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From the pragmatics of charades to the creation of language

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Abstract

We agree with Heintz & Scott-Phillips that pragmatics does not supplement, but is prior to and underpins, language. Indeed, human non-linguistic communication is astonishingly rich, flexible, and subtle, as we illustrate through the game of charades, where people improvise communicative signals when linguistic channels are blocked. The route from non-linguistic charade-like communication to combinatorial language involves (1) local processes of conventionalization and grammaticalization and (2) spontaneous order arising from mutual constraints between different communicative signals.

We applaud Heintz & Scott-Phillips's (H&S-P's) argument that the gulf between human communication and that of other animals arises primarily from the astonishing power of human social and pragmatic reasoning. We agree, too, that the unique flexibility and sophistication of natural language, in contrast to nonhuman animal communication systems, arise from a suite of cognitive abilities underlying such reasoning, rather than from any human-specific "universal grammar," encoding abstract syntactic knowledge.

From a pragmatics-first perspective, however, the question remains: What is the route from non-linguistic communication, driven by a powerful "pragmatic engine," to the creation of the astonishing complexity of full-blown combinatorial language? In this commentary, we argue that the game of charades provides a window not only into the nature of human pragmatic inference, but also into how linguistic systems can begin to emerge through a process of conventionalization (Christiansen & Chater, 2022). We suggest, moreover, that processes of cultural evolution, without further biological evolution, can lead to the creation of a full-blown language, with the spontaneous, although partial, emergence of complex syntax.

To fix our intuitions, consider a charade aimed at conveying *The Hound of the Baskervilles*, first by miming the act of peering through a magnifying glass (hoping to bring to mind Sherlock Holmes) and then imitating a dog-like baying and biting action (to bring to mind the hound). While H&S-P focus on the complementarity between mechanisms for expression and interpretation of communicative signals, we stress that successful integration of such mechanism also requires communication to be a collaborative process (see Brennan & Clark, 1996; Clark, 1996; Misyak & Chater, 2022). Thus, miming looking through a magnifying glass will only be taken to convey Holmes if the existence of the relevant association is common to all participants. Similarly, the relevance of Holmes to the target book title requires knowing that *The Hound of the Baskervilles* is a Sherlock Holmes mystery. If the observer doesn't know this then the communicative signal will likely fail. More generally, successful improvised communication requires all parties implicitly *agreeing*, given their common knowledge and goals, on a particular mapping between signals and meanings. Whatever the actor intends the charade to convey, the charade only succeeds in doing so if everyone involved interprets the charade in the same way (or closely enough for their communicative goal to be achieved). The capacity for establishing common ground, and engaging in joint reasoning in light of that common ground, is arguably crucial for coordinated social behavior of all kinds, and it is particularly central to the coordination of signal-meaning mappings underlying communication.

Charades are, of course, typically one-offs; and the charm of the game is the continual need for ingenuity and creativity from all players. But if the game is played repeatedly by the same people, conventions can rapidly become established. Thus, the magnifying glass gesture may become increasingly simplified and stylized, and its use broadened to convey detectives of all kinds, crime stories and movies, actual crimes, and so on. More generally, each new charade can build, in arbitrarily creative ways, upon the common ground of prior charades.

We have recently argued (Christiansen & Chater, 2022) that the gradual conventionalization of charades captures, in miniature, some crucial aspects of the cultural evolution of language. The linguistic signal becomes increasingly standardized and simplified over time; and the meanings conveyed can both sprawl in many directions. Thus, everyday words, such as *game*, *set*, or *shallow* have endless interlocking meanings but, as Wittgenstein (1953) stressed, with no common definitional core (e.g., consider *shallow waters*, *slopes*, *boats*, *bowls*, *spoons*, *thoughts*, etc.).

The process of erosion and simplification of form, and broadening of meaning, parallels the process of grammaticalization widely observed in comparative and historical linguistics (e.g., Bybee, Perkins & Pagliuca, 1994; Hopper & Traugott, 2003). Grammaticalization is the process by which some "content" words become so stereotyped in use, and so "bleached" of meaning, that they take on purely grammatical functions. Thus, for example, the content verb *to will* has in English also taken on a purely grammatical function (e.g., *I will eat* shifts from signaling an intention to eat, which must necessarily happen in the future, to a pure future-tense marker, irrespective of intention, as in *the temperature will rise*). Processes of simplification and erosion can also cause distinct words to collapse together, to create morphological complexity (thus, forms of *to have* have joined with verb stems to mark the future tense in many Romance languages) (Coleman, 1971; Fleischman, 1982). The creation of grammatical words and functions and the increasing standardization of their use provides the starting point for complex syntactic patterning.

The linguistic signal consists of recycled parts with partially conventionalized meanings, although always with the possibility of new and often highly creative uses (Contreras Kallens & Christiansen, 2022). Thus, we continually extend meanings using rich pragmatic inference, such as in metonymy (e.g., *take this drink to the pancakes by the window* – where *the pancakes* substitutes for *the customer with the pancakes*) and extend

meanings across domains by elaborate and partially consistent processes of metaphor (e.g., famously mappings between physical and mental objects and transportation [Lakoff & Johnson, 1980], so that we can give a person an idea, leave a worry behind, have it at the back of one's mind, etc.). Thus, the creative charade-like process remains at the heart of linguistic communication, but built on a system of conventions that has become entrenched over generations of language use.

The process of grammaticalization is, we suggest, part of the broader process of cultural evolution of language – by which linguistic forms and their meanings are continually reshaped by the multiple constraints of our perceptual, motor, and cognitive machinery, as well as the continually changing communicative challenges that we face (Christiansen & Chater, 2022). Moreover, different linguistic conventions will continually be shaping each other, through processes of similarity, analogy, and competition. If H&S-P are right, and cognitive pragmatics is prior to, and underpins, linguistic communication, it is natural to consider the patterns exhibited by natural languages not as arising from a distinctive special-purpose biological endowment for syntax (Berwick & Chomsky, 2016), but through a process of spontaneous order over generations of cultural evolution (Chater & Christiansen, 2022).

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Cognitive pragmatics: Insights from homesign conversations

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Abstract

Homesign is a visual–gestural form of communication that emerges between deaf individuals and their hearing interlocutors in the absence of a conventional sign language. I argue here that homesign conversations form a perfect testcase to study the extent to which pragmatic competence is foundational rather than derived from our linguistic abilities.

Compared to the longstanding histories of spoken languages, all known signed languages are considered to be young languages (Meir, Sandler, Padden, & Aronoff, 2010). For this reason, the study of sign languages and the social mechanisms through which they evolve provides a unique opportunity to shed light on the following questions: Which aspects of our communicative abilities are present from the very earliest stages of language emergence; and, by extension, which aspects of our cognition have been selected for as language evolved?

From the 1970s until recently, sign language linguistics focused almost entirely on sign languages that have arisen as deaf people have congregated in the context of government institutions for the deaf, primarily deaf schools (McBurney, 2012). Oftentimes such sign languages have been around for several centuries, such as Old French Sign Language and its descendent American Sign Language, but in a few cases sign linguists have been able to track the emergence of new sign language from the very start (Senghas, Kita, & Ozyurek, 2004). From 2005 onward, the field has started to investigate the many sign languages to have emerged in rural areas with a high incidence of deafness (Zeshan & de Vos, 2012). In a handful of cases, such complex gene-culture coevolution has led to longstanding rural signing communities, but in most cases the unique circumstances that lead to emergent signing varieties do not allow them to persist across multiple generations (Mudd, de Vos, & De Boer, 2020).

Emergent signing varieties are often thought to originate in homesign systems (Senghas et al., 2004); that is to say, one-off communication systems that begin and end with just one deaf individual who co-creates a visual–gestural form of communication with their hearing relatives and friends in the absence of a signing community (Goldin-Meadow & Brentari, 2017). The homesign literature thus far has focused mostly on the genesis of linguistic structures and the cognitive consequences of long-term language deprivation (see Motamedi, Schouwstra, Smith, Culbertson, & Kirby, 2019, for a recent overview). Most notably, Gagne and Coppola (2017) found that the four Nicaraguan homesigners who participated in their study were unable to pass standard false belief tasks that require the ability to predict other's beliefs and behaviors. When taken at face value, these findings are problematic for any perspective on language evolution that views our pragmatic abilities as foundational to human language (cf. the target article; Levinson, 2019). In the remaining paragraphs of this commentary, I provide an alternative view based on data from Bali: that, in everyday conversation, homesigners may demonstrate ample evidence of mentalizing abilities.

Crucially, most work on homesign has been based on small-scale case studies elicited from a small number of deaf individuals in Nicaragua and the United States. The data discussed here stem from the newly created Balinese Homesign Corpus, which includes, among other things, conversational data from 14 homesigners and their hearing interlocutors across the province of