Pretend Play as a Scaffold for Language and Theory of Mind

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LING1140: Evolution of Human Language
16 April 2026

In this paper, I investigate potential causal links between play and language evolution. I focus particularly on pretend play, for the most part ignoring linguistic play as investigated by Kiràly (2017), and object play as investigated.by Riede (2018). I assess an argument that pretend play, above and beyond other forms of goal-directed social activity, has been instrumental both within language evolution, and additionally in the emergence of theory of mind. Drawing from recent experimental evidence from paleoarcheology, childhood development, and animal studies, I propose pretend play as a likely ground for the evolution of language.

Pretend play is spontaneous and voluntary behavior seen primarily in young children (Garvey & Kramer, 1989), and belongs to the broader category of play. Historically, the boundaries of play have been difficult to specify. Caillois (1961) offers one influential set of criteria, defining play as activity which is relatively voluntary, separate from ordinary life, uncertain in outcome, unproductive, rule-bound, and make-believe. Unlike linguistic or object-oriented play, pretend play employs a greater degree of dual representation, where a mental reality ("pretense") is projected upon objects, actions, and roles of enactors and nearby participants (Lillard, 1993). Everyday examples of pretend play might include a toddler imagining their kitchen floor being made of lava, or preschoolers jointly pretending a plastic stove produces real food. These secondary representations employed in pretence may support a host of advanced mental capabilities: reasoning about mutually exclusive possibilities, imagining possible futures, making causal inferences, and tracking others' mental states (Bastos & Krupenye, 2026). The enabling of such secondary representations have long been argued to be crucial for human cognitive development (Nowell, 2021).

Children begin engaging in pretend play around 18 months of age, increasing in time spent per day until the age of 4, when children spend about 20% of their waking hours in pretend play (Haight & Miller, 1993). For comparison, early language exposure is most beneficial during the 18-24 month window (LENA), suggestive of a link between pretend play and language learning. Below, we examine biological and experimental evidence for this hypothesis.

Many scholars have observed that play allows for increased language exposure and language practice. When engaging in play, children perform co-ordination and co-construction of play scenarios as early as 19 months old. Planning

co-construction requires complex and hierarchical sequencing of actions in collaboration with others. In line with the social-developmental benefits of play, between the ages of one and three, play develops from being predominantly an individual activity to a co-constructed activity (Fantasia et al., 2024). Moreover, play involves specific affordances which do not commonly arise in early non-play social situations, such as perspective shifting and usage of subjunctive mood. Thus, play might serve as scaffolding for the acquisition of pragmatic abilities children would otherwise struggle to acquire (S. Quinn & Kidd 2019, Veneziano 2002).

Although experimental evidence linking language acquisition and play have been unclear, recent research syntheses support the claim. Historically, studies have reported mixed longitudinal associations between play and language across different age groups. Bates et al. (1979) found an association in children aged 9–13 months, and Kirkham et al. (2013) reported a similar association among children aged 3–4 years. By contrast, Shore et al. (1984) found no association between symbolic play and language from 20 to 28 months. More recently, Quinn et al. (2018), in a meta-analysis of 35 studies from the last two decades, found a consistent small-to-medium association between symbolic play and language acquisition.

Childhood is widely agreed upon as central to human cognitive development. Compared to other primates, humans exhibit uniquely long biological childhoods and adolescent phases. The extended developmental period of childhood is reflected not only in behavior, but also in morphology. During early post-natal growth, the brain undergoes morphological change resulting in the globular shape which is characteristic of *Homo Sapiens*, while paleoanthropological evidence points to this phase being absent in Neanderthals (Gunz, 2010). Thus, childhood provides a prolonged window for social, cognitive, and cultural learning (Bogin, 2003; Nowell, 2021). With play being a characteristic activity of childhood, uniquely human aspects of this developmental period – such as pretend play – may have contributed to unique cognitive capabilities such as language.

A play-language link may have surfaced from broader tendencies among mammalian species to promote social and cognitive development in play. Within mammals, play is widespread, with seventeen of nineteen orders of placental mammals engaging in play. Among the three major forms of animal play, object play and social play are the most

commonly observed (Burghardt 2024). Play increases among species who invest heavily in parental care, and who have incentives to raise and foster their young to adulthood (Burghart 2005). The developmental focus among mammals suggests that play, no matter the type, serves important cognitive and social developmental functions. In humans, an essential function for language is to express cognitive and social norms: enabling individuals to coordinate behavior, evaluate one another's actions, and share experiences.

Recent studies also support a cross-species linkage between pretend play and linguistic ability. Just as humans are the only species to communicate using fully featured language, they have long been regarded as the only species capable of pretend play. Pretend play requires the capability to hold pretend object representations, a capability not previously observed in non-human animals. However, in 2024 experimental evidence arose for the language-trained bonobo Kanzi to have held pretend representations. Seen as unusually precocious, Kanzi showed strong interest and aptitude for lexigram training, eventually learning more than 500 visual symbols for communication (Bastos & Krupenye, 2026). Thereafter, within a series of controlled experiments, Kanzi was able to correctly distinguish among an empty glass, a glass containing pretend juice poured from an imaginary pitcher, and a glass containing actual juice. The results of this study implies a cross-species relationship exists between language ability and the capacity to engage in pretend play.

I now turn to arguments for essential cognitive capabilities underlying language being learned and refined through pretend play. The ability to attribute thoughts, intentions, and beliefs to others is known as mind-reading, or sometimes as theory of mind within cognitive literature. The capability for mind-reading is seen as a prerequisite for complex language, and necessary to formulate any recursive belief statement, e.g. "I think he knows". From an evolutionary perspective, language can be seen as necessary for transforming implicit beliefs about others into explicit articulated beliefs. Because explicit articulation is necessary for verbal communication, there exist powerful evolutionary pressures for humans to develop both implicit and explicit mind reading, or theory of mind (Malle 2002).

The notion that theory of mind is critical to learning language is supported by arguments in Malle's work. Experimental studies provide ample evidence that joint attention, one aspect of implicit theory of mind, is necessary to succeed at early word learning and referential communication. In fact, autistic children who have great difficulties with

joint attention show special difficulties learning language, in contrast to children who have cognitive deficits but none regarding joint attention. These experimental studies support the importance of understanding other's attention for language acquisition, and this capability must have been instrumental in any process of language evolution.

In some respects, the explicit theory of mind may be a culturally transmitted phenomena. Heyes (2014) provide an account of mind-reading as completely transmitted by an evolutionary cultural process, and not by verbal instruction. To support these claims, they provide evidence that preschoolers in different countries learn aspects of mind reading at different rates. For instance, in the United States and Australia, young children learn the notion that different people can have different opinions earlier than a person can be knowledgable about a particular fact. However, in China and Iran, the situation is reversed. Due to this observed cultural variance in the importance assigned to these aspects of theory of mind, the authors argue that just as print reading requires existing written culture, mind-reading is entirely produced by cultural means. Expert mind readers communicate mental state-concepts, and ways of representing these concepts, to novices.

Considering mind reading as a cultural phenomenon, play may provide an environment in which cultural environmental pressures on children are exerted, and which ultimately leads to language acquisition. Although pretend play is not limited to cultural reinforcement, it is very commonly a normative cultural activity, within which thematic content and cultural norms present in a child's environment are exercised in an imaginary world. Then, pretend play is likewise able to develop child capabilities for explicit mind reading. In other words, the cultural influence of play may lead to an increased articulation of beliefs on shared intentionality.

We now examine experimental evidence for the relationship between play and the theory of mind. At first, it might seem that pretend play leads to healthy childhood development, including the attainment of Theory of Mind. The capacity to represent objects as more than one -- as done in pretend play -- seems inherently tied to the ability to represent false beliefs -- as done by toddlers with healthy Theories of Mind. This framework of play studies, also known as the "Play Ethos", has been influential in past childhood development studies (Lillard 2013).

It certainly seems that play can aid the development of theory of mind. Play creates an environment within which false beliefs are uttered, and in which propositional imagination is engaged (Carruthers, 2002). As noted previously,

within pretend play, there are many linguistic features which do not commonly occur in non-play settings. These features commonly include mental state terms, conditional verbs, temporal expressions, question tags, subjunctive mood, past-tense verbs, future auxiliary, and descriptive adjectives (Garvey, 1989). All of these features contribute to and enrich the language we use in daily communication.

Experimental studies have contested the link between play and theory of mind. Dore (2015) claims that the evidence does not actually support pretend play being beneficial for theory of mind, citing one longitudinal study which finds better Theory of Mind skills seem to enable pretend play, not the other way around. Likewise, in Lillard 2013, the authors study the relationship between pretend play and theory of mind over a synthesis of prior literature. Considering their own prior work, they propose that there is no significant link between the two.

However, the meta-analysis conducted by Lillard still provides a case for pretend play and explicit theory of mind to be linked. This is due to Lillard's decision to consider language a separate outcome domain from ToM. The paper uses children's ability to assemble blocks into freestanding structures as a proxy for pretend play, and their performance on verbal intelligence tests as a proxy for linguistic ability. Subsequently, the author claims that free block variance is correlated with verbal intelligence, rather than ToM in isolation, and concludes that a link between linguistic ability and play is unsupported. Considering the evidence that theory of mind is a mediator for linguistic acquisition, the categorical distinction drawn by Lillard is not relevant.

Then evidence from Lillard (2013) does support a correlation between separate developmental domains: linguistic ability, including explicit theory of mind and verbal competence, and the sophistication and frequency of pretend play, as measured by children's use of object substitution and imaginary objects to complete tasks. Thus, we argue that the relationship between Theory of Mind and language is additional evidence for a link between pretend play and language acquisition.

We now turn to false belief understanding, bringing experimental evidence to bear on the question of whether theory of mind develops in pretend play. Lohmann and Tomasello (2003) performed a study using a deceptive-object condition. During the course of the study, children encountered objects that first appeared to be one thing (such as a

flower) but were revealed to be another (such as a pen). The children conversed with adults on their beliefs, prior to and after learning the deceptive condition.

The study authors measured the degree to which 3-year-olds' false-belief understanding improved, after training with perspective-shifting discourse and varying levels of discourse. They found that without accompanying discourse on the object by other persons, children were unable to make progress on deceptive object understanding. In addition, the strongest ability for facilitating false belief understanding came through the investigator using matrix verbs for mental states, e.g. (Ellie believes that ...). They conclude that it would be difficult for children to arrive at a well-realized mental state understanding from visual scenes alone, and that language is necessary.

As mentioned earlier, pretend play disproportionately involves sentential complements, and in addition explicit references to pretense. In other words, pretend play involves ostensive pretense, during which pragmatic capabilities for ostensive communication might arise. Over the course of pretense in early childhood development, children are provided with ample representations for conceptualizing, and subsequently articulating false beliefs. While complements arise within many social situations, not just in play, play is a common situation for sentential complements to occur, and thus for the explicit development of theory of mind. From both early childhood development and the animal training study above, experimental evidence supports linguistic capabilities enabling mental representation of false belief.

So far, I have outlined two different methods through which play may have led an evolutionary niche for language. First, I've considered the arguments for pretend play supporting linguistic acquisition, and second for it having links to the development of explicit theory of mind. In the next section, we will further the argument that play is central to language evolution, in addition to its acquisition. We will first consider the biological arguments for play as a precursor to language, and then look at Nicuaraguan Sign Language as a contemporary example of linguistic evolution.

Communication between individuals, which enables group understanding and socially oriented cognition, is commonly contextualized as shared intentionality. Within larger group sizes, shared intentionality is clearly evolutionarily advantageous, and complex social communication may have motivated modern human cognition (Dunbar, 1996). There are many proposals for scenarios in which explicit communicative intent motivates linguistic capabilities: included

persistence hunting (Liebenberg 2008), tracking social relationships (Dunbar 1996), and social navigation (Levinson 2006). Yet, these papers are not able to provide a basis for when or where humans might develop such a capability. Instead, each theory posits the existence of stressors which were selected evolutionarily for language, and are compatible with any particular activity being the grounds over which linguistic evolution occurred.

We argue that play is a strong contender for the grounds for the emergence of shared intentionality. In mammals, play is primarily observed in the young (Burghardt, 2005), and in early modern humans this was likewise also the case. Paleoarcheological evidence suggests that within prehistoric societies, children and adolescents dominated human groups in number, comprising between 40-65% of the population (Nowell, 2021). Play and the development of pretend scaffolds emerge as a strong contender for the emergence of cooperative contexts. In the process of pretend play, children are inherently cooperative in constructing a shared reality.

Is there strong evidence for pretend play to have existed during the period of language acquisition? Pretend play is common in the globalized world (Lillard, 2013). Likewise, in hunter gatherer societies, which are recognized to be a close analogue to the original human condition, fantasy play has also been observed. For instance, among the modern Ju'hoansi children, nearly every aspect of adult life was imitated in similar acts of pretend play (Ninkova, 2017). Then, in early hominins, who are likely to have lacked a similar cultural structure but almost certainly engaged in play, the evidence suggests that they were uniquely engaged in pretend play. It is true that the comparative method cannot directly illuminate the structure of cultural play and imitation in early hominin groups. However, the universal parallel between complex pretend play, human cognition, and language is emphasized again.

So far, we have predominately touched upon play within the context of existing and well-structured linguistic systems. However, as children learn language in an existing linguistic environment, language evolution overall must have differed from individual cultural transmission. At first, it may not be clear how we might be able to go from substantiating claims about the processes which aid children in their own linguistic development, to those which are functionally useful for the development of human language in its entirety.

One possibility is to compare early language evolution to the evolution of signed languages, which we have been able to examine their evolution in recent years. In Senghas et. al. (2005), the authors observe the gradual emergence of a new grammatical form between first and second generations of Nicuaraguan Sign Language users. Because Nicaraguan Sign Language emerged among children who did not have full access to an established model of language, its development offers a clear case of linguistic structure emerging through peer interaction, rather than ordinary intergenerational transmission. The use of differing hand positions to indicate coreference was developed and transmitted over the course of the 1980s by sequential cohorts of child learners. During the emergence of the advanced form of NSL, they propose that children, over the course of peer-to-peer social interactions, built upon the more basic form of the language transmitted by their parents.

The case with Nicaraguan Sign Language supports a similar developmental timeline for language itself. Early modern human children may have been the language-wide innovators who were able to build complexity into protolanguage. In the development of linguistic behaviors aiding the structural and linguistic expansion of language (e.g. syntactic constructions, representation of belief, and co-occurring construction), it seems likely that this process first occurred among children, rather than among the adults actively using a protolanguage. Play is one of the most common social contexts in which children engage with one another. If crucial moments in the emergence of linguistic complexity occur in children, a strong case is made for locating early language evolution within the context of play.

The notion that play is one missing link between protolanguage and the widespread dissemination of language as we know is compatible with two hypotheses for early human communication or protolanguage. These are the technological-pedagogy hypothesis, which links toolmaking, teaching, and linguistic evolution (Stout & Chaminade, 2012; Stout et al., 2011) and the grooming/gossip hypothesis, over which language acts as a more efficient substitute for social grooming (Dunbar, 1996). The theory of play being central to evolution is likewise consistent with holistic or linear protolanguage, e.g. the minimal phonetic, motor, and perceptual mappings proposed by Jackendoff (2017).

It seems likely that the early humans had a holistic and vocal communicatory system from which true human language evolved. Children, taking hold of a basic communicatory system which involves linkages between phonetic

patterning, motor control, and auditory perception, would then be able to engage in play in which they utilize calls in increasingly complex and deictic manners. Consequently over the course of pretend play, syntax and morphology may have occurred for describing alternative realities. Another realistic possibility is that pretend play simply fostered an explicit theory of mind, which ended up being central to the cognitive revolution as a whole.

The main evidence that would invalidate this hypothesis would be strong signs that symbolic language predated play archeologically. For instance, if evidence of symbolic communication were consistently dated before evidence with play, it would be harder to substantiate play, and make-believe more generally, preceding the emergence of complex symbolic language and reasoning. In this situation, language and play would then still exhibit co-evolutionary behavior, contributing to the formulation of increasingly complex language over childhood.

In this paper, we have considered some preliminary arguments for why play might be a plausible precursor for language. We turn to evidence from acquisition and childhood development: the observed positive effect of pretend play on language acquisition offers the possibility that pretend play in fact created the ecological niche for language. We then look at pretend play object representation, and find a unique link between pretend mental representations and the ability to communicate using language. We argue that the evidence is strong that play is critical to the development of theory of mind. We then examine the evidence that theory of mind is critical for language to have evolved, and argue that pretend play may be a critical factor in development of explicit theory of mind.

We further examine biological indicators between pretend play and language. We first note the universality of play across mammalian groups, and claim that it must have existed in early humans speaking a protolanguage. We examine prehistoric societies, and suggest that as with modern signed language, the primary mode by which humans might have developed complex language was in childhood and social interaction. We suggest that the ecological niche posited by gene-culture co-evolutionists was formed in play, and show that this is compatible with existing theories of self-domestication and language evolution. Overall, we demonstrate that evidence across disciplines is consistent with pretend play playing a key role in the evolution of language into its modern form.

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