

Dessalles, J-L. (2011). Reasoning as a lie detection device (Commentary on Mercier & Sperber: 'Why do humans reason? Arguments for an argumentative theory'). *Behavioral and Brain Sciences*, 34 (2), 76-77.

Available at: [http://www.dessalles.fr/papers/Dessalles\\_10091501.pdf](http://www.dessalles.fr/papers/Dessalles_10091501.pdf)

### *Commentary on Mercier and Sperber*

ABSTRACT: 55 words  
MAIN TEXT: 924 words  
REFERENCES: 103 words  
ENTIRE TEXT: 1100 words

## **Reasoning as a lie detection device**

*Jean-Louis Dessalles*  
*Telecom ParisTech*  
*46 rue Barrault – F-75013 Paris – France*  
*Tel. +33145817529*  
*jl@dessalles.fr*  
*http://www.dessalles.fr*

### Abstract:

*The biological function of human reasoning abilities cannot be to improve shared knowledge. This is at best a side-effect. A more plausible function of argumentation, and thus of reasoning, is to advertise one's ability to detect lies and errors. Such selfish behavior is closer to what we should expect from a naturally selected competence.*

I fully support HM & DS's central claim that deliberative reasoning is a byproduct of argumentative competence. But if the function of reasoning is argumentation, what is the (biological) function of argumentation? According to HM & DS, argumentative reasoning improves "both in quantity and in epistemic quality the information humans are able to share", and thanks to it, "human communication is made more reliable and more potent".

If the biological function of reasoning is to achieve *shared knowledge optimization* (SKO), as suggested in the target article, then why do people show obvious limitations such as confirmation bias? HM & DS answer that information quality is optimized, not at the individual level, but at the group level. It would even be a good thing that individuals specialize on their (probably erroneous) line of reasoning, as long as argument exchange restores global information quality. The problem is that natural selection does not operate at the collective level. Shared knowledge belongs to the phenotype of no one.

How does the speaker benefit from uttering an argument? If the purpose is to correct or update her own earlier beliefs, why go public with it? And if it is to correct or update others' beliefs, what's her advantage? HM & DS explanation for the existence of deliberative reasoning does not escape the general evolutionary paradox of communication: if it benefits listeners only, there should be no speakers; and if it benefits speakers only (e.g. by allowing manipulation), there should be no listeners. Invoking collective benefits does not offer an escape route if we wish to remain on firm Darwinian ground.

To solve the paradox, we must depart from (SKO). My proposal (Dessalles, 1998) is that human-like reasoning started with logical *consistency checking* (CC), and that humans used it as a *lie detection* device (LD). As a response to the risk of appearing self-contradicting, the ability to *restore consistency* (RC) through argumentation emerged. In this game, information quality is not what is at stake. The point for individuals is to *advertise* (AD) their ability to perform or resist (LD). This advertisement behavior makes sense within a costly signaling model of human communication (Dessalles, 2007; 2008).

The main difference with HM & DS's position comes from (AD). HM & DS are close to the (CC/RC) distinction when they speak of *evaluation* vs. *production* (of arguments). They fail, however, to see that these two faculties did not evolve for the sake of any form of public knowledge, but as *signals*. Individuals who can publicly signal lies or errors by naming inconsistencies (CC) get immediate social benefit (Dessalles 2007). Those who publicly restore consistency (RC) get social benefit as well, or regain their momentarily lost status.

Contrary to (SKO), the competitive nature of (AD) explains why reasoning is far from remaining a private activity: argumentation takes up the major part of the 16 000 words spoken daily on average (Mehl *et al.*, 2007). Moreover, various observations by HM & DS make more sense within (AD) rather than (SKO), especially the fact that humans are better at finding inconsistencies in others' line of reasoning and at finding support for their own. Another argument in favor of (AD) is the futility of many conversational topics, which makes no sense from an (SKO) perspective. Yet another good example of the divergence between (AD) and (SKO) is offered by the BBS commentary system: commentators are of course concerned by the overall quality of scientific knowledge, but most of them are even more motivated by the urge to show their ability to point to some inconsistency in the target article. (SKO) would perhaps hold if contributors accepted that their name be omitted.

HM & DS strangely do not mention a fundamental common property between deliberative reasoning and argumentation. Both processes seem to consist in a *sequential* alternation between logical incompatibilities and attempts to resolve them. This property is concisely captured by the Conflict-Abduction-Negation procedure that describes argumentative processes (Dessalles, 2008). The sequential nature of argumentative reasoning supports the central claim of the target article, but it is at odds with any idea of knowledge optimization. Virtually all artificial reasoning devices (from chess players to planning programs) involve parallelism whenever possible (esp. in multi-option comparison). So-called Truth-maintenance systems and argumentation systems make use of graph representations that are *not* limited to sequential processing (e.g., Dung, 1995). In comparison, human argumentative reasoning is skewed. It is bound to start from a logical incompatibility, and then sequentially creeps forward through recursive attempts to solve the current incompatibility and then detect new ones. Such manifestly suboptimal procedure does not make sense if the aim is knowledge optimization. It makes perfect sense, however, in the (LD/AD) context.

The biological importance of informational capabilities is due to the particular political context of our species (Dessalles, 2007). In that context, information is not important as such; it is rather an excuse to show off informational capabilities, such as being the first to point to unexpected events. In the absence of a lie detection system, such communication is bound to checkable, almost immediate, events. The advent of consistency checking capabilities offered a new occasion for individuals to compete, by allowing them to advertise their lie and error detection capabilities. This new competition has side-effects, such as opening the possibility of communicating about past events that cannot be directly checked. Knowledge improvement also turns out to be a side-effect of reasoning and argumentation. When reasoning and producing arguments, speakers follow a more selfish agenda, which is to show off their competence for dealing with anomalies in information.

### **Additional references**

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