PRETEND PLAY AS A SCAFFOLD FOR LANGUAGE EVOLUTION

MICHAEL PLEYER

mpleyer@uni-koblenz.de
English Department, Universität Koblenz-Landau, Campus Koblenz, Koblenz, Germany

Pretend play is a universal human behaviour with a wide range of effects on social, cognitive, cultural, and linguistic development. Although it has deep evolutionary roots, humans have constructed a specific developmental niche of extended immaturity which can scaffold the development of complex human skills, such as language and perspective-taking. Pretend play serves as one such scaffold in this developmental niche. It serves as a training ground for the acquisition of complex linguistic skills and skills for linguistically negotiating perspectives, but increased linguistic skills also afford more complex forms of pretend play, creating a feedback loop. As such, they also help children to practice and internalize complex cultural practices and roles. In this paper, it is argued that the cultural practice of pretend play within the human developmental niche represents an important factor that scaffolded the evolution of language.

1. Introduction

Pretend play seems to be a uniquely human behaviour that is culturally universal and displays a predictable developmental sequence (Lillard 2017). Pretend activities also make up a significant amount of children's daily interactions (Haight & Miller 1993; Hofferth & Sandberg 2001). This has prompted many researchers to propose that pretend play has a crucial role in children's development (e.g., Bergen 2002). Indeed, pretend play has been found to be closely connected and tightly integrated with other uniquely human cognitive and interactional abilities. For example, pretend play has been positively related to Theory of Mind, executive functions, and advanced sociocognitive capacities, especially in the form of pretend social role play (e.g. Carlson & White 2013). Pretend play is also strongly associated with language and language acquisition (Quinn et al. 2018). Given this relationship, some researchers also have assigned an important role to (pretend) play as a factor influencing the evolution of language (e.g. Lillard 2017; Langley et al. 2019). In Parker's (2002: xv) words,

"[g]iven the developmental and evolutionary proximity between pretense and early language, perhaps it is inevitable that interest in the developmental and evolutionary emergence of language lurks behind much of the work on pretense." This paper will discuss the evolutionary foundations and functions of pretend play, especially its possible relationship to the evolution of language. I will first discuss the evolutionary foundations and functions of (pretend) play, before turning to the function of pretend play in human development. One of the key functions of pretend play is that it serves as a scaffold for development of social and cognitive abilities, including language. This is why I will look at the relationship of pretend play in language in more detail, before arriving at a theoretical proposal for role of pretend play in language evolution. Specifically, I will argue that pretend play served as developmental niche which scaffolded the emergence of complex forms of language, namely the development of complex constructions for negotiating and sharing perspectives.

2. The Evolutionary Foundations and Functions of (Pretend) Play

From an evolutionary standpoint, it is an important question which cognitive capacities children engaging in pretend share with other animals and what the evolutionary foundations of pretend play are. First of all, play can be found in all primates. Pellegrini et al. (2007: 272) state that for primates, play can be seen as a prolonged phase of free exploration, providing "a low cost way to develop alternate responses to new and challenging environments" (cf. Kavanaugh 2011: 296).

Regarding object play, it seems that human children and wild young chimpanzees engage in it to a similar degree (15% for human children vs 10% for young chimpanzees; Ramsey & McGrew 2005; Callaghan & Corbit 2015: 271). Social play also occurs in non-primate species (Palagi 2011: 71). Pellis and Pellis (2011), for example, argue that in rats, early social play has important positive effects on the development of the coordination of social interactions and emotional regulation. They hypothesise that social play in young human children might serve a similar function (Callaghan & Corbit 2015: 271). Lillard (2015: 442f.), also poses that there might be an evolutionary connection between pretence and the play fighting observed across many animal species. She argues that both behaviours create a frame in which actions possess meanings that not identical with their meanings and consequences in the real world. Therefore, some kind of boundary that separates real and pretend must be maintained by animals when they engage in play fighting. There might therefore be some evolutionary foundations connecting human and non-human play and also pretend play in

humans. However, the evolutionary functions of pretend play are less clear. Lillard (2015. 459) holds that we still do not know why children engage in pretend play or why they engage in different forms of play at all. However, the ontogeny of pretend play indicates that it is an evolved behaviour. Namely, there is a predictable developmental sequence to it, and it appears universally in all cultures, albeit in different expressions and with different frequencies (Lillard 2017).

Lillard (2017) hypothesises that pretend play might have been an exapted by-product of animal play fighting. Play fighting probably evolved in animals as it represented a way to practice and rehearse fighting skills. "Play fighting involves signalling that one is only playing, and these signals and the accompanying play acts share the structure of other symbolic acts." (Lillard 2015: 459). Pretend play in human children and play fighting in animals can be seen as analogous as they share a number of isomorphic properties: "both involve an as-if world, reading signals that indicate this as-if status, and understanding that behaviors and objects in the as-if world stand for or are symbolic of behaviors and objects in the real world" (Lillard 2017). Both play fighting and pretend play therefore involve metacommunication and symbolic relationships.

Human caregivers use specific cues to signal pretend, both behaviourally and later linguistically (Nakamichi 2015). Many other animals, especially other mammals, also have ritualised ways to signal to conspecifics that their behaviour is pretend – i.e. that it is different from real fighting. For example, play fighting rats use ultrasonic, high-pitched vocalisations that signal that they are play fighting and also nuzzle a different area of their conspecific than if they would really bite them (Pellis & Pellis 2011; 2017). Dogs use 'play bows' as a signal that they are play fighting (Bekoff 1995) and primates such as chimpanzees, gorillas, baboons, and macaques use a so-called 'play face' (Liebal et al. 2014: 137f.) to indicate that they are not engaging in actual aggression (Lillard 2017). However, the claim that the structure of these acts can be seen as symbolic is controversial, as is the claim that non-human animals perform symbolic play at all (Callaghan & Corbit 2015: 270; Mitchell 2002).

Play fighting is also positively related to the development of executive functions in a range of animals, especially self-regulation (Pelis & Pelis 2017). It is also positively related to the development of social skills (Gray 2019). As mentioned above, there is also evidence that the development of these capacities is also supported by pretend play (Pellis & Pellis 2017; Lillard 2017).

However, at the moment the evidence on proposed evolutionary benefits and functions of play is still far from conclusive (cf. Sharpe 2019). Regardless, as the above discussion has shown, there is support for the claim that play behaviour

represents a shared evolutionary platform for the evolution of human symbolic behaviour, including language and pretence. A number of researchers have indeed highlighted the role of pretend play in the evolution of language. In accordance with Piaget (e.g. 1962), who argued for a common origin of language and symbolic play, these researchers argue that both language and pretend play require similar representational and sociocognitive capacities. Therefore, pretend play might have played an important co-evolutionary role in the evolution of language (e.g., Donald 1991; Knight 1998, Ginsburg & Jablonka 2014). To investigate this issue further, in the next section we will turn to proposed functions of pretend play in human ontogeny.

3. The Functions of (Pretend) Play in Development

The functions of (pretend) play in human ontogeny is a complex and controversially discussed issue (e.g. Lillard et al. 2013; Harris & Jalloul 2013). It has been argued to be important in in cognitive development in a number of domains. For instance, pretend play has been shown to be positively related with developments of children's executive and cognitive functions such as inhibition, working memory, cognitive flexibility, planning, problem-solving, metacognition, self-regulation, counterfactual reasoning and decision making (e.g., Bergen 2002; Whitebread & O'Sullivan 2012; Carlson & White 2013). The enactment of imagination requires can open new search spaces for solutions to problems and for testing hypotheses (Langley et al. 2019). Pretend play can therefore be said to facilitate children's learning by allowing them to explore reactions to various situations and to practice and internalise behaviours (Gaskins 2013).

What follows from this is that, crucially, pretend play has important social functions, as it enables them to learn about stereotypical situations and roles that are socioculturally salient (Gaskins 2013). Research on cultural variation in pretend play has shown that pretend play universally serves the function to practice and internalize culturally salient frames, scripts, schemas and routines with the aid of linguistic interaction (Gaskins 2013). In fact, in hunter-gatherer groups play time is correlated with the likelihood the child will perform a particular role in adulthood, and the difficulty of the skill they are pretending to perform.

Given its fundamentally social nature, pretend play can also be linked to sociocognitive development. For example, it has been argued that one of the functions of pretend play is that it aids perspective-taking abilities and the internalisation of different perspectives (Vygotsky 1978; Robson 2012).

Capacities for theory of mind and social understanding have also been related to pretend play (Youngblade & Dunn 1995). Shared pretense also requires the coordination and negotiation of roles and the co-creation of a shared 'we-perspective' (Tuomela 2002). For this reason, Rakoczy (2006) has argued that pretend play can be seen as a crucial cradle of the development of shared intentionality, that is, the capacity to engage in shared cooperative activities with others with shared intentions (Tomasello 2008). Both perspective-taking and shared intentionality are also strongly implicated in language acquisition (e.g. Tomasello 2003, 2008) and it therefore not surprising that pretend play, language acquisition, and semiotic development are also closely correlated (Zlatev & McCune 2014; Quinn et al. 2018).

This is also where the relationship between pretense and the evolution of language comes into play. Specifically, by looking at the ontogenetic role of pretend play in language acquisition we can make inferences about their relationship in the evolution of language.

4. Pretend Play and Language

There is a number of ways that pretend play can be said to boost and aid in language development. In general, it can be said that pretend play serves a scaffolding function for the development of complex linguistic constructions for the negotiation of perspectives. This is mainly due to two reasons (see also Langley et al. 2019).

First, as seen in the previous section, pretend play scaffolds the development of a number of cognitive abilities and mechanisms which are also operative in language acquisition, such as social understanding, shared intentionality, abstraction and schematization, (e.g. Tomasello 2003). Symbolic ability plays a particular important role in this context. As outlined in Section 2, both pretend play and language depend on the capacity for symbolic understanding (Lillard 2017; Zlatev & McCune 2014). That is, they both depend on the capacity to see one entity as symbolically standing in for and evoking another entity. In the case of pretend play, this could be the symbolic relationship between a banana and a telephone, where the banana is used 'as-if' it were a telephone (Lillard 2017). In language, it relates to the basic symbolic relationship between a linguistic form, like dog, and the conceptual entity it evokes or expresses (Langacker 1987). Recent evidence lends support to the proposal that both language and pretend play depend on the development of a symbolic capacity, which also can be seen as the foundation of other capacities related to pretend play and language, such as theory of mind (Lillard & Kavanaugh 2014).

Second, this is the case because the complexity of play and its cognitive and interactive elements foster the development of strategies negotiating complex pretend play scenarios, including the coordination of pretend actions and the assignment of pretend roles. For example, Cook-Gumperz & Kyratzis (2001) have shown that pretend play situations can be seen as a training ground and crucial scaffolding for the acquisition of progressive and simple present constructions. Overall, "Symbolic play provides a rich context for the exchange and negotiation of meaning, and thus may contribute to the development of important skills underlying communicative development" (Quinn & Kidd 2019: 33). Similarly, Trawick-Smith (1998: 433) notes that many researchers see pretend play as an important context for children to acquire linguistic competence and social skills because it requires them to "regularly negotiate shared symbolic meanings and coordinate ideas and intentions within make believe." This is echoed by Bruner (1983: 65), who argues that "the most complicated grammatical and pragmatic forms of language appear first in play activity." Relatedly, Langley et al. (2019) argue that play situations, due to their interactional complexity can be said to provide children with affordances and contexts for practice, hypothesis-testing and inductions of complex grammatical constructions. There is indeed evidence that children's use of language is more complex in play than in non-play contexts (Weisberg et al. 2013: 43). Internal state language, too, such as "This is a bad dog, you know" (Howe et al. 2005), as well as the linguistic co-construction of shared meanings have been shown to be positively related with pretend play (Howe et al. 2005). Pretend play, then, can be seen as a training ground and scaffolding for language acquisition and the linguistic negotiation of perspectives.

Given the developmental relationship between pretend play and the acquisition of more complex forms of language it is likely that they co-evolved. We will turn to this topic in the next section.

5. Pretend Play and Language Evolution

The above considerations allow us to draw several lines of argumentation together in order to arrive at a theoretical explication of the relationship of pretend play and language evolution. Both pretend play and language can be said to have been integrated into a human developmental niche through processes of niche construction and biocultural enculturation. This niche was created through the evolution of an extended juvenile period which in turn shaped human evolution and the evolution of language (cf. Sinha 2009). This extended period of socialization, in combination with more complex social networks had a number of effects on human ontogeny (Hare 2017; Benítez-Burraco & Kempe 2018). It

can therefore be seen as an important component part of the evolution of the human socio-cognitive niche (Whiten & Erdal 2012).

Most significantly, in this niche children had more time to develop complex skills and cognitive abilities (Bjorklund et al. 2009). As a consequence, behaviours such as pretend play could scaffold other more complex behaviours such as the acquisition of complex constructions and skills for participating in complex culture. In addition, linguistically mediated play activities also scaffolded and were scaffolded by the emergence of complex skills of perspective-taking and social understanding (e.g. Tomasello 2008; Carpendale & Lewis 2015). Negotiating perspectives is central for human interaction (e.g. Carpendale & Lewis 2015) and construal and perspective-taking are also central to the structure of human language (e.g. Langacker 1987). As pretend play is also characterized by high degrees of negotiating perspectives, I argue that pretend play as a developmental niche and cultural practice scaffolded the emergence of complex constructions for negotiating, sharing, and maintaining perspectives.

One crucial factor in the evolution of language therefore was the emergence of a developmental niche in which pretend play scaffolded the acquisition and development of complex linguistic constructions in order to negotiate and share perspectives and to internalize culturally salient roles and knowledge. The development of more complex constructions afforded more complex forms of pretend play, which in turn led to the internalization of more complex cultural practices and mastery of cultural artefacts. In other words, humans constructed a developmental niche in which pretend play and language scaffolded each other in spiralling dynamic feedback loops within a multidimensional developmental web (e.g., Caporael et al. 2014; Mascolo and Fischer 2015).

One factor hypothesized to have led to the emergence of human forms of play is that of self-domestication (Langley et al. 2019, see also Benítez-Burraco & Kempe 2018). Domestication increases play behaviour in animals (Himmler et al. 2013) and leads to an extended juvenile period characterized by immaturity. It is likely that human self-domestication process also led to the entrenchment of longer and different types of play behaviour, in turn affording scaffolding processes enabling the development of complex linguistic skills and interactive behaviours (cf. Benítez-Burraco & Kempe 2018). This is consistent with arguments that the cultural evolution of linguistic structure is based on processes of self-domestication (Thomas & Kirby 2018).

6. Conclusion

In this paper I have argued that pretend play had an important role in the evolution of language and cognition. Play behaviour is present in a wide range of animals and has deep evolutionary roots. Both in human and non-human animals play can be said to scaffold the development of complex cognitive and social skills. The beginnings of symbolic abilities can also be seen in play behaviour. In humans, pretend play has an even more dramatic effect, and scaffolds the development of a wide range of cognitive and cultural skills. Importantly, it can be said to act as a scaffold for the development of perspective-taking skills and complex linguistic skills, which in turn feed back into the development of more complex forms of pretend play. For the evolution of language, this means that pretend play likely served as a scaffold enabling the development of complex constructions for negotiating perspectives, and for the linguistically mediated acquisition of cultural knowledge. This scaffolding process represents an emergent product of processes of self-domestication and the construction of a particular developmental niche in which this dynamic, interactive feedback loop could take place.

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