Evolutionary pragmatics: A diachronic view of common ground

This paper explores the relationship between language and Theory of Mind (ToM), advancing the new hypothesis that pragmatic markers are a linchpin for ToM. Pragmatic markers are linguistic devices that structure discourse and mark intersubjectivity (i.e. the speaker's assumptions about whether the listener shares their attention or knowledge). I hypothesize that pragmatic markers connect language and ToM and enable their co-development in ontogeny and co-evolution in diachrony and phylogeny through a positive feedback loop, whereby the development of one skill boosts the development of the other. To test this new account, I propose to investigate two kinds of pragmatic markers: demonstratives (e.g., 'this' vs. 'that') and articles (e.g., 'a' vs. 'the'); as well as their cultural evolution (i.e. their diachronic change through processes of learning and use). More specifically, I will put forward three working hypotheses, each linked to a different timescale in language evolution research:

1. **Pragmatic markers in language acquisition**. The acquisition of demonstratives (e.g., 'I prefer that one'), which are often accompanied by a pointing gesture, builds on and buttresses young children's ability to engage in *joint attention* (i.e. sharing their focus of attention with others). Depending on the language, demonstratives may indicate not only the distance, but also other relational values such as the altitude, familiarity, position, reachability or visibility of a referent, from the perspective of the speaker, the listener, or both. I predict that the development of *perspective taking* follows different paths depending on the perspectives and relational values encoded in the demonstrative system(s) that the child is learning.

2. **Pragmatic markers in language use**. Discourse demonstratives (e.g., 'That was a good year') and definite articles (e.g., 'We bought the house') mark a more sophisticated form of common ground than gestural demonstratives: one that goes beyond the here-and-now and ranges over conversations and past shared experiences. I predict that the use of demonstratives and definite articles trains speakers in monitoring their interlocutor's attention and in managing common ground, resulting in the *automatization* of these processes over time, with potential cross-linguistic differences.

3. **Pragmatic markers in language change**. The links between these pragmatic markers form a chain of ToM development that is instantiated not only in language acquisition but also in language change, with gestural demonstratives giving rise to discourse demonstratives, which in turn give rise to definite articles. These parallels open the possibility of modelling ToM development not only across childhood, but also across generations of speakers, driven by and in turn driving the evolution of pragmatic markers.

This new account on the relationship between language and ToM is based on the following observations: Demonstratives are universal (Diessel, 2006, 2012; Levinson, 2018) and are often accompanied by a pointing gesture, which is another universal communicative device that is used in all cultures to establish joint attention (Kita, 2003). Demonstratives emerge very early in language acquisition (Clark, 1978), and their origins cannot be traced back to other types of grammatical expressions, suggesting that demonstratives emerged very early in the evolution of language (Diessel, 2003). Given their universal scope and their fundamental role to establish joint attention, demonstratives are a promising candidate for a grammatical class that may be linked to the emergence and development of ToM in humans.

Grammaticalization is the process whereby content words develop into grammatical markers (Comrie, 1989; Hopper & Traugott, 2003; Diessel, 2007). These processes tend to have a common source and follow universal pathways: for example, demonstratives tend to evolve into definite articles (Greenberg, 1978; Lyons, 1999). I propose that this particular instance of language change has conceptual parallels in pragmatics and ToM (see Table 1). I hypothesize

that the acquisition of demonstratives plays a key role in the development of joint attention and perspective taking across languages. Building on these early abilities, the acquisition and use of anaphoric demonstratives and definite articles require more sophisticated ToM abilities: monitoring ongoing discourse and earlier common ground requires, at a minimum, to be able to keep a record of what has been said and previously shared and, once fully developed, an understanding of what is known to the interlocutors in a conversation. Therefore, the use of anaphoric demonstratives and definite articles ultimately feeds into the development of *epistemic reasoning* (e.g., deciding whether the listener knows the person you want to talk about, or whether you first need to introduce that person in the conversation).

Table 1: Conceptual parallels across language, pragmatics and ToM during language change.

Theory of Mind	Joint attention > Perspective taking		Epistemic reasoning	
Pragmatics	Co-presence		Discourse	Common ground
Language	Exophoric demonstratives > Anaphoric demonstratives		> Definite articles	
Examples	*Look at that house.*	*That year they met.*	*We bought the car.*	

Diessel (2006:477) characterized the evolution of demonstratives into definite articles as an evolution of their corresponding functions: Deictic > Anaphoric > Definite. Comparing exophoric and anaphoric demonstratives, Diessel (2013:246) refers to the latter as 'disembodied uses' since discourse referents no longer have a physical substrate. Here I propose a *diachronic view of common ground* whereby this pathway of language change marks a three-step expansion of the speakers' notion of common ground, starting with the shared physical space, and abstracting away to their ongoing discourse representation, and further still, to earlier experiences and world knowledge shared by the interlocutors (see Fig. 1). This diachronic view, however, describes the conceptual expansion observed in diachrony, and does not apply to the distribution of these forms in synchronic language use (e.g., definite articles can be used to mark a familiar discourse referent).
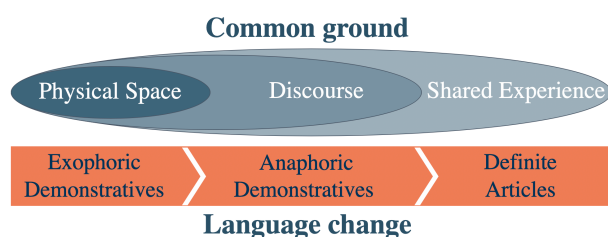

Fig 1: Diachronic expansion of common ground.

In this view, the development of the child's notion of common ground is parallel to the development observed in the historical record across a vast number of languages that evolved definite articles from their demonstratives.

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