
The Role of Make-Believe Play in the Development of Executive Function

Status of Research and Future Directions

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LAURA E. BERK

ADENA B. MEYERS

The authors discuss the association between make-believe play and the development of executive-function (EF) skills in young children. Some forty years ago, Lev S. Vygotsky first proposed that make-believe fosters the development of symbolic thought and self-regulation. Since then, a small body of research has produced evidence of an association between pretend play and such EF skills as inhibitory control, but its results have been inconclusive and more studies are needed. Still, some research points to the potential mediating role of private speech in the association between pretense and EF, and other evidence suggests that adults can support children's EF development by facilitating and encouraging (but not controlling) young children's make-believe play. Yet other research indicates that the influence of make-believe on EF may be moderated by child characteristics and by the content and themes of play. The authors specifically call for more research on the potential causal link between pretense and EF development in early childhood. **Keywords:** executive function; inhibitory control; make-believe; pretend play; private speech; sociodramatic play

EXECUTIVE FUNCTION (EF)—an umbrella term for self-regulatory skills—refers to the set of cognitive operations and strategies necessary for overseeing and conducting challenging, purposeful life tasks. EF encompasses controlling attention, suppressing impulses in favor of adaptive responses, and combining information in working memory, as well as planning, organizing, monitoring, and flexibly redirecting thought and behavior. A large body of research confirms that early childhood is a crucial time for laying the foundations of EF (Welsh 2001; Welsh, Friedman, and Spieker 2008). Between ages two and six, typically developing children make impressive strides in focusing attention, inhibiting inappropriate responses, planning sequences of actions, and thinking flexibly. Moreover, assessments of EF during the preschool years consistently predict academic achievement and social maturity in the years from kindergarten through

high school (Blair and Diamond 2008; Blair and Razza 2007; Duncan et al. 2007; Pagani et al. 2010; Rhoades, Greenberg, and Domitrovich 2009; Romano et al. 2010). Consequently, clarifying the experiences that contribute to early gains in EF has become a high priority for developmental and educational researchers (Diamond 2012).

In 1933 in a brief twelve-page essay, eminent developmental psychologist Lev S. Vygotsky (1978) presented a provocative, innovative theory on the power of play to augment young children's self-regulation. Vygotsky emphasized the importance of symbolic play—the make-believe that emerges in toddlerhood and that flourishes during the preschool years, evolving into sociodramatic scenarios with peers involving complex coordination of roles. He granted pretense the status of “a leading factor in development,” deeming it a zone of proximal development in which children display a level of maturity more advanced than in nonplay contexts. The child who sits still for only a few minutes during story time can attend for as long as five to ten minutes while playing school; the child who readily grabs playmates' toys shares and waits his turn while collaboratively enacting a meal-preparation scene with peers. In Vygotsky's words, “In play the child always behaves above his average age, above his daily behavior; in play it is as though he were a head taller than himself” (102). The capacities forged in play, Vygotsky proposed, gradually transfer to real-world endeavors, making play a major source of development.

The power of symbolic play to foster young children's self-regulation, Vygotsky pointed out, occurs on two fronts. First, make-believe strengthens children's internal capacity to regulate behavior. Playful use of substitute objects helps young preschoolers realize that symbols (including words and gestures) are distinct from the objects and events to which they refer. This frees the child to use mental symbols (especially language) flexibly, as powerful tools for self-guidance—for overcoming impulse and managing their own actions. Second, make-believe strengthens children's responsiveness to external pressures to act in socially desirable ways. According to Vygotsky, make-believe is above all rule based. Drawing on experiences in their families, communities, and the wider world, children immersed in pretend scenarios willingly subject themselves to social rules: The child pretending to be a parent follows the rules of parental behavior; The child pretending to be an astronaut conforms to the rules of rocket launch and space walk. Because play continually requires children to overcome impulse in favor of rule-governed behavior—to wait, share, cooperate, and abide by social conventions—the child, according to Vygotsky (1978) achieves

her “maximum display of willpower,” her greatest self-control during pretense.

Despite Vygotsky’s intriguing hypotheses about make-believe’s unique contributions to EF skills, research that tests the tenets of his theory remains nascent. Reviewing studies on the role of pretend play in development, Angeline S. Lillard and several colleagues conclude in a provocative article for *Psychological Bulletin* (2013) that strong results for any impact on EF are lacking and that the minimal evidence available from correlational and training studies is inconsistent and unconvincing. In summarizing outcomes of their review, Lillard and her co-authors take a decisively negative stance, asserting that a causal role for pretend play in EF is unlikely. They suggest that any contribution is, at best, uncertain and, probably, nonexistent. If pretend play has an impact, these reviewers maintain, it is “limited to subsets of children” (25).

While we agree with Lillard and her coauthors that research on the pretend play–EF association is insufficient, we take issue with their pessimistic conclusions. In the following sections, we discuss relevant but overlooked evidence on the potential connections between pretend play, private speech, and self-regulation. We show that adult influence is an implausible alternative account of make-believe–EF relationships. And we underscore that results highlighting a greater role for particular types of play, especially for children with EF deficits, are not—as the Lillard article asserts—epiphenomenal reasons for presuming that play is ineffectual. Rather, such moderating effects are common in developmental research, serve to underscore the complexity of development, and refine our understanding. We conclude with recommendations for future investigations.

Evidence of an Association between Pretend Play and EF: What Do We Know?

Although findings have been somewhat mixed, a small but growing body of research suggests a connection, consistent with Vygotsky’s theory, between pretend play and EF in early childhood. Specifically, a number of studies reveal positive associations between children’s make-believe and EF skills related to self-control and inhibition. Singer (1961), for instance, classified forty children, ages six to nine, as “high fantasy” or “low fantasy” based on responses to questions about their preferred games, daydreaming, and imaginary companions. When instructed to wait in one place for several minutes, the high-fantasy children were

able to do so, on average, more than twice as long as the low-fantasy children. To motivate the children to remain still, researchers informed them that the study was related to suitability for space travel, which requires an astronaut to remain in a small space for a long time—information that might have tapped into some children’s fantasy-related proclivities. Nevertheless, all children received the same motivational scenario, and the results demonstrated a clear advantage among high-fantasy children. Consistent with Singer’s findings, longitudinal research (e.g., Elias and Berk 2002; Taylor et al. 2004) indicates that imaginary play in early childhood predicts self-control months and even years later. Elias and Berk (2002) found that observer ratings of preschoolers’ engagement in complex sociodramatic play in the fall were associated with ratings of cooperative and helpful behavior during classroom cleanup later in the school year. Taylor and her coauthors observed that children’s participation in fantasy role-play at age three predicted parent ratings of self-control three years later.

More recently, research has begun to examine the association between pretense and various laboratory-based measures of EF skills. For instance, Cemore and Herwig (2009) found that preschoolers’ ability to delay gratification (i.e., to wait to consume a treat) in a laboratory context was positively correlated with child interview responses about their imaginary play behavior at home. Kelly and Hammond (2011) reported that four- to seven-year-olds’ pretend play in a structured laboratory setting was associated with inhibitory control, as measured by the children’s ability to say “sun” when shown a picture of a moon and vice versa. Finally, Toub (2012) found that instructing preschoolers to use a fantasy-based cue involving imaginary planets improved boys’ (but not girls’) performances on a dimensional sorting task requiring children to inhibit conflicting responses.

As Lillard et al. (2013) correctly point out, research in this area must be interpreted with caution in light of inconsistent findings and methodological limitations. In many cases, researchers measured multiple aspects of make-believe and EF but identified significant correlations only among subsets of variables. Kelly and Hammond (2011), for instance, found no association between pretense and generativity (another EF skill). In other cases, results did not replicate as expected or did not generalize to all subgroups of children (e.g., Elias and Berk 2002; Harris and Berk 2003; Taylor et al. 2004; Toub 2012). Much of this work is limited by small, predominantly middle-class samples and, as Lillard and her colleagues note, the potential problem of experimenter bias. (In some studies, researchers’ awareness of participants’ make-believe status

may have inadvertently influenced the children's performance or scores on EF measures, or their knowledge of children's EF ability may have influenced measures of pretense.) In addition, operational definitions of constructs related to pretend play and EF vary considerably from study to study, making it difficult to compare results reliably.

In sum, there is a clear need for more research in this area requiring larger and more diverse samples, standardized definitions of key constructs, and improved methodology. At the same time, manipulating pretense experimentally may rarely, if ever, evoke make-believe play with features suited to engendering EF—for example, child controlled, rule governed, and necessitating complex coordination of roles. Furthermore, it is premature to disregard the pattern of associations between make-believe and EF that has begun to emerge.

Pretend Play and Private Speech

An interesting and theoretically important line of research connects pretense to EF skills through the potential mediating variable of private speech. Vygotsky proposed that self-regulation develops as children learn to use symbolic thought to overcome immediate impulses—an ability that emerges through the use of private, or self-directed, speech. Young children frequently guide their own behavior by talking out loud, and as they mature this audible private speech gradually becomes internalized as self-regulating thought (Berk 1992; Winsler 2009). Research indicates that young children engage in private speech during cognitively challenging tasks and that private speech is associated with improved task performance as well as development of EF abilities including self-control and attention (Berk and Spuhl 1995; Bivens and Berk 1990; Fernyhough and Fradley 2005). Carlson and Beck (2009) argued that make-believe play, private speech, and verbal thought are all symbolic activities that facilitate EF by affording children the opportunity to distance themselves psychologically from their behavioral context: “The symbolic thought underlying both language and pretense may mediate the link between stimulus and response and thus permit top-down control over impulses” (166).

Consistent with this perspective, research indicates that make-believe play is related to private speech and suggests that pretense may influence EF skill acquisition by facilitating development of self-regulating thought. In a cross-sectional study investigating associations among pretend play, private speech, and age,

Gillingham and Berk (1995) video taped thirty children ages two to six playing in a laboratory setting. Complex pretense increased with age, whereas children's use of private speech within pretend scenarios occurred at relatively high and stable rates regardless of age. Given that private speech normally declines with age but increases with task difficulty, it is notable that the older children in this study exhibited frequent private speech while engaging in relatively complex pretense. In line with Vygotsky's view of pretense as a zone of proximal development, the investigators surmised that through make-believe, children create challenges for themselves while using audible self-talk to guide their efforts. Additional evidence of an association between pretend play and private speech emerged from Krafft and Berk's (1998) observational study of three- and four-year-olds attending either a traditional (play-based) preschool or a Montessori preschool (which actively discouraged make-believe). Rates of fantasy play and private speech were higher in the traditional preschool compared to the Montessori setting, and play and private speech were positively correlated across both settings—that is, those children who engaged in the most pretense also exhibited the highest rates of private speech. Finally, a retrospective study by Brinthaupt and Dove (2012) found that participants who reported having had imaginary friends as children also reported engaging in more self-regulatory self-talk as adults.

In sum, research suggests that pretend play is associated with private speech and that such play may influence EF development by serving as a rich context for private speech and self-regulating thought. Since the evidence is correlational, it remains possible that a third variable (e.g., underlying symbolic-reasoning ability) could explain the connection between pretense and private speech. We clearly need more research to examine fully these hypothesized mechanisms. Nevertheless, preliminary findings suggest that make-believe play provides a vital context in which young children engage in private speech as they learn to regulate their behavior. According to this theoretical perspective, make-believe is not merely an epiphenomenon; rather, it is a potentially important causal factor in EF development.

Adult Influence, Pretense, and EF Development: A Complex Causal Picture

In explicating the view that pretense may not be a causal factor in positive development, Lillard and her coauthors proposed that adult influence could explain

several observed associations, arguing that adults who encourage children to play likely also foster development in other ways. The Lillard article also suggested that pretend play could be “epiphenomenal to intensive, developmentally oriented adult interaction, explaining results from training studies” (25). We have a problem with this explanation because much of children’s spontaneous make-believe occurs in the context of peers rather than adults. Even among very young children (who do often play with adults in developed, Western cultures), complex symbolic play is largely child controlled (Fiese 1990; Haight and Miller 1993).

Furthermore, research indicates that the influence of adult involvement on play and EF development is far from straightforward. Recall Krafft and Berk’s (1998) finding that pretense and private speech were both less prevalent in the highly structured Montessori preschool setting. This study also revealed a negative association between direct teacher involvement and private speech across both settings. Following up on these findings, Ogan and Berk (2009) compared two play-training interventions with Head Start four- and five-year-olds: the first, a direct teaching condition, in which an adult coached each child in enacting make-believe scenarios, giving specific instructions; and the second, a supportive condition, in which the adult sat nearby but permitted the child to create make-believe scenarios, joining in only at the invitation of the child and following the child’s lead. Relative to the direct-teaching condition, the supportive condition resulted in more pretense as well as greater improvement in several EF skills, including inhibition of impulse, modulation of speed of behavior (responding to instructions to speed up or slow down), and planning. Thus, it appears that adult involvement in play can either support or impede both pretense and EF-skill acquisition, depending on the quality of adult-child interactions.

Moderator Effects: The Actors and Themes of Pretend Play Matter

As we noted, Elias and Berk (2002) found preschoolers’ complex, sociodramatic play to be associated with self-control (defined as cooperative cleanup behavior) later in the year. Interestingly, this finding was strongest for children rated by parents as lower in impulse control. We should state that this sample consisted of fifty-three middle-SES (socioeconomic status) preschoolers and that Harris and Berk’s (2003) attempt to replicate the results with a sample of

nineteen low-SES preschoolers proved unsuccessful. In other words, complex sociodramatic play was negatively related to concurrent cleanup behavior and was not significantly related to future cleanup behavior among children in the second study. Pointing to previous research by Dunn and Hughes (2001), in which violent and negative dramatic-play themes were associated with poor developmental outcomes on a number of dimensions, including EF, the authors noted that the play themes observed in this second study tended to be aggressive and conflictual. They speculated that the thematic content of the play could explain findings regarding the negative association between make-believe and concurrent self-control in their study.

Lillard and her colleagues discounted this conclusion, pointing out that “one cannot say that pretend play helps children generally” (23) if violent-themed play is not developmentally beneficial and if positive outcomes of make-believe are limited to middle-SES children rated high in impulsivity. Although the pattern of results is complex, we consider it plausible and even highly likely that child characteristics (e.g., temperament, baseline EF skills, gender, SES) as well as play factors (e.g., thematic content, complexity, degree of peer involvement) moderate associations between pretend play and EF-skill development. Recent findings in the field, for example, reveal that children with self-regulation difficulties are more sensitive than their age-mates to parenting influences (both positive and negative) on self-regulatory development (Ivorra et al. 2010; Kochanska, Philibert, and Barry 2009). It is reasonable to anticipate that other experiences affecting self-regulation might also vary with child EF capacities. Rather than rendering extant findings less compelling, such effects are both theoretically and practically important and deserving of further study.

Conclusions and Recommendations

Although we agree with Lillard and her coauthors that research on the role of make-believe play in young children’s EF skills is too limited to draw firm conclusions, we differ in that we view the evidence to date optimistically rather than pessimistically. Promising investigations have accumulated, employing diverse methodologies, including correlational, longitudinal, and experimental-intervention research. As Bergen (2013) points out, tightly controlled experimental studies of the impact of children’s make-believe, which Lillard and her colleagues clearly prefer, are difficult to conduct for two important reasons:

First, substantial child control over the direction of play appears essential for complex, sustained pretense; Second, adult direction has been found to reduce the quantity and complexity of young children's make-believe (Berk, Mann, and Ogan 2006). Given the nature of pretense, longitudinal investigations of preschoolers' naturally occurring make-believe and interventions providing children with nonintrusive encouragement for engaging in pretense are likely to offer the best evidence for its impact on EF skills.

A substantial body of evidence about both parenting and school influences on EF verifies that make-believe play is but one of multiple potential routes to EF development. Research directed at uncovering pathways of influence has yet to be conducted. For many children, pretend play may strengthen the impact of sensitive, supportive parenting and teaching. For children with EF deficits, make-believe may exert particularly strong effects (as preliminary findings suggest). Additionally, we need research to clarify the thematic contents of play that facilitate rather than interfere with EF development, the degree of play maturity at varying ages necessary to spur EF skills, and the processes through which make-believe exerts its effects—for example, by augmenting symbolic reasoning, rule-based behavior, inhibition of impulses, private speech, planning, or some combination of these and other as yet unidentified capacities.

As with other naturally occurring phenomena that do not lend themselves easily to experimental manipulation (e.g., parenting styles, child-care quality), investigations of the impact of pretense on EF must rely on other high-quality research designs. Correlational studies measuring variables that could alternatively account for the impact of make-believe—such as parental encouragement of play—are needed. Longitudinal research that examines the association between pretense and EF prospectively, with frequent assessments of both variables to permit study of their changing relationship over time, would offer stronger evidence for causal effects. Also vital are carefully conducted quasi-experimental investigations comparing naturally occurring treatments—such as homes, preschools, and kindergartens—varying in promotion of make-believe. Opportunities for field experimentation—such as random assignment of children to classroom curricula that vary in emphasis on imaginative play—would be even more convincing, though these occasions are likely to be rare. In all such efforts, investigating the moderating role of child characteristics must be a priority. A weak pretense-EF association may not reflect the feeble impact of make-believe. Rather, make-believe may influence different children in different ways.

Although Vygotsky's ideas continue to be a popular source of inspiration

for a wealth of developmental research, his intriguing theory of play—make-believe as a zone of proximal development and as a potent source of early self-regulatory development—has been only minimally tested. Yet a close look at children’s complex pretense suggests that it is, inherently, self-regulating—rife with opportunities and requirements to sustain attention, inhibit impulses, follow social rules, plan in the service of attaining child-chosen goals, cooperate and negotiate with peers, and flexibly redirect thinking and behavior. Research on the pretense-EF relationship is particularly crucial given the current early educational climate. While increasing numbers of preschoolers are being deprived of play in favor of narrowly focused, developmentally inappropriate academic training in their homes and early-childhood programs (Hirsh-Pasek et al. 2009), many children (especially those from low-SES families) enter kindergarten with EF problems that pose serious, long-term threats to their academic success (Noble, Norman, and Farah 2005). In contrast to Lillard’s conclusions, we view the pretense-EF relationship as a vitally important and potentially fruitful area of investigation, both theoretically and practically.

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