show that expressing and managing positive and negative affect in play is related to a variety of positive outcomes (Moore & Russ, 2008; Russ & Niec, 2011; Singer, 1998). However, these studies also suggest that the ability to manage negative affect is particularly important for reducing stress and anxiety. Gaensbauer and Siegel (1995) found that children who expressed affect in play, especially negative affect, were better able to work through their trauma in play-based therapy. Consistent with prior research, these findings point to the special significance of negative affect expression in play for understanding children's socioemotional adjustment, particularly with respect to their internalizing symptomatology. However, the bivariate relation between positive affect expression in pretend play and examiner ratings of child externalizing problems warrants further investigation and explanation.

Although pretend play features and the ability to engage in different coping strategies have been shown to relate to positive outcomes (Compas & Boyer, 2001; Pearson et al., 2008), the significant relation between play and adjustment through coping was only evident for internalizing behaviors in the current study. Moreover, at the bivariate level, positive affect expression in play was associated with increased externalizing behaviors, though this relation did not reach significance in regression analyses. Although the current findings suggest that solitary pretend play and coping flexibility are salient for reducing internalizing behaviors, it may be that other kinds of play, such as competitive or social play, are more strongly related to externalizing behaviors (cf. Coolahan, Fantuzzo, Mendez, & McDermott, 2000; Fantuzzo, Sekino, & Cohen, 2004). It may also be that, while managing negative affect in play is important for negotiating the internal conflicts that contribute to internalizing behaviors, achieving a balance between both positive and negative affect is important for avoiding externalizing behaviors. Disproportionately high levels of positive affect in play may be an indication that affect (and by extension, behavior) is not appropriately balanced and/or regulated. Although affect balance has not been fully explored in relation to child behavior problems, it has been identified as an important predictor of overall well-being in adults (Moriwaki, 1974), and represents an interesting area for future study.

The current study also evaluated interactive relation between stress and coping. Our findings indicate that the contribution of play features through coping flexibility to internalizing behavior is moderated by levels of experienced stress, with particular importance for children encountering relatively high levels of stress. Previous research suggests that coping strategies may vary in effectiveness across differentially stressful contexts (Band & Weisz, 1988). Although



individual coping strategies may prove less effective in conditions of stress, a flexible coping process may be especially important in relatively stressful contexts that are apt to feature shifting demand characteristics.

### Strengths and limitations

The current study extends the literature on pretend play, coping flexibility, and internalizing and externalizing problems by testing an explanatory model of how preschoolers' pretend play contributes to prospective adjustment through contemporaneous coping flexibility as moderated by stress. We employed a large and diverse sample of preschoolers, multiple methods, and multiple informants, including maternal reports of child stress, behavioral observations of pretend play and coping flexibility, and examiner ratings of children's behavioral adjustment at follow-up. Despite these strengths, the limitations of this study both qualify our interpretation of the findings and highlight additional directions for future research.

First, the use of multiple informants limited the potential confound of shared method variance, but also introduced the possibility of bias in this study. For example, caregiver reports of child stress may have been biased by the caregiver's own perception of whether or not each event had a negative, neutral, or positive effect on the child. Previous research on the interaction between coping and stressful events has examined either children's self-reports or unequivocal risks, such as maltreatment, child illness, or parent illness (Compas & Boyer, 2001). Similarly, although the use of examiner reports to assess internalizing and externalizing child behavior problems mitigated overlap across measures, informant reports of internalizing problems may be less valid than self-reports (Achenbach, McConaughy, & Howell, 1987). However, recent evidence suggests that these discrepancies may be less pronounced at younger ages (van der Ende, Verhulst, & Tiemeier, 2012).

Second, assessments occurred in a controlled laboratory setting using concurrent measures of play and coping. The laboratory-based design of this study extends prior research on play and coping, which has been conducted in largely clinical settings (Christiano & Russ, 1996; Gaensbauer & Siegel, 1995; Russ & Niec, 2011), but may also limit the generalizability of our findings. Moreover, because we collected observational measures of play and coping during the same assessment, the possibility that observed relations reflect the influence of coping on play remains. However, this hypothesis is not supported by developmental theory, or extant empirical research (Russ et al., 1999).

Finally, and perhaps most importantly, beyond the preliminary evidence for validity and reliability in our ancillary analyses across Hispanic and non-Hispanic children, the current measures of play and coping have not been validated across racial-ethnic groups. There is a need for future studies to examine, and hopefully establish, the validity of the APS-P and the Delay of Gratification Car Task in diverse populations using confirmatory factor analysis to evaluate the structural congruence of these measures across racial-ethnic groups. Even our preliminary support for the validity of these measures among Hispanic children was further limited by our reliance on children with at least basic comprehension of English due to limited interpreter resources. As such, our findings may not generalize to Hispanic preschoolers who do not speak English. That being said, it is important to note that our sample of Hispanic caregivers was representative of the broader Hispanic population in the US (e.g., 64.6% reported that Spanish was a dominant language in their home and 35.9% were foreign born; U.S. Census Bureau, 2011b).

### Implications for clinical practice and policy

The current findings suggest that coping flexibility partially explains how children's symbolic play facilitates improved socioemotional adjustment, particularly among children living in stressful contexts. In so

doing, these findings support the use of play in psychotherapy, particularly among children who encounter relatively high rates of stress. In a study of play among hospitalized children, Rae, Worchel, Upchurch, Sanner, and Daniel (1989) found that children who were assigned to a therapeutic play condition that encouraged imaginative play evidenced less anxiety than children who were assigned to an alternate play intervention that did not encourage imaginative play (i.e., children were encouraged to play games). Although play-based intervention and education appear to support positive child development, additional research is needed to understand how and why play engenders coping flexibility in particular. Efforts to clarify what children are learning or practicing in play that serves them so well in future challenging situations will further inform the design and implementation of effective interventions.

Beyond the clinical domain, play and creative expression have taken on increasing salience in educational settings, despite or perhaps in response to, the current press for memorization-based education and formalized testing evaluations (Stout, 2011). These concerns have been magnified by recent evidence that creativity is declining among young children (Bronson & Merryman, 2010). Researchers, educators, and parents attribute this decline, at least in part, to decreased opportunities for play and creative expression in schools (D. G. Singer, Singer, D'Agostino, & DeLong, 2009). The Alliance for Childhood, which promotes policies and practices to foster positive child development in educational settings, addressed the decline of play in kindergarten and called for the return of playtime to the school day (Almon & Miller, 2011). In reviewing a host of studies on play in school settings, the Alliance found consistent evidence for the decline of play, especially imaginative play, in kindergarten education (Almon & Miller, 2011). These concerns have fueled a movement to protect and encourage play in school (e.g., International Play Association, KaBOOM!, The Association for the Study of Play), one that is well-supported by nearly a century of research showing the benefits of play for children's learning (Kaufman, Singer, & Singer, 2012). To that end, the current study contributes to a growing body of research on play and adjustment, and supports rising social movements that endeavor to foster both.

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