

By [Paulo Sousa](#) and [Karolina Prochownik](#) We would like first to thank the ICCI team for the invitation to participate in the book club around Thom Scott-Phillips' *Speaking Our Minds*, where a new theory of the evolution of human language and communication is put forward. This is a fantastic book full of groundbreaking ideas, and we are pretty much persuaded by the proposal. We are not experts on the topic and in our commentary we shall focus on some aspects of the book that we thought could have been approached from a slightly different angle or could have been a bit more elaborated, without presuming that our concerns challenge the core tenets of the book in any respect.

Communication

Scott-Phillips characterizes communication as a type of interaction that involves actions and reactions that have functional interdependence, where the source of the function may be natural selection or human intentionality (SOM, 29–33). We couldn't avoid the feeling that this characterization is not specific enough. Take a physical fight between members of two species with attack-defense dispositions that evolved complementarily (e.g., in the context of a predator-prey relationship). All behavioral aspects of the fight seem to be communicative according to the above characterization, but it seems to us that only some aspects related to the transmission of information are communicative, and the above characterization does not seem to have the conceptual resources to specify the relevant aspects.

Scott-Phillips also uses the label "signal" instead of "action" in the above characterization, which may suggest a way of constraining the above characterization to include only actions that constitute signals or to refer only to the signaling aspects of actions. However, the meaning of the label "signal" in the context of the above characterization seems to be derived completely from the notion of functional interdependence (see SOM, 30, table 2.1), and other characterizations of "signal" given in the book do not seem to entail a more specific characterization either (SOM, 25–26). Scott-Phillips wants to prioritize the notion of functional interdependence and neglect the notion of information transfer in the characterization of communication (SOM, 32), but perhaps only with the inclusion of some element of information transfer in the characterization, can one avoid our apparent problem.

Ostensive communication

Sometimes Scott-Phillips explicitly emphasizes that the property of overtness in signaling is fundamental to the characterization of ostensive communication: "... ostensive-inferential communication can be glossed as intentionally overt communication" (SOM, 23); sometimes he is less explicit in this respect (SOM, 10–13). Perhaps this oscillation mirrors a slight inconsistency in the discussion. On the one hand, Scott-Phillips seems to argue that only with overtness there is the property of functional interdependence that characterises communication in the human context—e.g., when stating that, among various scenarios where Mary transmit to Peter the information that the berries are edible, there is human communication only when she overtly transmits the information (SOM, 66–67). On the other hand, he seems to suggest that overtness is not a fundamental condition for functional interdependence/communication in the human context—e.g., when classifying hidden authorship, which does not involve overtness, as a type of communication (SOM, 89, Table 4.1.). In our view, a more focused and detailed discussion of the notion of functional interdependence in the human context, dealing with questions such as whether and why overtness is (or is not) a fundamental condition for communication, is missing in the book.

Combinatorial communication

Scott-Phillips states that there are three types of routes to combinatorial communication (or to the creation of composite signals)—ritualization (from cues), sensory manipulation (from coercion), and

the direct route (from ostension). A substantial part of chapter 2 of the book is devoted to the discussion of combinatorial communication in natural codes in contrast with combinatorial communication in human language. The general idea is that combinatorial communication is poor in natural codes because it can only emerge by ritualization and sensory manipulation, while it is rich in conventional codes because it arises via the direct route of ostension. However, we think that the discussion actually conveys two different pictures about the existence of combinatorial communication in natural codes.

For the most part of the discussion, Scott-Phillips claims that one could find some real (though simple) cases of composite signals in natural codes, and that examples of comparable complexity may occur across very different species (e.g., pyow-hack calls in putty-nosed monkeys and combined molecules in the bacterium *Pseudomonas aeruginosa*). According to Scott-Phillips, this real but rare existence of composite signals in natural codes across species is to be explained by the fact that the emergence of composite signals via a process of ritualization or sensory manipulation has a quite low probability, and a probability that is independent of the variation in cognitive capacities across species:

The rarity of combinatorial communication in the natural world cannot be explained by cognitive differences between species, since bacteria have a very different 'cognitive' system to our own, yet they seem to have a communication system that, in terms of its combinatorial complexity is as close to human language as any other.

(SOM, 50)

However, in another short but relevant passage, Scott-Phillips suggests a different picture:

There is a sense in which natural codes like this bacterial one are not really combinatorial at all. After all, there is no "combining" going on. There is really just a third holistic signal, that happens to be comprised of the same pieces of existing holistic signals. The same seems to be true of the putty-nosed monkey calls: the most recent experimental results suggest that the putty-nosed monkeys interpret the 'combinatorial' pyow-hack calls in exactly this idiomatic way, rather than as the product of two component parts of meaning. In contrast, the ostensive creation of new composite signals is clearly combinatorial: although the meaning of the composite signal is not the exact sum of the meanings of the component parts, it is in part a function of those meanings (and the context).

(SOM, 50)

In other words, here the idea is that the processes of ritualization and sensory stimulation do not lead to a composite signal in any relevant sense, which would entail that in fact the only real route to combinatorial communication is the direct route of ostension.

In our view, the second picture, which was much less emphasized, implies a kind of explanation that is even more consistent with the overall thesis of the book that human language is qualitatively different from a natural code.

Communication in apes

There were two aspects of Scott-Phillips' discussion of communication in apes that we thought could have been more elaborated. The first aspect is related to a brief passage concerning attempts to teach apes some forms of non-vocal language: "(...) this approach had some success, in the sense that at least some of the apes developed competent command of communicative systems that have some, although certainly not all, of the distinctive features of human languages" (SOM, 80). It seems to us that a more detailed analysis of this acquired competence could have shed more light on the

debate concerning the communicative capacities of apes.

The second aspect concerns Scott-Phillips' main claim that natural codes in apes are quite flexible, and that this is due to apes' incipient metapsychological capacities: "What we appear to have, then, is a system made possible by mechanisms of association, and made expressively more powerful by the existence of metapsychological capacities, which allow a natural code to be used in a flexible way." (SOM, 93). Although the author devotes more space to this issue in the book, no vivid illustration of the flexibility in coded communication among apes is given; so, as non-experts on the topic, we couldn't grasp what exactly is involved in this flexibility. Moreover, although Scott-Phillips provides a detailed characterization of apes' incipient metapsychological capacities, he does not discuss in detail the casual connection between these capacities and flexibility in coded communication—we couldn't grasp what exactly is involved in a code being made expressively powerful by incipient metapsychological capacities. On the side of the interpreter, for instance, is it that the incipient's metapsychological capacities enhance some probabilistic decoding? Or is it perhaps that the incipient metapsychological capacities introduce some inferential ability utilized to interpret flexible but purely semiotic messages?

To conclude, we would like to reiterate that we don't take our points to undermine in any respect the great contribution of Thom Scott-Phillips' *Speaking Our Minds* to the debate on the evolution of language and communication. And we look forward to the further developments of his exciting research program.