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Parent-Child Automaticity: Links to Child Coping and Behavior and Engagement in Parent Training

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Abstract

This research investigated parent-child automaticity (i.e., automatic ways of thinking, feeling, and interacting) as it relates to child coping and behavior and caregiver engagement in a preventive parenting program, as well as program-related changes in automaticity. 610 caregivers (93% mothers) of children ages 3–6 years (52% boys; 49% African American) enrolled in the Parenting our Children to Excellence (PACE) program, and completed pre- and post- intervention assessments ($N = 544$ at post-intervention). Daycare providers also provided reports of school coping and behavior. Parent-child automaticity predicted parent and teacher- reported child social coping and aggressive behavior. Contrary to hypotheses, parents reporting elevated parent-child automaticity attended significantly more PACE sessions. A significant time x attendance interaction indicated decreased automaticity following the PACE program. Parent-child automaticity during the preschool years is an important correlate of child behavior and coping, and may be a motivating factor for parents to attend parent training programs.

Keywords

automaticity; parent training; child coping; aggressive behavior

Introduction

It is widely accepted that a large amount of higher order social-cognitive processes unfold automatically, efficiently, and without the mindful awareness of the individual; a construct referred to as *automaticity* (Bargh, 1994; Bargh et al., 2012). There is specific evidence for the presence of automaticity within families and interpersonal dyads, such that individuals in relationships acquire automatic and efficient ways of interacting with one another over time (Milner, 1993; Patterson, Reid, & Dishion, 1992). At the interpersonal level, automaticity has been characterized as the interrelated ways of thinking, feeling, and interacting that are relationship-specific and reflect the history of the relationship (Dumas, 2005). When harmony in dyadic interactions is achieved, family relationships benefit from the entrenchment of such patterns, and pleasant and mutually-beneficial interactions become more stable and effortless over time (Lunkenheimer et al., 2011). Yet, when a dyad repetitively engages in disharmonious or conflictual interactions, these automatic patterns similarly become entrenched, effortless, and resistant to change. These processes are perhaps best understood in the context of coercion theory applied to adolescent-parent conflict in the development of adolescent antisocial behavior (Patterson et al., 1992).

At early developmental stages, microsocial processes and transactions between caregivers and children have important implications for the development of self-regulatory capacities within the child (i.e., co-regulation of emotions; Olson & Lunkenheimer, 2009). To navigate and cope with developmental challenges, children must acquire a broad range of skills to regulate behavior and emotion during infancy and early childhood, and these self-regulation skills have long-term implications for psychological and interpersonal functioning (Calkins & Hill, 2007; Spinrad et al., 2007). For toddlers and young children, cognitive/language development, independent mobility, and a developing identity separate from caregivers necessitate increasingly independent use of self-regulation skills in a range of contexts (e.g., at home, with peers). Caregiver awareness, responsiveness and modeling continue as primary influences on development of self-regulation. Yet, at the same time, as relationship histories strengthen, interaction patterns between caregivers and young children become more internalized and automatic for both the caregiver and the child.

Behaviorally-oriented parent training programs have been shown to be effective in improving child behavior and coping, improving parenting skills, and decreasing parenting stress, in general community samples, high-risk community samples, and clinical samples (e.g., Barkley, 1997; Webster-Stratton 1998; Kaminski et al., 2008). Meta-analytic investigations have substantiated these results and indicated that group-format behavioral parent training programs are also cost-effective in the treatment and prevention of behavior problems in children (Furlong et al., 2012; Kaminski et al., 2008). Further, there is evidence that such programming can have a long-term, sustained impact on parenting (e.g., four years later; Heinrichs, Kliem, & Hahlweg, 2014). The Parenting our Children to Excellence (PACE) program is one such program with a focus on prevention of childhood behavior problems in at-risk families (Dumas, Prinz, Smith, & Laughlin, 1999). Although a full randomized controlled trial has not been conducted to date, there is evidence that participation in the PACE program is associated with pre- to post-intervention improvements in child coping and behavior, as reported by parents and teachers, as well as

decreases in parenting stress and child abuse potential for participating caregivers (Begle & Dumas, 2011; Begle, Lopez, Cappa, de Arellano, & Dumas, 2012; Dumas, Begle, French, & Pearl, 2010). These positive benefits are well known correlates of harmonious parent-child interactions (Eisenberg, Fabes, & Spinrad, 2006; Moreland & Dumas, 2007), yet, less is known specifically about the role of negative automatic transaction patterns in behavioral parent training, or the malleability of such patterns in response to parent-only interventions. Further, in spite of the demonstrated efficacy of these interventions, research indicates that drop-out rates vary widely across studies (e.g., up to 50%; Prinz & Miller, 1994), and these programs may not reach the most at-risk parents. Specifically, meta-analytic findings suggest that drop-out is affected by factors such as family income, single parent status, racial minority status, and young parental age (Reyno & McGrath, 2006).

Automaticity was originally hypothesized as a barrier to engagement and effectiveness of such interventions (Dumas, 1997), as processes outside of conscious awareness may not be well-targeted by education-based behavioral parent training. Also, there is evidence that parental attributions of child behavior problems play a role in engagement in parenting programs-- when parents conceptualize child behavior problems as unrelated to parenting practices, they are less likely to attend and engage in parent training programs (Hoza et al., 2000). It remains unclear whether parents perceive automatic, negative, escalating interactions with their toddlers as child-centered, parent-centered, or relationship-centered, which likely has implications for the engagement of parents reporting high automaticity in behavioral parenting programs. The purpose of the present research was to investigate: (1) the relation between parent-child automaticity and child coping and behavior across home and school contexts, (2) automaticity in relation to attendance and participation in a preventive parenting program, (3) the malleability of automaticity in response to such programming, and (4) the relation between change in automaticity and child functioning.

Method

Participants

Participants were caregivers enrolled in the Parenting our Children to Excellence (PACE) preventive parenting program. Six hundred and ten caregivers enrolled in the program originally and completed pre-intervention measures, and 483 attended at least one session. Caregivers were primarily mothers (93%); 49% self-identified their ethnicity as African American, 46% as European American, and 5% as other (including Asian, Hispanic, Biracial, and Native American). Each parent represented a distinct family (i.e., no sibling data included) and reported on one target child between the ages of 3 and 6 at the time of recruitment (52% boys, mean age 4.44 for boys and 4.35 for girls). Caregivers ranged in age from 17-62, with a mean age of 31.0 years ($SD = 7.1$). Fifty-three percent were single parents, and 47% were married or lived with an adult partner. Mean yearly household income was \$26,572, which was well below the median household income in Indianapolis (\$40,421) at the time of study. Statistics provided by daycare center directors indicated that approximately 1 in 2 families qualified for subsidized childcare ($M = 0.51$, $SD = 0.35$).

Procedure

All procedures were approved by and carried out in accordance with the Institutional Review Boards of Purdue University and the Centers for Disease Control and Prevention. Fifty daycare centers were recruited through Child Care Answers, a childcare provider training and licensing agency. To receive the PACE program, centers had to serve an ethnically diverse population and a minimum of 35 families with children between the ages of 3 and 6 at the time of recruitment. Recruitment strategies included posting advertisements in multiple locations throughout each center, sending registration forms to all eligible parents, and staffing a registration table at the daycare center twice a week for four weeks. Advertisements included overview of topics covered in the PACE program, as well as information about the program logistics (free of cost, free meal and childcare provided each session, and \$3 cash to cover transportation costs each session). Parents were given opportunities to ask questions prior to deciding to participate and completing informed consent. Parents enrolled by completing an enrollment form or attending the first session.

Parents completed a Parent Survey at baseline (prior to first session), post (following eighth session), and one year follow-up. The Parent Survey is a structured interview that was individually administered by trained staff at the parent's home or at the daycare center, based on parental preference. The Parent Survey included measures in the present study (see below), as well as other assessments of parenting behaviors, parent characteristics, and child behavior. Parents provided informed consent before each interview and received \$35 in cash at completion of pre and post surveys and \$50 at completion of one year follow-up. Teacher Surveys were administered to teachers at the daycare center by trained staff. Steps were taken to track data collection for all parents who enrolled in the program, whether they attended any session or not. This included (in this order): up to five attempts at phone contact with a scripted message, phone call to alternate contact persons (if provided at baseline), letter mailed to most recent address on file, letter delivered to daycare center addressed to the family, and an in-person visit to last known address to attempt to schedule assessment session. Primary analyses of the PACE data indicated no significant differences between daycare sites on study outcomes, and for that reason, data were compiled across the recruitment sites (Begle & Dumas, 2011).

PACE Program Fidelity

Each PACE parenting group was conducted by a trained leader and assistant. Sessions covered eight topics: (1) bringing out the best in our children, (2) setting clear limits for our children, (3) helping our children behave well at home and beyond, (4) making sure our children get enough sleep, (5) encouraging our children's early thinking skills, (6) developing our children's self-esteem, (7) helping our children do well at school, and (8) anticipating challenges and seeking support. Training, supervision, and fidelity assessments focused on program content and process (for detailed description, see Dumas, Lynch, Laughlin, Smith, & Prinz, 2001). In the course of training, group leader and assistant competence were evaluated using formal quizzes and live observations. In addition, throughout the study, group leaders received weekly supervision that included feedback from weekly fidelity assessments. Group leader fidelity was assessed with procedures described in Dumas et al (2001). Leaders wore a lapel microphone attached to a portable

recorder to audiotape all sessions. Trained coders assessed fidelity to program content and process; results from these assessments were sent to group leaders' supervisors on a weekly basis for ongoing feedback and estimates of adherence. Following any week of diminished fidelity (content or process), group leaders were provided additional support and monitoring. On average, group leaders covered 79% of all content items (range: 20–100%; inter-rater agreement, $\kappa = 0.79$) and attained an average process score of 91% (range: 63–100%; inter-rater agreement, $\kappa = 0.88$).

Measures

Sociodemographic characteristics—Sociodemographic information was assessed at pre-intervention and included parent gender, age, ethnicity, marital status, education, family income, and child gender and age.

Attendance and participation—Attendance was assessed as (0) did not attend or (1) did attend at each session. Overall attendance scores therefore ranged from 0 to 8. Program completion was considered attendance at five or more sessions, based upon a median split in previous studies examining PACE outcomes (Begle & Dumas, 2011; Dumas, Nissley-Tsiopinis, & Moreland, 2007). Quality of participation was assessed via independent ratings by the group leader and assistant leader following each session. Group leader and assistant leader rated each parent by answering the question, "Overall, how well did the parent participate during the session?" Ratings ranged from "(1) Did not participate or obstructed group functioning and activities," to "(5) Participated enthusiastically; was obviously interested and attentive to other group participants." Each anchor point had specific definitions. Leaders and assistants were trained to use the measure through examples and observations of PACE sessions. As their answers were internally consistent (Cronbach's $\alpha = 0.92$ for leaders and 0.94 for assistants) and highly correlated ($r = 0.71, p < 0.001$), they were aggregated and averaged over all attended sessions to yield a single quality of participation score per parent.

Parent-Child Automaticity—Automaticity was assessed using the Automaticity Scale (developed for Begle & Dumas, 2011). This scale was first used in the original PACE study to assess automatic parent-child communication patterns. The original scale contained 20 items across parental perceptions of their own mood stability and regulation when interacting with their child, frequency and speed of conflict escalation in discussion with their child, and their perception of their child's regulatory ability during discussion or conflict. An exploratory principal components factor analysis was conducted and results are presented in Table 1. Initial eigenvalues indicated that the first factor explained 26% of the variance (eigenvalue 5.31), and subsequent factors "levelled off" and explained 9%, 6%, 5% and 5%, with eigenvalues less than 2. The pattern of loadings and cross loadings observed indicated one unitary scale of 13 items, although the second factor that emerged was closely considered. Specifically, due to item content, we were expecting one factor to reflect primarily parent-initiated coercive behavior, and a second factor to reflect primarily perceived child-initiated coercive behavior. Interestingly, this was not the case. The 13 items that loaded on this factor (factor loadings $> .50$) were retained. Although the second factor explained 9% of the variance, items that loaded highly on this factor were items that also

loaded highly on the initial factor (i.e., did not differentially load onto a second factor). Consistent with a unitary conceptualization, the items that were not retained reflected more individual contributions to automatic transaction patterns and awareness/monitoring of the child (e.g., “I always know exactly how my child is feeling,” and “I find it difficult to keep track of what my child is doing”). Internal consistency of the 13 item measure was high ($\alpha = .93$).

Child coping competence—The Coping Competence Scale (CCS-R; Moreland & Dumas, 2007) was used as a measure of child coping competence across social, achievement, and affective coping domains. This three-factor model of the CCS-R has been validated through confirmatory factor analysis (Moreland & Dumas, 2007). Parent reports at baseline were included in the present study. The CCS-R consists of 26 items rating competence on a 5- point Likert scale, from (1) Very good to (5) Very poor. As in previous reports (Moreland & Dumas, 2007), internal consistency was high in the present study (Cronbach’s $\alpha = 0.93$ at pre-intervention in the current study).

Child behavior—Child behavior across the domains of social competence, aggressive behavior, and anxiety/withdrawal was assessed with the Social Competence and Behavior Evaluation, Preschool Edition, Short Form (SCBE; LaFreniere & Dumas, 1996). The SCBE is a measure of behavioral adjustment in the preschool years, validated for ages 2 ½ to 6 years across multiple samples in the U.S. and Canada. The SCBE yields three summary scores reflecting social competence, aggressive behavior, and internalizing symptoms, which have been shown to have high interrater and test-retest reliability, as well as internal consistency (LaFreniere & Dumas, 1996). Parents and teachers both completed the measure at pre-intervention. Internal consistency in our sample ranged from Cronbach’s $\alpha = .74$ to .85 across subscales and reporters at baseline.

Parenting stress—Parents rated their own stress level at pre-intervention with the widely-used Parenting Stress Index Short Form (PSI-SF; Abidin, 1997). The PSI-SF is a 36-item scale that asks respondents to rate items on a 5-point Likert scale from (1) Strongly agree to (5) Strongly disagree. For the present study, a total score (mean across items) was used and demonstrated internal consistency (Cronbach’s $\alpha = .91$ at pre-intervention).

Parental warmth/respect—The warmth/respect subscale of the Parental Attitudes Towards Childrearing scale (PACR; Easterbrooks & Goldberg, 1984, 1990) is comprised of 10 items that measure parents’ attitudes about warmth and respect in the parent-child relationship. This measure is a subscale of the longer, widely-used PACR, which has shown internal consistency and test-retest reliability, as well as an association with observational measures of parent-child interactions (Easterbrooks & Goldberg, 1984; McGuire & Earls, 1993). Participants rated their agreement with each statement on a scale of (1) Strongly disagree to (6) Strongly agree. In the present study, this subscale demonstrated moderate internal consistency (Cronbach’s $\alpha = .63$).

Results

Automaticity and Child Coping and Behavior at Baseline

To better characterize the link between automaticity and child functioning (coping and behavior), this study examined the relation between automaticity and child coping and behavior across home and school contexts at pre- intervention. A series of hierarchical multiple regression analyses were conducted to investigate the specific relation between automaticity and child functioning, after controlling for sociodemographic characteristics and other parenting factors. Separate regression analyses were conducted on parent and teacher reports for each domain of child coping (social, achievement, and affective) and each domain of child behavior (social competence, aggressive behavior, and anxiety/withdrawal). In Block 1, sociodemographic characteristics were entered into the equation, including parent sex, ethnicity (two dummy coded variables to represent African American, European American, and Other), child age, child sex, and family income. In Block 2, parenting characteristics were entered, including parental stress and parental warmth. Automaticity was entered in Block 3.

Child coping competence—Results for child coping competence are presented in Table 2. For parent report, overall models were significant across the three coping domains. For parent reported child social competence, child gender, child age, parenting stress, and parenting warmth emerged as significant predictors, and after accounting for variance associated with these predictors, higher automaticity was uniquely associated with lower social competence and added to the prediction of concurrent child social competence ($R^2 = .07$). For parent reported child affective and achievement competence, demographic and general parenting emerged as significant predictors of concurrent child coping (See Table 2), yet, automaticity did not significantly add to the models predicting affective and achievement competence.

Results were similar for teacher report. After controlling for sociodemographic variables, neither parenting variables nor automaticity added significantly to the prediction of concurrent affective or achievement competence. For teacher reported child social competence, after accounting for variance associated with sociodemographic variables, higher parent-child automaticity was uniquely associated with lower social competence and added to the prediction of concurrent child social competence ($R^2 = .013$).

Child behavior—Results for child social competence, aggressive behavior, and anxiety/withdrawal are presented in Table 3. Sociodemographic variables, as well as parental stress and warmth, emerged as significant predictors of social competence, yet, automaticity did not add significantly to the model. For anxiety/withdrawal, only parental stress emerged as a significant predictor. For parent reported aggressive behavior, after accounting for variance associated with sociodemographics and parenting stress, higher automaticity was related to higher concurrent parent-reported aggressive behavior and added uniquely to the model ($R^2 = .06$).

Results were similar for teacher reported behavior across domains. Automaticity was not uniquely associated with concurrent teacher reported social competence or anxiety/

withdrawal. Yet, after accounting for variance associated with sociodemographics variables, automaticity added significantly to the model and higher parent-child automaticity was uniquely predictive of teacher-reported aggressive behavior ($R^2 = .012$).

Automaticity and Engagement in PACE Program

The second purpose of the present study was to investigate automaticity in relation to attendance and participation in the PACE program. As mentioned, treatment completers were considered those who attended more than half of the treatment sessions (five or more sessions). Treatment completers were compared to those who did not attend any sessions and those who completed four or fewer sessions in a three-way ANOVA. Results indicated significant differences in automaticity between groups; $F(2,626) = 5.12, p < .01$. Post hoc Tukey HSD test indicated that the source of significant difference was in the comparison of those who did not attend any sessions to those who completed treatment. Completers reported significantly higher automaticity at baseline ($M = 1.88, SD = .48$) as compared to those who did not attend ($M = 1.73, SD = .45, p < .01$). No other group differences emerged, and those who attended but did not complete reported mean automaticity of 1.81 ($SD = .48$). No significant correlation was found between participation ratings and automaticity ($r = -.02, n.s.$), so no additional analyses were conducted.

Impact of Intervention on Automaticity

The third purpose of the present study was to investigate change in automaticity related to attendance in the PACE program. To investigate change in automaticity from pre- to post-intervention, a repeated measures ANOVA was conducted, in which those who completed five or more sessions were compared to those who attended fewer sessions. Sociodemographic characteristics were also entered as covariates. Significant within-subjects effects for time (pre- to post-intervention) emerged, indicating change in automaticity over time across the sample, $F(1, 510) = 3.89, p < .05$. A significant between-subjects effect for child gender also emerged, $F(1, 510) = 5.41, p < .05$, with higher automaticity reported for boys. A significant interaction between time (pre- and post-intervention) and attendance status emerged, $F(1, 510) = 4.57, p < .05$. Results indicated that those who attended the program, in addition to reporting higher levels of baseline automaticity, also reported decreased automaticity at post-intervention. Those attending fewer than 5 sessions did not report decreases in automaticity, although as noted, they also reported lower automaticity at baseline (See Figure 1). Finally, a significant interaction between automaticity and child sex emerged, $F(1, 510) = 6.75; p < .05$. Results indicated that the mothers of boys reported significant decreases in automaticity from pre- to post-intervention, whereas the mothers of girls, overall, did not report significant decreases (See Figure 2).

Discussion

This study aimed to better characterize the link between automaticity in parent-child interactions and child coping and behavior at home and school, as well as the relation between automaticity and attendance in a preventive parenting programming. First, factor analytic results indicated that the measure of negative parent-child automaticity was

capturing a unitary construct, as opposed to assessing distinct parent versus child behaviors. Next, results indicated that negative parent-child automaticity, after accounting for other sociodemographic and parenting factors, was not uniformly associated with child coping and behavior, but was specifically associated with social coping competence and aggressive behavior. This finding was replicated in both parent and teacher reports of coping and behavior. Regarding aggressive behavior, these findings may indicate risk for automatic negative and escalating parent-child interactions at later development stages, primarily adolescence, which have been identified as significant risk factors for adolescent antisocial behavior (Patterson et al., 1992). Automatic transaction patterns at stages of development later than toddlerhood, such as in parent-adolescent dyads, are conceptualized as relationship specific and polarizing primarily within the dyad. Interestingly, and consistent with the transition from parent-child co-regulation to increasing child self-regulation during the toddler years (Olson & Lunkenheimer, 2009), automatic transaction patterns between parents and children not only impacted the level of child difficulties reported by the parent, but also at preschool with teachers and peers.

Behavioral parenting training programs represent a validated and evidence-based approach to address disruptive behavior and theoretically increase harmony in the parent-child relationship (Barkley, 1997; Webster-Stratton 1998; Begle & Dumas, 2011). Therefore, it is important to better understand how parent-child automaticity relates to such programming. While these approaches are well-validated, difficulties with attendance and engagement are problematic, and research has indicated that in addition to social and systemic barriers to engagement, there are social-cognitive barriers to parental engagement as well (Mah & Johnston, 2008). Although automaticity was originally hypothesized as a barrier to behavioral change, the present study found that the highest reported levels of parent-child automaticity were associated with increased attendance in the PACE program. In other words, parents who perceived themselves as struggling most with automatic, negative, and escalating interactions attended at higher rates than counterparts with lower automaticity. Specific social-cognitive barriers that have been identified include parental attributions of the etiology of disruptive behavior, and there is evidence that when parents believe the cause of the behavior lies completely within the child, parents are less likely to accept parenting interventions as a valid means of change (Mah & Johnston, 2008). The findings of the present study are promising, in that focusing on automaticity in the parent-child relationship may be more congruent with a child-centered attribution than a focus solely on parenting skills or deficits. It is possible that highlighting automaticity as a target of intervention in educational materials could enhance parent interest and motivation for attendance. Similarly, screening for automaticity at time of enrollment could be investigated as a possible strategy for improving the efficacy of PACE. Such screening strategies could be coupled with brief, personalized feedback to provide to potential participants in building interest and/or motivation to attend the PACE program or similar parent training programs. It is also important to note that once in the session, parents with high rates of automaticity participated at the same level overall as other parents.

Also promising was evidence that parent-child automaticity may be positively impacted by behavioral parent training in a group format. Because the present study did not include an RCT, future research is needed to investigate whether the change in automaticity from pre-

to post-assessment can be specifically attributed to the PACE programming. Automaticity, by definition, is mindless and resistant to change, making it a questionable target for an intervention at the preventive level. Additionally, as the target of parent-child interactions involves the child as well as the parent, it was unclear whether a parent-only intervention could effectively target these interaction patterns. Interestingly, results indicated that when automaticity was high at baseline, those who completed the program (i.e., attended five or more sessions) experienced significant decreases in automaticity at the end of eight weeks. This shows that automaticity may indeed be altered early in the development of the parent-child relationship, which may positively impact subsequent parent-child interactions. It will be important for future research to investigate potential moderators of this change; for example, it could be hypothesized that other established benefits, such as decreased parental stress, allow parents the time and energy necessary to parent in a more mindful manner. In addition, there was evidence of a time x child sex interaction, which indicated that it was the parents of boys who reported significant decreases in automaticity. In light of a large body of evidence, as well as results of the present study indicating that disruptive behavior problems are more common in young boys, this finding again highlights that the parent intervention was most effective when parents presenting for the program reported high levels of difficulty with their children. As future research continues to investigate the role of automatic transaction patterns in child coping and behavior as well as engagement in parent training programs, the role of interventions aimed at improving mindfulness should be examined. Specifically, acceptance and commitment techniques, mindfulness training and meta-cognition training could all be considered candidate techniques to decrease negative parent-child automaticity and deserve future attention.

A number of limitations should be considered when interpreting the results of the present research. First, the present study represents only a first step in validating this measure of automaticity, and although results indicated internal consistency and predictive validity at home and school, the measure has not been used widely. Factor analytic results from this study should be replicated on novel samples. Of interest, a number of the items that did not load onto the unitary factor identified through factor analysis were those that were reverse coded. Although this could be a sign of reporter bias, it also suggests that a more comprehensive assessment of parent-child automaticity would take into account positive parent-child automaticity. As these items did not load onto a secondary factor together, it is likely that additional construct and item development is needed to better reflect positive parent-child automaticity (as opposed to the absence of negative parent-child automaticity). Additionally, assessment of automaticity relied on parent report; and therefore is best conceptualized as parent perceptions of automaticity.

Future research should include observational methods as well to further validate this measure. Similarly, although the present study established a significant relation between automaticity and child outcomes, the processes linking broadly defined parenting behavior, automaticity, and child outcomes are likely complex. For example, future research would do well to investigate automaticity as a mediating factor in the link between broader parenting (e.g., consistency, responsiveness, parenting information) and child outcomes. Also, the general assessment of parenting warmth used in the present study, although validated and used widely in the literature, had questionable internal consistency. This also provides a

rationale for further investigating automaticity as it relates to a broader range of validated assessments of parenting behavior and characteristics. And finally, while change observed in automaticity immediately post-treatment is promising, additional research is needed to examine this malleability at longer intervals.

Overall, the results of the present study support parent-child automaticity as not only a correlate of child functioning at home, but also for how children function in the preschool environment with teachers and peers. Additionally, the results provide preliminary evidence that a time-limited, parent-only preventive program can decrease parent-child automaticity around negative interactions. It will be important for future research to investigate whether such programming increases automatic, efficient, and harmonious parent-child interaction patterns.

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Figure 1.
Interaction between attendance and automaticity at baseline and post-intervention

Figure 2.
Interaction between child sex and automaticity at baseline and post-intervention

Table 1

Principal Components Factor Analysis of Automaticity Scale (20 items)

Item	Factor 1 Eigenvalue: 5.31	Factor 2 Eigenvalue: 1.90
<i>I find it difficult to keep track of what my child is doing</i>	.36	-.04
When my child gets angry, he/she just blows up	.59	-.54
My child and I argue a lot	.57	-.27
<i>When my child acts up, I am slow to lose my temper</i>	-.24	-.25
My child gets upset easily	.52	-.47
<i>When my child is upset, he/she is able to control his/her temper</i>	-.41	.52
It takes me no time to lose my temper with my child	.65	.31
My mood often changes for no reason	.54	.29
<i>Before my child loses his/her temper, there are warning signs that it is about to happen</i>	.06	.12
When my child acts up, I just blow up	.65	.33
My child can be happy one moment and angry the next, often for no reason	.51	-.32
<i>When my child and I disagree, we discuss it calmly</i>	-.40	.26
When I ask my child to do something he/she doesn't want to do, he/she just loses it immediately	.58	-.38
When I am upset, I find it difficult to talk to my child calmly	.52	.15
I get upset easily	.72	.35
When I get mad with my child, I often say things that I will regret later	.55	.35
When my child gets angry, I get angry	.63	.23
Things get out of hand really quickly when my child and I are upset	.71	.14
<i>It takes me time to lose my temper even when I am upset</i>	-.29	-.15
<i>I always know exactly how my child is feeling</i>	-.21	.08

Note. Italicized items were removed from final scale.

Table 2

Hierarchical multiple regression analyses predicting child coping at baseline

Parent Report	Social Coping Competence			Achievement Coping Competence			Affective Coping Competence		
	B	SE B	β	B	SE B	β	B	SE B	β
Step 1									
Parent Age	-.00	.00		-.05	.00		-.01	.00	-.08
Parent Gender	-.01	.07		-.00	.06		-.04	.07	-.02
Family Income	-.00	.01		-.02	.01		.01	.01	.05
Child Sex	-.09	.03		-.10**	.03		-.13***	.04	-.12**
Child Age	.09	.02		.14***	.02		.17***	.02	.19***
Child Ethnicity (D1)	-.02	.06		-.02	.06		.11	.07	.05
Child Ethnicity (D2)	-.09	.06		-.09	.06		-.05	.07	-.03
Step 2									
Parenting Stress	-.01	.00		-.31***	.00		-.01	.00	-.25**
Parenting Warmth	-.00	.00		-.13**	.00		-.01	.00	-.19**
Step 3									
Automaticity	-.11	.05		-.11*	.04		-.04	.05	-.04
<i>Teacher Report</i>									
	Social Coping Competence			Achievement Coping Competence			Affective Coping Competence		
	B	SE B	β	B	SE B	β	B	SE B	β
Step 1									
Parent Age	.01	.04		.02	.05		.05	.04	.08
Parent Gender	-.02	.92		-.00	1.11		.91	.91	.05
Family Income	.17	.07		.13*	.09		.12	.07	.10
Child Sex	-1.53	.47		-.15**	.57		-.22**	.46	-.20**
Child Age	.70	.30		.11*	.36		.18**	.29	.18**
Child Ethnicity (D1)	1.12	.88		.11	1.07		1.61	.87	.16
Child Ethnicity (D2)	1.84	.87		.18*	1.06		2.22	.86	.22*
Step 2									

Parent Report	Social Coping Competence			Achievement Coping Competence			Affective Coping Competence		
	B	SE B	β	B	SE B	β	B	SE B	β
Parenting Stress	.01	.01	.04	.00	.02	.00	.00	.01	-.00
Parenting Warmth	-.03	.03	-.06	-.01	.04	-.01	-.02	.03	-.04
Step 3									
Automaticity	-1.49	.61	-.14*	-.46	.74	-.04	-.21	.60	-.02

Note

* $p < .05$

** $p < .01$

*** $p < .001$.

D1 = African American coded as 1; D2 = European American coded as 1.

Table 3

Hierarchical multiple regression analyses predicting child functioning at baseline

Parent Report	Social Competence			Aggressive Behavior			Anxiety/Withdrawal		
	B	SE	B	B	SE	B	B	SE	B
Step 1									
Parent Age	-.01	.00	-.05	.01	.00	.06	.01	.00	.08
Parent Gender	.04	.11	.01	-.05	.10	-.02	.03	.09	.01
Family Income	.01	.01	.03	.00	.01	.01	.01	.01	.06
Child Sex	-.13	.06	-.08*	.06	.05	.04	-.00	.05	-.00
Child Age	.17	.04	.17***	-.04	.03	-.04	.04	.03	.05
Child Ethnicity (D1)	.14	.10	.09	.06	.10	.04	-.25	.09	-.21**
Child Ethnicity (D2)	.00	.10	.00	.09	.10	.06	-.10	.08	-.08
Step 2									
Parenting Stress	-.01	.00	-.25***	.01	.00	.31***	.01	.00	.26***
Parenting Warmth	-.02	.00	-.27***	-.01	.00	-.08	.00	.00	.01
Step 3									
Automaticity	-.09	.07	-.06	.42	.07	.27***	.06	.06	.0
<i>Teacher Report</i>									
	Social Competence			Aggressive Behavior			Anxiety/Withdrawal		
	B	SE	B	B	SE	B	B	SE	B
Step 1									
Parent Age	.01	.07	.01	-.01	.07	-.01	.03	.05	.03
Parent Gender	-.09	1.66	-.00	.80	1.75	.02	.97	1.20	.04
Family Income	.09	.13	.04	-.14	.14	-.06	-.11	.10	-.07
Child Sex	-3.76	.84	-.21***	3.08	.89	.17**	1.26	.61	.10*
Child Age	1.73	.54	.15**	-.71	.57	-.06	-.23	.39	-.03
Child Ethnicity (D1)	.61	1.59	.03	-1.62	1.68	-.09	-1.56	1.15	-.12
Child Ethnicity (D2)	2.97	1.57	.16	-2.81	1.67	-.15	-1.44	1.14	-.11
Step 2									

Parent Report	Social Competence			Aggressive Behavior			Anxiety/Withdrawal		
	B	SE	B	B	SE	B	B	SE	B
Parenting Stress	-.02	.03	-.03	-.03	.03	-.06	.01	.02	.04
Parenting Warmth	-.10	.06	-.10	-.03	.06	-.03	.02	.04	.02
Step 3									
Automaticity	-.54	1.10	-.03	2.80	1.16	.15*	.55	.80	.04

Note.

*
 $p < .05$

**
 $p < .01$

 $p < .001$

D1 = African American coded as 1; D2 = European American coded as 1.