

Regret and justification as a link from argumentation to consequentialism

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Abstract: Mercier and Sperber (M&S) argue that reasoning has evolved primarily as an adjunct to persuasive communication rather than as a basis for consequential choice. Recent research on decision-related regret suggests that regret aversion and concomitant needs for justification may underpin a complementary mechanism that can, if appropriately deployed, convert M&S's facile arguer into an effective decision maker, with obvious evolutionary advantages.

Mercier and Sperber (M&S) make the provocative case that, in evolutionary terms, reasoning is better seen as an adjunct to communication than as a guide to decision making. However, since there are also evolutionary advantages to effective consequential choice, broadly interpreted, what might this ability be based on? We argue that emotional responses, specifically those associated with regret aversion and justification, may serve such a role, linking argument making of the sort described by M&S to consequential decision making.

In a continuing program of research, we have shown that regret aversion can help in overcoming decision errors. Much of this research draws on *decision justification theory* (Connolly & Zeelenberg 2002; Connolly et al. 1997), which distinguishes regret associated with a (comparatively) poor outcome (*outcome regret*) from that associated with the judgment that the focal decision was wrong or poorly made – that is, was “unjustified” (*self-blame* or *process regret*). Efforts to avoid regret of this latter sort facilitates improved decision processes (Reb & Connolly 2010), information search (Reb 2008) and task learning (Reb & Connolly 2009).

It also appears to reduce or eliminate reason-based decision errors, such as those discussed in M&S sections 5.2 and 5.3. For example, Connolly et al. (2010) compared the effects of external accountability and regret priming on the attraction (or *decoy*) effect, in which an option is seen as more desirable when it dominates an irrelevant decoy option. Replicating earlier studies (Simonson & Nye 1992; Slaughter et al. 2006), we showed that accountability (a demand to justify one's choice to others) exacerbated the attraction effect, consistent with M&S's argument. Regret priming, in contrast, with its demand to justify one's decision to oneself, eliminated the effect. It seems that making regret salient may have led to a more balanced use of reasoning whose goal was less to convince others and more to arrive at a choice that satisfies one's own values and standards.

Reb (2005) showed that regret priming also reduced or eliminated other “reason-based” effects such as the compromise effect (Simonson 1989), in which an option is more desirable when presented as a compromise, and the accept/reject effect (Shafir & Tversky 1992), in which the same option tends to be both rejected and selected. In all these reason-based choice effects, the justifying arguments do not withstand close scrutiny. They are simply “shallow but nice-sounding rationales” (Simonson 1989, p. 170) that might serve to convince an uncritical external audience but not one's thoughtful self. In contrast, regret priming did not reduce the most important attribute effect (Slovic 1975) where the justifying argument can reasonably be construed to both self and others as a legitimate tiebreaker between equally valued options (Reb 2005).

Regret priming appears to involve both motivational and attention-directing effects, which are sometimes quite subtle. For example, Reb and Connolly (2009) used unobtrusive priming of

either outcome or self-blame regret in a repeated decision task where feedback on outcomes of unchosen options was offered. Subjects primed for outcome regret rejected such feedback more often, learned more slowly, and ultimately performed less well than those primed for self-blame regret (thus falling victim to the *myopic regret aversion* trap: avoiding short-term regret led them to experience greater long-term regret). Both groups were motivated to avoid regret, but one did so by avoiding painful comparisons, the other by following a justifiable decision process.

In summary we find persuasive M&S's case that reasoning is primarily for persuasive argumentation rather than for effective consequential choice. Given the evolutionary advantages of the latter, however, it is plausible that other systems may have developed to support such choice processes. A growing body of evidence suggests that mechanisms of regret, regret avoidance, and justification can serve such a decision-improving role. Specifically, aversion of process regret may complement the fluent argument maker and tweak it to pay more balanced attention to and weighing of the pros and cons associated with a decision problem. Because of the anticipatory nature of regret, attention may further be directed to future consequences that are predicted to impact experienced regret. Mechanisms of regret and justification thus suggest important linkages between the argument-rich communicator sketched by M&S and the purposive consequentialist demanded by rational choice models of human decisions. We see such evidence as dovetailing neatly with, and modestly extending, the findings compiled in the target article. Perhaps ironically, as the central role of reasoning in assuring good choices has come increasingly into doubt in recent decision research, emotions, earlier seen as an obstacle to effective decision making, are increasingly being found to perform crucial functions in facilitating such decisions.

The freak in all of us: Logical truth seeking without argumentation

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Abstract: Mercier and Sperber (M&S) sketch a bleak picture of logical reasoning in classic, nonargumentative tasks. I argue that recent processing data indicate that despite people's poor performance they at least seek to adhere to traditional logical norms in these tasks. This implies that classic reasoning tasks are less artificial – and logical reasoning less exceptional – than M&S's framework suggests.

Mercier and Sperber (M&S) argue that the notoriously bad logical reasoning performance in classic reasoning and decision-making tasks can be attributed to the lack of argumentative context or interaction in these tasks. They point out that when the same problems are put in an argumentative context, people have little trouble solving them. From this they conclude that, except for a few “almost freakish” (sect. 6, para. 7) individuals, people will engage in a genuine logical reasoning process only when arguing. Clearly, this seems to question the validity of classic reasoning tasks: In these nonargumentative tasks, people will typically not do what they do in the real (argumentative) world. This impression is further strengthened by M&S's claim that it would be a mistake to treat as paradigmatic examples of human reasoning those few individuals who do exert control over their biases and manage to solve the classic reasoning tasks.

I want to point out that although M&S nicely demonstrate that providing an argumentative context can boost people's logical reasoning performance, this does not imply that people do not

already seek to reason logically in the absence of this context. It should be stressed that M&S's claims with respect to the poor performance in classic reasoning tasks are typically based on traditional studies that focused merely on accuracy data (i.e., the output of the reasoning process).

Recent studies that examined a wider range of processing measures such as latency or brain-activation data (e.g., Bonner & Newell 2010; De Neys et al. 2008) sketch a more optimistic picture of people's reasoning performance in the classic, nonargumentative tasks. These data suggest that although people very often fail to select the correct logical response, they at least seek to adhere to the logical norm. For example, although people typically fail to solve classic reasoning problems in which intuitive beliefs conflict with normative considerations, latency studies indicate that people do take longer to respond to these problems compared to problems in which the norms are not being violated (e.g., Bonner & Newell 2010; De Neys & Glumicic 2008). Problems in which cued intuitive beliefs conflict with logical considerations are also longer inspected and better recalled (e.g., Ball et al. 2006; De Neys & Glumicic 2008).

Neuroscientific research further suggests that brain areas involved in the detection of conflict between competing responses are activated when people err and violate a logical norm (e.g., De Neys et al. 2008; 2010). Clearly, if people were not at least engaged in some elementary logical processing and tried to adhere to the logical norm, it is hard to see why violating it would affect their inference process. In addition, De Neys and Franssens (2009) observed that after solving problems in which the intuitive believability and logical validity of a conclusion conflicted, reasoners showed an impaired access to words that were associated with the intuitive beliefs. Such an impaired memory access is considered a key marker of inhibitory processing. Even people who were always biased by their beliefs showed a minimal impairment, indicating that they had attempted to inhibit the intuitive beliefs but failed to complete the process. Once again, if people were not trying to adhere to the logical norm, there would be no reason for them to block the conflicting belief-based response.

The crucial point is that these studies suggest that even without an argumentative context people are already engaging in a logical reasoning process. What the "freakish" individuals who give the correct response seem to be better at is completing the inhibition of conflicting intuitive heuristic responses (De Neys & Franssens 2009; Houdé et al. 2000). However, the important finding in the studies cited is that all reasoners are at least engaging in this inhibition process and try to adhere to the logical norm. In that sense we're all freaks who seek logical truth when solving classic reasoning tasks. The bottom line is that this indicates that the standard tasks are less artificial – and logical reasoning in these tasks less exceptional – than M&S's framework might suggest.

In sum, M&S convincingly demonstrate that human reasoning can benefit from an argumentative context. By pointing to recent processing data, I tried to clarify that this does not necessarily imply that people simply fail to engage in a logical reasoning process in the absence of such a context. This should give pause for thought before drawing strong negative conclusions with respect to the validity of classic reasoning tasks or the illogical nature of people's reasoning in these tasks.

Reasoning as a lie detection device

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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 the central claim by Mercier & Sperber's (M&S) that deliberative reasoning is a by-product of argumentative competence. But if the function of reasoning is argumentation, what is the (biological) function of argumentation? According to (M&S), argumentative reasoning improves "both in quantity and in epistemic quality the information humans are able to share" (sect. 1.2, para. 9) and, thanks to it, "human communication is made more reliable and more potent" (sect. 6, para. 2).

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? M&S 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? M&S's 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 (for example, 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 humanlike reasoning started with logical *consistency checking* (CC), and that humans used it as a *lie detection* (LD) device. 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 M&S's position comes from AD. M&S 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) derive immediate social benefit (Dessalles 2007). Those who publicly restore consistency (RC) gain 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 M&S make more sense within AD rather than SKO, especially the fact that people 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 names be omitted.

M&S 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