

I chose to organise an ICCI book club around *Speaking Our Minds* because it is an exceptional book in more than one way. It ties together two research traditions—the pragmatic approach to linguistics and the Darwinian legacy in biology—that lie at the heart of our field. It does so in a perfect format—the book is a delight to read, and to teach. Yet a good Book Club book should be more than a good book: it should also stir up discussions.

*Speaking Our Minds* (SOM) is sure to do that: here is a book that claims to solve every major problem linked with the birth of human language! I won't be the only one who doubts that. I think that Thom Scott-Phillips' account of how human communication evolved leaves at least one key problem unsolved: How is communication stable in the face of free-riding and deception? In the two sections of SOM that he devotes to that issue (6.5.-6.6), and in his paper [On the correct application of animal signalling theory to human communication](#), Thom rejects the standard solutions to the problem. In the field of language evolution, these tend to come from signalling theory, and to involve the Handicap Principle. With some nuances, I share his grim view of the prospects of signalling theory. Yet his own solution is not just extremely sketchy, at times it verges on circularity.

Words are cheap: The Handicap Principle is a red herring

Let's start with one thing we all agree on: one family of explanations that work very well for biological signals in general cannot explain the stability of human communication. Here I dwell on Thom's opposition to Zahavi's much misused "Handicap Principle". At the principle's core is the idea that a signal's honesty may be stabilized by the costs involved in displaying it. The peacock's tail, for instance, is a wasteful ornament, so wasteful that the fact of growing it is an indicator of good health. Another popular example (indeed, handicap theory's poster child) is the springbok's pronking behaviour. Springboks, it is said, will jump and frolic in front of a predator simply as a way of advertising their athletic capacities: what springbok would be mad enough to nag a lion, unless it is extremely fast?

Thom cites the peacock's tail, but not the springbok example. I think that is not fortuitous: pronking springboks do not really obey the Handicap Principle as Thom sees it. In his view, the Handicap Principle involves signals that are costly to produce, and that is not the case of pronking. What makes pronking a handicap is its consequence: the risks the animal incurs by frolicking in front of a predator, wasting time and energy that it might need to run for its life. The cost of taking those risks is not paid when producing the pronking signal. It may be paid later when the lionesses chases after the springbok. The costs of pronking, in other words, are deterrents: they are penalties that a springbok would incur if it were signalling dishonestly. They lie in the future. In the peacock's case, in contrast, the costs are (in large part at least) paid by the peacock when it grows its tail, as a necessary aspect of producing it. In Thom's view, it seems that a genuine handicap must entail such production costs, and so he reserves the term "handicap" for these. This clarification is one of the book's most welcome contributions (more on this below).

Conspicuous consumption and the Handicap Principle

Thom (SOM, 6.5) has two points to make against handicap-principle explanations for the evolution of biological signals, when humans are concerned. First, he blames much of the literature for failing to understand that the Handicap Principle requires differential costs: a handicap must be "Free to those who can afford it, very expensive to those who can't" (SOM, 146). In that vein, Thom criticizes those who construe conspicuous consumption as an instantiation of the Handicap Principle, because conspicuous consumption implies costly purchases, but no differential cost:

« (...) if you can afford to spend money on objects like diamond rings and designer clothes, whose non-signalling functions could be equally well fulfilled by far less expensive purchases, you must be

wealthy indeed. (...) However, [this] is not a great example [of the Handicap Principle] because it is not, in fact, a handicap at all. This is because there are no differential costs involved. Put simply, jewellers do not have different prices for different customers (...). Conspicuous consumption is an index of wealth, not a handicap. »

(SOM, 148)

I beg to differ. Marginal utility theory teaches us that spending ten thousand dollars on a watch is indeed more expensive for us than it is for Bill Gates. The dollar that gets my fortune to grow to one hundred and one dollars is worth more than the one that makes it grow from one million to one million and one. The costs of a one dollar purchase are correspondingly lower for the very rich. Thus, conspicuous consumption is a true handicap: an expensive watch is a purchase that the rich can afford at a lesser opportunity cost than the poor, and it is, of course, causally associated with wealth.

Similar remarks could be made about some other examples mentioned in the book—deer calls, for instance. A deer call's pitch (or its formants distribution, but I'll keep things simple) reflects the caller's size: having a larynx of a given size produces a call with a certain pitch. Using Maynard-Smith and Harper's terminology, Thom calls this an index, that is to say, a signal that is reliable because it is physiologically impossible to fake it. In Thom's view, indexes cannot obey the Handicap Principle, because they involve no differential cost (unlike, say, the peacock's tail). Things are not so obvious to me. First, deep-pitch calls do have a physiological cost (the cost of growing a large body and giving out calls). Second, it is not completely unimaginable that a small deer might grow a big larynx, with terrible consequences for the deer's viability and fitness. So, rather than being impossible, the low-pitched call is immensely costly for small deers, virtually free for bigger ones. "Free to those who can afford it, very expensive to those who can't": the essence of differential cost. In this deer calls are no different from peacocks' tails.

(At this point, one might reply by citing Maynard-Smith and Harper, for whom a handicap must always include a "strategic cost" in addition to its "efficiency cost". In other words, a cost must be incurred over and above the cost of actually transmitting the relevant piece of information. Yet I think there are reasons to resist this view. First, because it makes little sense of cases like the peacock's tail: in a way the peacock pays exactly the cost that needs to be paid to advertise its own health—it is not being inefficient. Second, strategic costs jar with the "differential cost" principle—the view that handicaps should be "free to those who can afford it".)

Knowing a handicap from a deterrent

On the other hand, I fully endorse Thom's second point against signalling theory. SOM (147-150) does a fantastic job of pointing out the muddles that people fall into when they fail to distinguish handicap costs from deterrents. As Thom points out, handicap costs are "paid by honest signallers (...) as part of the very act of being honest", while deterrents are "paid by dishonest signallers when they deviate from honesty" (SOM, 148). The distinction matters when discussing evolutionary stability, because handicap-based signals are likely to prove more reliable than the ones whose costs derive from deterrence. The peacock's tail indicates health simply by virtue of its being there. The springbok's pronking, in contrast, proves little by itself, when performed in an empty savannah. It is a reliable signal of health only if (i) a predator is present, (ii) that predator is fast and hungry, (iii) the springbok knows this and (iv) the springbok is correct in its prediction that the lion can easily be outrun. If any of these conditions fail to obtain, the deterrents collapse, and so does honesty.

(Thom's discussion brought back quite a few memories of discussions with handicap aficionados who failed to see this crucial difference. In one such discussion (available online [here](#), [here](#), and [here](#)) a

group of behavioural ecologists argued that almost everything about diplomacy and international relations is based on the peacock's tail principle. They refused to see the difference between a nuclear test, which is costly to produce and hence a reliable indicator of military capacity, and a declaration made, say, in front of the United Nations, which might involve unpleasant consequences if one lies, but is nothing costly to utter and thus proves nothing by itself.)

To summarise, I have minor disagreements over two points of interpretation of the Handicap Principle: I think that the Handicap Principle might originally have meant to encompass deterrents (as the popularity of the pronking springbok suggests). I also think that differential costs are nothing special, and because of this I wouldn't restrict the scope of the Handicap Principle as narrowly as Thom does: Veblen's conspicuous consumption is a bona fide illustration of the Handicap Principle, and there is nothing deeply wrong in linking natural indexes (like the pitch of deer calls) to handicaps.

More importantly, though, I fully agree with Thom's main point: the Handicap Principle cannot help us understand the stability of human communication, because its proponents make a muddle of the distinction between handicaps and deterrents. The former kind of cost plays no role at all in making language reliable. Words are cheap—meaning that the cost of uttering them is (i) trivially low and (ii) unrelated to what the words signal. Handicap costs are not what makes human communication reliable. What does, then, must be some kind of deterrent.

Thom's solution: the reputational costs of deception

Having started on such an excellent footing, Thom's account essentially stops where it should start. Human communication is kept stable and reliable, in his view, because of the loss of reputation that deception would entail. On this, Thom's 2008 paper is slightly less elliptic than the book:

« Sufficient conditions for cost-free signalling in which reliability is ensured through deterrents are that signals be verified with relative ease (if they are not verifiable then individuals will not know who is and who is not worthy of future attention) and that costs be incurred when unreliable signalling is revealed. These conditions are fulfilled in the human case: individuals are able to remember the past behaviour of others in sufficient detail to make informed judgements about whether or not to engage in future interactions; and refusal to engage in such interactions produces costs for the excluded individual. (...) Moreover, this process would snowball once off the ground, as individuals would be able to exchange information - gossip - about whether others were reliable communication partners (Enquist & Leimar, 1993); and that exchange would itself be kept reliable by the very same mechanisms. »

(Scott-Phillips 2008)

This view, I think, takes too much for granted. We would need to know how humans came to have mutually beneficial interactions, on a regular basis, with individuals who could cheat them, but most of the time did not; how humans could reliably verify the validity of other's signals; how, when a signal seemed inaccurate, one could know that one was the victim of a deceptive informant (as opposed to an incompetent one). Of course, a proper answer to all these questions cannot involve communication, at least not in the first few steps; nor can it appeal to the kind of cooperation that communication makes possible.

From the few lines above it seems that Thom has in mind a scenario involving mechanisms of partner choice. Redouan Bshary's work on mutualistic cooperation among cleaning fishes (see one example [here](#)) could serve as an analogy. These fishes need to coordinate on mutually profitable cleaning operations (removing dead skin, parasites, and such like). They appear to memorise it when

one fish has assisted them longer and more efficiently than others in the past: they preferentially choose that fish for future joint ventures. Fishes who fail to cooperate optimally, for instance by giving up cleaning before they are expected to, are gradually pushed away from the pool of desired partners. One thing to say for this scenario is that it does not involve communication in any serious sense: memory of individual encounters, occasionally augmented by eavesdropping, does everything.

Yet our ancestors were not cleaning fishes. I mean that, before the rise of communication, nothing guarantees that they routinely recruited non-relatives for mutually profitable ventures. We cannot be sure, either, that failures to cooperate were visible to the public eye like they are in cleaning fishes. There is a bigger story to be told here, but it is not told in SOM. Suppose, however, that we skip this issue. Suppose that mutually beneficial cooperation and partner choice were well established before our story starts; could they explain the early stability of communication?

I am not sure. For a number of reasons, liars should be much harder to spot than cleaner fishes who free-ride on others' efforts. Useful communication is about things that are far from us, in space or time. Because of this, communication's accuracy can seldom be judged here and now, in front of numerous witnesses, like the failings of cleaner fishes. The consequences of a lie for its victims are typically delayed, and difficult to interpret. Suppose I told you that yonder tree is full of juicy apples, but you find out (moments later) that it only carries poisonous manchineel fruits. Can you call me a liar? Not before you make sure that (i) I was being malevolent, not just incompetent, (ii) you yourself are competent enough to tell an apple tree from a manchineel. Even if you succeed at steps (i) and (ii), the fact that I lied to you is not (unlike cheating in cleaning fishes) a public event that people can eavesdrop on. Thus, on the face of it, we should doubt the power of partner choice, individual memory, and eavesdropping, to prevent deception.

A more reliable alternative would be public reputation, established through communication between individuals. Thom clearly has it in mind in several parts of the book (e.g. when he cites Othello's Cassio); but the circularity of this solution is too obvious to stress. Public reputation is kept reliable by the very acts of communication that it is supposed to police. The messages that make up public reputation can, after all, be just as deceptive as any other kind of communication. They can arguably be even more so, since reputation is often diffuse, informal, and not assignable to one source in particular. If we solve the problem of reliable communication by assuming reliable public reputation, I doubt the buck can ever stop.

Until such questions are addressed, reputation will remain the *deus ex machina* that intervenes at the end of the play, to tie up the loose ends of the plot. What a good plot, though.

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