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# The development of theory of mind: predictors and moderators of improvement in kindergarten

Laura L. Brock<sup>a</sup>, Helyn Kim<sup>b</sup>, Claire C. Gutshall<sup>a</sup> and David W. Grissmer<sup>b</sup>

<sup>a</sup>Department of Teacher Education, College of Charleston, Charleston, SC, USA; <sup>b</sup>Center for Advanced Study of Teaching and Learning, University of Virginia, Charlottesville, VA, USA

## ABSTRACT

Theory of mind describes the ability to engage in perspective-taking, infer mental states, and predict intentions, behavior, and actions in others. Theory of mind performance is associated with foundational cognitive and socioemotional skills, including verbal ability (receptive and expressive vocabulary), executive function (inhibitory control and working memory), and emotion knowledge. In a sample of 354 children from low-income households, theory of mind and foundational skills were directly assessed before and after kindergarten. Results indicate emotion knowledge, inhibitory control, and expressive language predicted improvement in theory of mind. Expressive language also served as a moderator such that children with low expressive language failed to improve in theory of mind regardless of initial theory of mind performance.

## ARTICLE HISTORY

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## KEYWORDS

Theory of mind; expressive language; executive function; emotion knowledge

Accurately understanding and interpreting the thoughts, emotions, and motivations of self and others describes a constellation of mental representation skills, collectively known as theory of mind (Wellman, Cross, & Watson, 2001). With theory of mind, children can appreciate intentions, understand that others might have differing views, and better predict consequences for actions. Theory of mind skills at kindergarten entry predict teacher rated socioemotional skills, closeness within the teacher child relationship, fewer behavioral difficulties related to the transition to kindergarten, above and beyond the contribution of executive function, verbal ability, and emotion knowledge (Brock, Kim, Kelly, Mashburn, & Grissmer, 2018; Caputi, Lecce, Pagnin, & Banerjee, 2012; Slaughter, Dennis, & Pritchard, 2002). Although theory of mind measured at one time point can predict children's concurrent and future social, emotional, and behavioral functioning, less is known about how theory of mind develops over time (Hughes & Devine, 2015). Moreover, although poverty is a known risk factor for delayed executive function, verbal ability, and emotion knowledge, less is understood about how theory of mind develops for children living in poverty. The goal of the present study is to examine predictors and moderators of improvement in theory of mind skills in a high-poverty sample across the kindergarten year.

## Executive function

Past research identifies specific foundational skills that precede theory of mind development. Executive function (EF) is one such skill that describes the ability to monitor and control thought and action towards goal directed behavior (Carlson & Moses, 2001). EF is an umbrella term for a range of

cognitive processes including working memory and inhibitory control (Razza & Blair, 2009). Working memory describes the ability to retain and edit information over a concise time period and inhibitory control involves halting automatic responses to adjust behavior quickly based on new feedback (Barkley, 1999; Perner & Lang, 1999).

Applied to classroom contexts, EF skills are foundational to classroom adjustment. In kindergarten, teachers require children to engage EF when they ask children to raise their hands, wait their turn, and to resist the temptation to act impulsively at school. EF is thought to support theory of mind because children must inhibit the impulse to solely take their own perspective, and then access working memory to simultaneously consider another's perspective (Razza & Blair, 2009). Across cultures, children's EF is concurrently associated with theory of mind (Wang, Devine, Wong, & Hughes, 2016). In terms of a temporal relation, a comprehensive meta-analysis of 109 studies determined that EF predicts future theory of mind but not vice versa (Devine & Hughes, 2014). To further specify the association between EF and theory of mind, both inhibitory control and working memory EF tasks predicted performance on false belief tasks, where children must suppress their own knowledge in a given scenario and predict what a less informed character will believe (Devine & Hughes, 2014).

Bolstering evidence for the relation between EF and the ability to consider others' mental states, children scoring higher on working memory and inhibitory control tasks are more likely to engage in altruistic behaviors. For example, in one study children with higher EF were more likely to tell prosocial lies in order to spare another's feelings (Williams, Moore, Crossman, & Talwar, 2016). Children with higher EF are also better equipped to make appropriate judgments about the thoughts, feelings, and actions fictional characters would experience when given situational vignettes (Lagattuta, Elrod, & Kramer, 2016). Conversely, theory of mind and understanding of social nuances are decidedly lacking in individuals diagnosed with Autism Spectrum Disorders (Wellman et al., 2001). Extant research also suggests autistic children score in the clinically low range on a variety of EF measures compared to neurotypical peers (e.g. Blijd-Hoogewys, Bezemer, & van Geert, 2014). Other work indicates that children from high-poverty samples are less proficient in EF than children from higher SES families (Raver, Blair, & Willoughby, 2013), perhaps because the psychological stress of chronic poverty impairs cognitive functioning (Blair, 2010). In sum, EF is a firmly established predictor of theory of mind; because EF tends to be delayed in children from under-resourced families, it is worth examining whether EF holds the same predictive power in a high poverty sample and whether theory of mind will also lag behind middle-income peers.

### ***Emotion knowledge***

Emotion knowledge, or the ability to identify and label emotions, is also a necessary ingredient for theory of mind, especially the ability to infer what others might be feeling and why. In favor of conceptualizing emotion knowledge as a predictor of theory of mind, researchers found that the ability to label emotions at age 3 was a predictor of conceptual perspective-taking at age 4, as a basic emotional vocabulary is requisite for more complex envisioning of others perspectives (O'Brien et al., 2011). Other research posits the opposite sequence of events—that theory of mind predicts emotion knowledge performance in kindergarten, with the explanation that theory of mind provides a framework for understanding the 'inherent variability in emotion expression' before developing greater emotion knowledge (Seidenfeld, Johnson, Cavadel, & Izard, 2014). In one study where children were given 'disappointing gifts,' participants with greater ability to label others' emotions showed polite responses more frequently (Hudson & Jacques, 2014). Taken together, results suggest emotion knowledge (recognition of the emotions of others) in combination with executive function (inhibiting one's impulse reactions) is needed to perform socially appropriately on a theory of mind-type task.

Prior research indicates increased emotion knowledge in children can facilitate proper adjustment to school (Di Maggio, Zappulla, & Pace, 2016) and protect against negative emotionality and externalizing issues (Heinze, Miller, Seifer, Dickstein, & Locke, 2015). One predictor of emotion knowledge

in children is parental responsiveness. In low-income samples, children of parents who demonstrated greater responsiveness in preschool exhibited better emotion knowledge the following year (Merz et al., 2015). Findings point to the pivotal role caretakers have in nurturing foundational skills for children. For parents living in poverty, chronic stress may reduce the nature and frequency of responsive social interactions with children in favor of attending to other, more urgent basic needs.

### **Verbal ability**

Verbal ability comprises both the amount and complexity of vocabulary that is understood (receptive vocabulary) and generated (expressive vocabulary). EF components and verbal ability are essential ingredients for reading comprehension, and furthermore, children's theory of mind development predicts how well children comprehend meaning embedded in fables (Pelletier & Beatty, 2015). Children with deficits in verbal ability, who are identified as having specific language impairments, are often less proficient in social and emotional skills (Visser & Koolen, 2016). As such, expressive language may be a key ingredient for successful navigation of emotion. By mapping emotions and mental representations onto language, children are better able to express their own thoughts and feelings as well as label and understand other's perspectives. A previous meta-analysis of the association between theory of mind and language which controlled for age of children found that receptive language-specific measures had weaker effects on theory of mind than more holistic vocabulary measures of both receptive and expressive language, which found stronger theory of mind effects (Milligan, Astington, & Dack, 2007). Also found in the meta-analysis was support for language predicting gains in theory of mind, rather than the opposite sequence (Milligan et al., 2007).

Prior work suggests that hearing and using mental state language (e.g., 'the baby is crying, she might be hungry') appears to promote children's ability to engage theory of mind (Ruffman, Slade, & Crowe, 2002). Children of mothers who talk more about their children's mental processes exhibited significantly greater expressive language than children whose mothers less frequently verbalized metacognitive processes (Laranjo & Bernier, 2012). Importantly, in one study, children from families where mothers did not obtain a high school diploma were exposed to 30 million fewer words over a three-year period compared to more educated families (Hart & Risley, 1995). Children living in poverty also experience maternal talk that is less frequent, more directive, less inquisitive, and has diminished richness of vocabulary compared to children in middle or upper income families (Hoff, 2003). Consequently, if language facilitates theory of mind development, then children from low-income families may be at a developmental disadvantage.

### **Present study**

The goal of the present study is to understand the critical ingredients that facilitate theory of mind development. A growing body of research suggests that theory of mind is associated with a host of social and emotional skills, both concurrently and longitudinally (Brock et al., 2018; Caputi et al., 2012; Slaughter et al., 2002). Yet, less is known about the developmental progression of theory of mind (Hughes & Devine, 2015). This is especially the case for children living in poverty who often lag in foundational skills, including verbal ability and executive functioning (Blair et al., 2011; Slade & Ruffman, 2005). This study has the potential to contribute to our understanding of how individual differences in foundational skills bolster or hinder theory of mind gains in a high poverty sample.

According to Bronfenbrenner's bioecological model of human development, social interactions are the catalysts for developmental processes (Bronfenbrenner & Morris, 2006). Applied to classroom contexts, foundational skills (EF, emotion knowledge, and verbal ability) may also shape the nature, frequency, and quality of social interactions children may have with teachers and peers. As such, we hypothesize that foundational skills will predict not only concurrent theory of mind, but also improvement across kindergarten. Moreover, we anticipate that foundational skills will play a key role in

providing opportunities for social interactions and initial skill levels may serve as moderators of improvement rates.

## Method

### Participants

Participants were 354 children (165 boys and 183 girls) who were 4.5–6.2 years in age ( $M = 5.41$  years;  $SD = 0.33$ ) when they participated in direct assessment just prior to or at the beginning of the kindergarten year. Children attended one of four urban Title 1 elementary schools serving predominately low-income communities with 96% of students eligible for free or reduced-price lunch children ( $n = 291$ ). Overall, families reported children's race as African American/Black (91%;  $n = 283$ ), Hispanic/Latino (5%;  $n = 15$ ), or Caucasian/White/Other (4%;  $n = 13$ ). Self-reported maternal education ranged from eighth grade or less to a master's degree, with 89 (29%) reporting less than a high school diploma, 216 (71%) reporting at least a high school degree or equivalent certificate. The current study used data from a larger randomized control trial that evaluated the impact of free after-school programming on long-term achievement at title 1 schools. Over half of the students (59%;  $n = 209$ ) were offered a slot in the after-school program; the other students (41%;  $n = 145$ ) did not receive an invitation to attend the after-school program. In the present study, treatment condition is not hypothesized to contribute variance to the independent variable and is entered as a covariate.

### Procedure

Families with children entering kindergarten across four elementary schools were recruited to participate prior to kindergarten entry. Families were recruited at preschool graduation as well as kindergarten open house; information was also sent home in student book bags during the final months of preschool and during the first two weeks of kindergarten. Families that completed a demographic questionnaire were compensated for their time with a \$10 gift card. Children were assessed on a variety of direct assessments either during either a school-sponsored summer program or in early fall. After their kindergarten year, students were again assessed during either a school-sponsored summer program or in early fall.

### Measures

**Receptive language.** The Differential Ability Scales II (DAS; Elliott, 2007) Verbal Comprehension subtest was used to measure children's receptive language. Various manipulatives were employed throughout five subtests comprising 42 items with the aim of gauging children's understanding of oral instructions involving basic language concepts. In order to progress to the next level, children must respond incorrectly on fewer than three items in a given section. The highest total number of items achieved in this study was 32 ( $\alpha = .87$ ). The technical manual reports adequate internal consistency ( $r = .87$ ; Elliott, 2007).

**Expressive language.** The Differential Ability Scales II (DAS; Elliott, 2007) Naming Vocabulary subtest was used to measure children's expressive language. Children were shown a colorful picture of an item in a book and asked to identify it verbally. The 34 items of this subtest increase in complexity, and children must get fewer than three items incorrect in order to move onto the next decision point. The highest total number of items achieved in this study was 27 ( $\alpha = .87$ ). The technical manual reports adequate internal consistency ( $r = .81$ ; Elliott, 2007).

**Working memory.** The Differential Ability Scales II (DAS; Elliott, 2007) Recall of Sequential Order subtest was used to measure children's working memory. Across a series of 32 items ( $\alpha = .89$ ) increasing in complexity, children were asked to engage short-term recall of verbal and pictorial information by

ordering a progressively longer list of body parts from highest to lowest when given in random order (e.g. elbow, ankle, neck). The technical manual reports strong internal consistency ( $r = .92$ ; Elliott, 2007).

**Inhibitory Control.** For the Head-Toes-Knees-Shoulders (HTKS; Ponitz et al., 2008) task, children must touch their head when asked to ‘touch your toes’ and by touch their toes when asked to ‘touch your head.’ Subsequently, a rule is added where children must touch their shoulders instead of knees and vice versa. The HTKS is made up of three 10-item sections, with each part increasing in complexity, for a total of 30 possible items ( $\alpha = .99$ ).

**Emotion knowledge.** The Emotion Matching Task (EMT; Morgan, Izard, & King, 2010) was used to measure emotion knowledge. Children responded to photographs of elementary school children’s emotion expressions of happiness, sadness, anger, and fear/surprise. The EMT is made up of four parts: matching expressions, expression-situation matching, expression labeling, and expression labeling matching. The total score represents the summed mean of 48 items ( $\alpha = .84$ ).

**Theory of mind.** The Theory of Mind subtest of the Developmental NEuroPSYchological assessment was used to assess children’s ability to understand mental functions including beliefs, intention, deception, emotion, imagination, and pretending, as well as the ability to understand that others have their own thoughts, ideas, and feelings that may be different from one’s own (NEPSY-II; Korkman, Kirk, & Kemp, 2007). The Theory of Mind subtest consists of two parts: a) The verbal task assesses the child’s understanding of another’s perspective via a series of increasingly complex false belief scenarios presented orally; b) during the contextual task, children were asked to relate emotion to social context using pictures. For example, children viewed drawings of an event and were then asked to identify the main character’s feelings from several drawings depicting a variety of emotions. All 28 items were summed ( $\alpha = .83$ ) and raw scores were used in analyses.

## Analytic Approach

All analyses were run using Stata 14.1 (StataCorp., 2015). Initial and final multivariate regression analyses were estimated within a structural equation modeling framework using the SEM command in Stata. Full Information Maximum Likelihood (FIML) estimation was used to account for missing data. FIML uses all available information to produce more efficient estimates (Acocck, 2005) and provides less-biased estimates compared to deletion methods (Enders, 2010).

## Results

Table 1 provides descriptive statistics, including means and standard deviations, and missing data information for all variables included in the study. Descriptive results reveal that, in general, the participants in our study demonstrated lower ability levels as compared to normative samples at kindergarten entry, generally performing around the 33<sup>rd</sup> percentile across measures. Table 2 displays correlation coefficients for all predictor and outcome variables, as well as covariates, included in the study. Older children tended to score higher on theory of mind both before and after a year of kindergarten. Sex was unrelated to theory of mind. Maternal education was correlated with theory of mind post-kindergarten only. As expected, treatment condition was not associated with theory of mind at either time point. Emotion knowledge, inhibitory control, working memory, and expressive vocabulary were moderately correlated with theory of mind at both time points. By contrast, receptive vocabulary was uncorrelated with theory of mind at either time point.

Multivariate regression models were estimated and displayed in Table 3. Model 1 examines covariates only and indicates older children and children whose mothers obtained a high school diploma displayed greater improvement in theory of minds skills across kindergarten. Participating in the treatment condition (having an opportunity to attend an after school program) in the larger study had a slight negative impact in Model 1 only. Model 2 includes theory of mind at kindergarten entry with demographic covariates and only maternal education remains significant. Model 3 adds five foundational skills. Initial expressive vocabulary, theory of mind, inhibitory control, and

**Table 1.** Descriptive statistics (N=354).

	N	%	% Missing	M	SD	Min	Max.	Range <sup>a</sup>
<b>Demographic Variables</b>								
Child age in years at Time 1	339		4%	5.41	0.33	4.5	6.2	
Gender	348		2%					
Male = 1	165	47%						
Female = 0	183	53%						
Ethnicity	311		12%					
African American/Black	283	91%						
Hispanic/Latino	15	5%						
Caucasian/White/Other	13	4%						
Free/Reduced Lunch	303		14%					
Yes = 1	291	96%						
No = 0	12	4%						
Maternal Education	305		14%					
High School or more = 1	216	71%						
Less than high school = 0	89	29%						
Treatment Condition	354		0%					
Treatment = 1	209	59%						
Control = 0	145	41%						
<b>Independent Variables</b>								
Theory of Mind T1	339		4%	10.71	4.08	2	21	0–28
Emotion Knowledge T1	340		4%	33.83	6.62	13	46	0–48
Inhibitory Control T1	339		4%	15.82	17.16	0	56	0–60
Working Memory T1	337		5%	1.15	2.21	0	14	0–32
Receptive Vocabulary T1	335		5%	16.4	3.29	6	20	0–42
Expressive Vocabulary T1	338		5%	20.08	3.37	9	26	0–34
<b>Dependent Variable</b>								
Theory of Mind T2	298		16%	14.96	4.29	4	26	0–28

Note. Time 1 = Beginning of kindergarten; Time 2 = Beginning of 1st grade.

<sup>a</sup>Range indicates total range of possible scores for each subtest.

**Table 2.** Correlations among all variables included in models.

	1	2	3	4	5	6	7	8	9	10	11
1 Age T1	–										
2 Sex (Male = 1)	–0.12	–									
3 Maternal Ed	0.00	–0.03	–								
4 Treatment	–0.08	–0.01	0.08	–							
5 Theory of Mind T1	0.30***	–0.12	0.08	–0.12	–						
6 Theory of Mind T2	0.17*	–0.07	0.17*	–0.13	0.39***	–					
7 Emotion Knowledge T1	0.27***	–0.02	0.09	–0.10	0.40***	0.41***	–				
8 Inhibitory Control T1	0.19**	–0.16*	0.11	–0.13*	0.27***	0.35***	0.36***	–			
9 Working Memory T1	0.20**	–0.04	0.09	–0.08	0.32***	0.25***	0.25***	0.48***	–		
10 Receptive T1	0.06	–0.01	–0.01	0.08	0.02	0.07	0.11	0.06	0.01	–	
11 Expressive T1	0.27***	–0.05	0.27***	0.00	0.30***	0.43***	0.46***	0.26***	0.27***	0.00	–

Note. Maternal education was included as a dichotomous variable with 0 = No high school diploma, 1 = high school diploma.

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

emotion knowledge are all significant and reported in order of magnitude with expressive vocabulary accounting for the most variance in improvement. Following, we examined foundational skills interacted with initial theory of mind skills, each entered into separate models and building upon Model 3. Only expressive vocabulary (Figure 1) moderates the contribution of initial theory of mind skills to theory of mind at the end of kindergarten.

## Discussion

The goal of the present study was to understand the critical ingredients that facilitate theory of mind development. A growing body of research suggests that theory of mind is associated with a host of



**Table 3.** Models predicting theory of mind improvement in Kindergarten.

Variables	Model 1				Model 2				Model 3			
	Beta	SE	Z		Beta	SE	Z		Beta	SE	Z	
Age	0.16	0.06	2.82	**	0.08	0.06	1.47		0.01	0.05	0.28	
Gender (Male = 1)	−0.05	0.06	−0.81		−0.03	0.05	−0.6		−0.03	0.05	−0.59	
Maternal Education <sup>a</sup>	0.21	0.06	3.55	***	0.17	0.06	2.98	**	0.07	0.05	1.28	
Treatment <sup>b</sup>	−0.12	0.06	−2.1	*	−0.07	0.05	−1.32		−0.07	0.05	−1.34	
Theory of Mind T1					0.31	0.06	5.57	***	0.19	0.06	3.28	***
Emotion Knowledge T1									0.14	0.06	2.26	*
Inhibitory Control T1									0.17	0.06	2.77	**
Working Memory T1									−0.008	0.06	−0.14	
Receptive T1									0.05	0.05	1.09	
Expressive T1									0.22	0.06	3.99	***
R2		0.079				0.166				0.295		

Note. TOM = Theory of Mind.

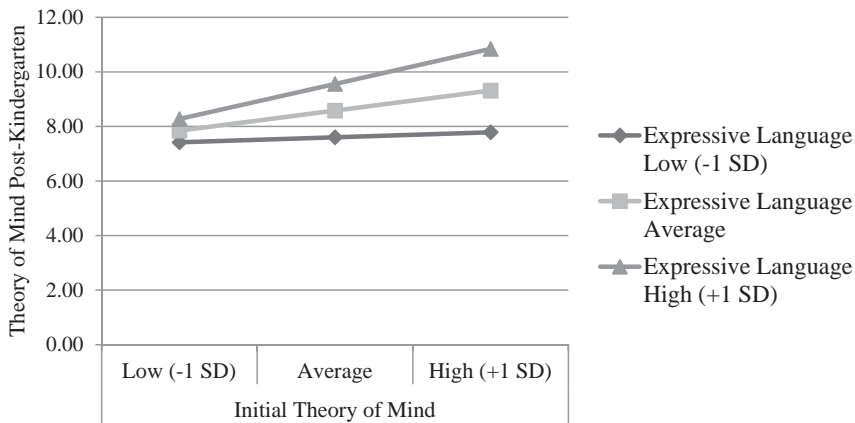
<sup>a</sup>Maternal education was included as a dichotomous variable with 0 = No high school diploma, 1 = high school diploma.

<sup>b</sup>Participants were enrolled in a larger study and treatment condition is included as a covariate.

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

**Figure 1.** Expressive Vocabulary Moderates the Contribution of Initial Theory of Mind Skills.

social and emotional skills, both concurrently and longitudinally (Brock et al., 2018; Caputi et al., 2012; Slaughter et al., 2002). Findings presented here advance prior work by articulating the ingredients that facilitate theory of mind development for a low-income sample (Hughes & Devine, 2015). Although previous research indicates that the presence or absence of foundational skills relates to theory of mind proficiency (Razza & Blair, 2009; O'Brien et al., 2011; Dawson & Williams, 2008) the present study extends prior work with a longitudinal approach and a high risk sample.

To date, theory of mind studies have yielded mixed results. Some researchers have proposed that particular skills—for example, emotion knowledge—are requisite for theory of mind to develop (O'Brien et al., 2011). Others found that a theory of mind facilitates growth in foundational skills: for instance, theory of mind is needed for adequate emotion knowledge (Seidenfeld et al., 2014). Still other research has found that theory of mind emerges simultaneously with such skills and that each feeds upon the other, as with self-regulation and theory of mind in the preschool years (Perner & Lang, 1999). This lack of consensus in the field is especially the case for children living in poverty who often lag in foundational skills, including verbal ability and executive functioning (Blair, 2010; Slade & Ruffman, 2005). We attempt to clarify the relative importance and temporal contribution of a variety of foundational skills by including all five previously identified



predictors of theory of mind within one model and interacting each predictor with theory of mind improvement.

Our findings point to emotion knowledge, inhibitory control, and expressive language as foundational skills that facilitate improvement in theory of mind skills. It is worth noting that inhibitory control and working memory both had floor effects at Time 1, suggesting that the measures were not developmentally appropriate for a sample with multiple sociodemographic risks. It is possible that a more sensitive assessment of working memory would yield significant results. Working memory and theory of mind were moderately correlated at Time 1 and Time 2 so another plausible explanation is that the variance between working memory and theory of mind in correlations is explained by inhibitory control (which also taps working memory by employing a rule switch) in the full model.

Moderation analyses indicate that expressive language plays a pivotal role in facilitating improvements in theory of mind skills, such that children with low expressive vocabulary scores or low initial theory of mind scores tended to have similar theory of mind scores post-kindergarten. The magnitude of expressive vocabulary findings relative to the nonsignificant contribution of receptive vocabulary was unexpected. Verbal ability is a familiar predictor of theory of mind and past research tends to report concurrent associations between theory of mind skills and both expressive and receptive vocabulary (Milligan et al., 2007). However, the present study is unique in that it examines improvements in theory of mind skills and is situated in a low-income community where language skills tend to be delayed. Because 96% of participants identified as belonging to an ethnic minority group we cannot rule out the possibility that the receptive vocabulary measure contained cultural biases, limiting its ability to detect variance in theory of mind skills.

Yet other possible mechanisms for expressive vocabulary being a more robust predictor are also considered. One possible explanation for findings is that children who engage in more social interactions (i.e. expressive language) and are able to access precise language to express their own mental states and respond to others' mental states are likely to have more opportunity to practice and refine their perspective-taking ability. In support of a 'skills beget skills' hypothesis (more expressive language leads to more social interaction, leads to strengthened theory of mind ability), deaf children and autistic children who both tend to lag in expressive vocabulary show similar deficits when given theory of mind-type tasks (Peterson & Siegal, 2000). By contrast, bilingual children tend to outperform monolingual peers on theory of mind tasks (Kovács, 2009). The fact that deaf children have such difficulty with theory of mind tasks may lend credence to the idea that some aspects of vocal speech bolster effective navigation of others' emotions and perspectives. We could expect that children in households with low maternal education, who are exposed to significantly fewer words than middle class peers (Hart & Risley, 1995), may exhibit similar language-related theory of mind deficits. Moderation findings point to possible avenues to explore when working with children at risk for low theory of mind, in terms of which foundational skills need special attention and improvement relative to peers.

### ***Limitations and future directions***

A few limitations require mention in this study. First, as with most theory of mind assessments, the measure itself introduces a heavy language burden. It is possible that some portion of variance in theory of mind skills explained by verbal ability is better attributed to the measure than the underlying construct. Non-verbal theory of mind measures rely on visual diagrams to assess perspective-taking (e.g. Call & Tomasello, 1999) and avoid a language-based measurement confound, but introduce a significant visuospatial demand, especially for kindergarteners. Second, the study design was correlational; as such conclusions can be drawn regarding longitudinal associations among variables but causation cannot be inferred. Third, EF, verbal ability, and emotion knowledge variables were entered at Time 1 but not Time 2. As such, the current study can only speak to predictors of ToM development, but not the development of foundational predictors themselves.

Future work may consider a pilot intervention designed to both enhance children's ability to articulate their feelings and engage in discourse related to how individuals may have experiences or emotions that are different from their own, with the aim of improving children's capacity for taking another's perspective during social interactions in the classroom. Although theory of mind has traditionally been considered a milestone in children's cognitive development, new research reveals that theory of mind capacity is not dichotomous but rather falls along a continuum into adulthood (Apperly, 2013). We propose that theory of mind be conceptualized as a key ingredient in social and emotional development. In classroom contexts, we advocate for rich language around emotions and mental states, with teachers explicitly verbalizing and modeling perspective-taking opportunities.

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## Notes on contributors

**Laura L. Brock** is an Associate Professor in the Teacher Education Department at the College of Charleston. Research interests include understanding how child attributes and contextual affordances interact and co-influence developmental trajectories.

**Helyn Kim** is a post-doctoral fellow at the Center for Universal Education at the Brookings Institution. Her research focuses on the development and measurement of the early skills implicated in learning and achievement.

**Claire C. Gutshall** is a student interested in pursuing a career in school psychology. She provides direct support for children and families through early autism intervention.

**David W. Grissmer** is a Research Professor at the Center for Advanced Study of Teaching and Learning. His interests lie in the developmental origins of achievement gaps between advantaged and disadvantaged students as well as links between "non-cognitive" and executive function skills, effects of skills, and hormonal responses on cognitive development and performance

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