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Have Mercier and Sperber untied the knot of human reasoning?

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ABSTRACT

Over the last decade, Hugo Mercier and Dan Sperber have elaborated an influential naturalistic account of human reasoning. Their distinctive hypothesis is that its adaptive rationale – and primary function – is to produce and assess reasons in interpersonal justification and argumentation. In this paper I argue, first, that their characterisation of reasoning as based on metarepresentations threatens to oversophisticate reasoning and faces the problem of vicious regress. Second, I argue that they owe us a coherent account of the cognitive role of reasons in reasoning.

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1. Introduction

According to Hugo Mercier and Dan Sperber (hereafter M&S), *reason* is a uniquely human capacity to produce or assess *reasons* for or against something. We exercise it whenever we argue or justify something or when we assess others' arguments or justifications.[1] At the proximate level, it recruits a cognitive skill to *metarepresent* something as a supporting reason for something else. M&S hypothesise that there is an *intuitive reason module* dedicated to inferring such metarepresentations. At the ultimate level, they hypothesise that reason evolved, via the standard process of natural selection, primarily to serve interpersonal argumentation and justification – practices which could have proved adaptive in hypersocial niches of our ancestors increasingly depending on cooperation and communication. They thus oppose the traditional, 'intellectualist' view that its *raison d'être* is to improve individual cognition or decisions. They do not deny that we make use of reason in individual

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[1]See especially Mercier and Sperber (2017). Compare also Mercier and Sperber (2009, 2011, 2012).

ratiocination or decision-making. But these are derivative uses. Indeed, drawing on considerable empirical evidence, M&S argue that reason performs rather sub-optimally when put to its individual uses, whereas it performs comparatively well in its social uses. In all, this evidence seems to favour the view that reason is primarily a tool for interaction.

M&S often adduce impressive empirical evidence for those intriguing claims. I am in sympathy with their big picture: namely that human reason is originally and primarily an adaptive social competence to justify or argue. I find their other main tenets somewhat less convincing: in particular, the claim that reason is an adaptation fine-tuned specifically by *natural* selection and the claim that it has a *modular* basis. But these concerns have already been elaborated by a number of commentators.[2] In this study, I am going to probe M&S's account from a different theoretical perspective. I first argue that, taken at face value, their characterisation of reasoning as involving metarepresentations of reason-conclusion relationships is vulnerable to two objections that resurface in the current philosophical debates about reasoning. It threatens to oversophisticate reasoning and invites the problem of vicious regress. Then I consider another strand in M&S's account, according to which reasoning involves intuitive reconstruction of reasons for something that we already accept or are tempted to accept or want others to accept. I point out that even if this account of reasoning might avoid the spectre of vicious regress, it still faces the oversophistication objection. More importantly, I argue that M&S owe us a coherent account of the cognitive role of reasons: in particular, what it could mean to say – as they do – that one can be 'convinced by reasons' to accept something.

2. M&S's metarepresentational account of reasoning

When I instantly recognise that my friend is being nervous, my judgment about her mood is formed in response to some input information – e.g. various cues supplied by her facial expression or behaviour. But I do not need to take account of that information *as* a *reason* for what I judge. Some subpersonal process transforms that input information into my output judgment, but I am oblivious thereof. M&S call such unreflective ways of expanding or updating available information 'intuitive inferences' (cf. Mercier and Sperber 2017, chapter 3). They submit that a large part of

[2]See the peer commentaries on M&S's target article (2011) in *Behavioral and Brain Sciences* (2011, 32 (2)). See also the critical reviews of Mercier and Sperber (2017) by Sterelny (2018), Dutilh Novaes (2018), Chater and Oaksford (2018).

our cognition and decision-making recruits such processes (by and large reliable), whose outputs (intuitive judgments or decisions) we consciously accept (with some metacognitive confidence) but not for conscious reasons.

Though our conscious thoughts and acts are underpinned by such unreflective processes, we have the cognitive wherewithal to reflect on them. In particular, we can consider reasons for or against something we accept, are tempted to accept, or merely entertain.

M&S distinguish four basic cases in which this capacity – which they basically equate with reason – is exercised. First, reasons can be considered prospectively as 'arguments in favour of new decisions or new beliefs' (Mercier and Sperber 2017, 128). This may be either an individual process (*inquisitive reasoning*) or a social process whose goal is to convince others of something that one already accepts (*argumentation*). M&S reserve the term 'reasoning (proper)' only for these cases, which they further distinguish from justification (and explanation), where reasons are considered *retrospectively* '[…] to explain or to justify decisions already taken and beliefs already held' (Mercier and Sperber 2017, 128). Unless I say explicitly otherwise, I hereafter discuss reasoning proper.[3]

Now, reasoning is officially characterised by M&S in the following way:

> When we reason, conclusions do not just pop up in our mind as self-evident; we arrive at them by considering reasons to accept them. (Mercier and Sperber 2017, 52)

What exactly does it take to 'consider reasons'? As M&S explicate it, when one arrives at a conclusion *Q* by considering some supporting reason *P*, one ends up with a *reflective* (*reasoned*) *conclusion*. Such a conclusion, furthermore, is said to be: '[…] accepted because of higher-order thinking (or "reflection") about it.' (Mercier and Sperber 2017, 150)

As for *higher-order thinking*, M&S claim that it involves entertaining a *conscious* representation of *P* as a reason for *Q*.[4] Call this representation *R*. Furthermore, many formulations of M&S suggest that in entertaining

[3]M&S are not quite consistent in this usage. They say, for instance, that when '[…] we already accept a given conclusion, we might still engage in *reasoning* in order to find reasons that justify our conclusion […]' (Mercier and Sperber 2017, 52). Here they use the term 'reasoning' in a broader sense: to refer to a process of searching for reasons. Note also that their taxonomy omits cases of evaluating reasons in interactive contexts of justification and argumentation – but these, according to M&S, are also uses of reasons, hence exercises of reason. And there is no analogue of individual inquisitive reasoning at the social level: a joint inquiry of sorts, where the interlocutors seek together an answer to a question with respect to which they are both open-minded.

[4]Reflection – attending to or considering reasons – is a conscious act or process. It is worth noting, though, that M&S think that such metarepresentations are typically outputs of intuitive inferential processes. This does not matter for my purposes here. I shall have something to say about this aspect of their view later.

R one quite literally represents the content to the effect that: *P* is a reason for *Q*, *P* supports *Q*, or some such thing. They do not say that one *treats P* as a reason for *Q*, where this might be just a matter of acting *as if* one consciously represented *P* as a reason for *Q*. They do not say that one just represents both *P* and *Q* and makes a transition from the former to the latter. Rather, what they say is that one must somehow represent the relation of support between *P* and *Q*. To wit: they say of such representations that

> […] their form is '*P* is a reason for *Q*' (for example, 'That Amy has a fever is a reason to call the doctor'). (Mercier and Sperber 2017, 148)

As M&S put it, *R*'s content concerns the *reason-conclusion relationship*, whose relata are (lower-order) representations themselves. Accordingly, *R* is a *metarepresentation*. On a natural reading of this, *R* has a propositional content in which something like the relational concept *x is a reason for y* is applied to *P* and *Q* as arguments.

3. The problem of oversophistication

My first challenge is that, taken at face value, this metarepresentational account oversophisticated reasoning. Presumably, if the reasoner needs to represent the reason-conclusion relationships as such, she needs to possess and apply the quite sophisticated concept *x is a reason for y* (or some cognates expressing support relations). But are there not smart creatures, e.g. young kids, capable of making, and appreciatively responding to, at least rudimentary reasoning (justifying or arguing) performances, who might not yet possess that concept (or cognates)?[5] If so, M&S's account seems too restrictive, because it cannot accommodate such cases.[6]

Admittedly, one might bite the bullet and say that such creatures do not reason, lacking the prerequisite reflective abilities. However, M&S do not want to say this about kids in particular (as opposed to non-human animals). In fact, they provide some evidence themselves that kids around their third year (or even earlier) manifest some nascent skills of argumentation or assessment thereof.[7] They refer to studies indicating

[5]Such objections have been formulated by a number of authors. Cf. Boghossian (2014), Broome (2013), McHugh and Way (2016). Their target was, for example, Pettit's metarepresentational account of reasoning (cf. Pettit 2007). See also Pettit's response (2016). I do not find this response convincing, but I do not have the space to argue this here.

[6]This particular challenge applies to both reasoning (prospective) and justification (retrospective), in so far as both involve representations of something as a reason for something.

[7]Cf. Mercier, Bernard, and Clément (2014), Mercier and Sperber (2017, chapter 16), Castelain, Bernard, and Mercier (2018).

that kids this young prefer non-circular reasoning (e.g. '*X* went this way because I saw it go in this direction') to circular reasoning ('*X* went his way because *X* went this direction'). Supposing now that this indeed indicates nascent reasoning abilities, do kids this young also possess the concept *x is a reason for y* (or its cognates), apparently required to metarepresent the reason-conclusion relationships? On M&S's own account they should – or they do not reason at all.

The problem is that M&S adduce no direct evidence of such abilities in kids this young. The evidence that kids prefer non-circular over circular arguments might indicate some understanding of the object-level connective 'because'. But it does not indicate any mastery of the concept *x is a reason for y* and the ability to apply it in higher-order thoughts. More generally, then, kids might have some practical competence with explanations or arguments involving other dialectical devices ('no', 'but', 'so', etc.), which play a role in expressing attitudes of rejection, challenge or inference. In so far as this competence indicates some sensitivity to rational connections between claims, it might be taken to indicate a capacity for reasoning. Yet, there is nothing obviously metarepresentational about such dialectical turns; on the face of them, they all belong to object-level discourse. So this early emerging competence reveals, at most, *implicit sensitivity to reasons* on kids' part that falls short of a full-blown understanding of them as such.[8]

Pending any independent evidence that young thinkers possess sophisticated concepts and representational abilities, there is a more parsimonious account of their early reasoning competence, consistent with M&S's view that it is originally a social competence, eventually internalised and co-opted for private-individual thinking. On this account, their reasoning competence co-develops hand-in-hand with their verbal-communicative competence and is primarily embodied in their dispositions to produce and respond to various dialectical moves in argumentative, explanatory or justificatory exchanges. No doubt, this already requires non-trivial cognitive abilities. But it does not specifically require the ability to conceptualise reasons *qua* reasons. Such an ability may be a later development

[8]One could argue that the ability to respond to requests for reasons with 'becausal' claims is sufficient evidence for the ability to entertain higher-order thoughts to the effect that *P* counts in favour of *Q*. Cf. Müller (2018). But why should it be? It seems perfectly possible that young thinkers can do this without being able to *express* any higher-order thoughts to the effect that something counts in favour of something else. Three-year-old kids might be a case in point. If they do not have such expressive resources, what warrants the attribution of higher-order thoughts to them? In so far as they have any understanding to the effect that *P counts in favour of Q*, it might be a form of practical *knowing how to treat* something as a reason for something else. They need not represent reasons as such. I am grateful to an anonymous referee for pressing me to address this argument.

towards a full-blown reflective competence but not a prerequisite of the reasoning competence as such.

4. The spectre of vicious regress

The way M&S characterise reasoning *prima facie* suggests that our taking account of reasons contributes to changing our view – adding beliefs, subtracting beliefs or both. So it is said to consist in prospectively considering reasons as 'arguments in favour of new decisions or new beliefs' (M&S, 128). We are also told that it is a process of pursuing the goal of extraction of new information from information already available *by* attending to reasons (Mercier and Sperber 2017, 53). And we are told that when we reason we arrive at a conclusion *by* considering the reasons to accept them (M&S, 52) and that we accept the conclusion *because* of higher-order thinking (or reflection) about them (M&S, 150). Indeed, this would seem to apply also to cases when we assess the reasons intended by others to convince us of something – here, too, we might end up believing something new.

I have explained that M&S explicate what it takes to consider reasons in terms of entertaining higher-order representations of reason-conclusion relationships. Putting this together, we seem to be left with the following account of reasoning:[9]

> Reasoning involves entertaining a conscious representation *R* to the effect that one's premises *P* support one's conclusion *Q* and arriving at the conclusion *Q* in part because of that fact.

Assuming for the time being that this is M&S's view, I will now argue that it faces a problem resurfacing in the ongoing philosophical debate about the nature of reasoning (or inference): namely, it is far from clear how *R* could contribute to concluding *Q* other than via expanding the premise-set of the original inference or being involved in a further piece of higher-order reasoning.

Consider this suggestion: one concludes *Q* in part because one accepts both *P and R,* expanding in effect the premise-set of the original inference. But this inference presumably requires another representation R^1: i.e. that *P together with R support Q*. What, now, is the role of R^1 in the inference from the expanded premise-set? As Lewis Carroll pointed out long ago

[9]This, I submit, can be interpreted as a possible elaboration of what Boghossian (2014, 5) calls 'the taking condition': *Reasoning* (*inferring) involves the thinker taking his premises to support his conclusion and drawing his conclusion because of that fact.* My concerns in this section are analogous to those that Boghossian and others have articulated with respect to several possible elaborations of the taking condition.

– and many contemporaries would concur with him on this score (Carroll 1895. Cf. Broome 2013; Boghossian 2014; Hlobil 2014; Valaris 2014; Wright 2014; McHugh and Way 2016) – a vicious regress lurks here.[10] The moral is well known, even well worn. Though we might iterate the process a few times, at some point there must be some inference (or piece of reasoning) that no longer requires yet another representation R^n. And this should give us pause: Why assume that concluding *Q* based on *P* requires a higher-order representation *R* in the first place?

It would be uncharitable, I think, to insinuate that M&S assign *R* the role of a further premise. In what other way can it contribute? One possibility is that *R* somehow *enables* concluding *Q* from *P*. But how? Perhaps *R* represents an inference ticket of sorts, licensing one to conclude *Q,* given *P*. We might think of this as a *rule of inference* that one consciously represents and accordingly applies to the premise *P* in order to obtain the conclusion *Q*. However, then the act of its application to *P* looks very much like another piece of reasoning. As Boghossian aptly puts it:

> On this Intentional construal of rule-following, then, my actively applying a rule can only be understood as a matter of my grasping what the rule requires, forming a view to the effect that its trigger conditions are satisfied, and drawing the conclusion that I must now perform the act required by its consequent. (Boghossian 2014, 13)

Does this piece of reasoning involving the rule require yet another representation of a higher-order rule? A version of the regress problem seems to re-enter through the backdoor.

It may be retorted that the process of rule-application is not a case of reasoning at all, but of something else altogether. Then the regress problem would not get off the ground. Maybe, but it is not clear why we should accept this, other than that it avoids the problem. The description provided above suggests quite an exemplary piece of person-level reasoning. And it begs the question to assert that it does not involve higher-order representations of the reason-conclusion relationships, and hence is not reasoning. For this is what is at stake. And one could argue that if we allow that such inferential processes need not involve higher-order representations of the reason-conclusion relationships, we should wonder why the original inference is supposed to involve them.[11]

[10]To propose that *R* has a conditional (object-level) content *If P, then Q* does not seem to circumvent this basic problem (though it helps with the problem of oversophistication).

[11]An anonymous referee suggested that M&S appear to endorse an information-processing account according to which the rule-like process of transforming the representation of the premises *P* into the representation of the conclusion *Q* is subpersonal and unconscious. But then the question is

One might also argue that the spectre of regress arises only for this *intentional* construal of rule-following: i.e. the rules being involved in reasoning as explicit objects of intentional attitudes. But there might be an alternative model of rule-following that avoids it, not presupposing that rules bear on reasoning in that way.[12]

There is, I think, something to be said for this idea. However, it is not M&S's strategy. As they characterise reasoning, one attends to or considers the reason-conclusion relationships by entertaining a conscious, higher-order representation typified by *R*. Plus, their characterisation implies that such a representation contributes to accepting the conclusion and that this is what distinguishes reflective conclusions from intuitive ones. Any view of this sort is *prima facie* vulnerable to a version of the problem discussed here: it is hard to see how such a representation can contribute if not by expanding the premise-set of the original inference or being involved in yet another, higher-order piece of reasoning.

What M&S do argue is that support relations must ultimately be *intuited*. And they suggest that this solves the problem of vicious regress. But what they address here is a slightly different conundrum (Mercier and Sperber 2017, 131–132). They note that the reason-conclusion relationship$_1$ represented in a piece of reasoning$_1$ can itself be inferred via a further piece of reasoning$_2$ involving a representation of a yet higher-order reason-conclusion relationship$_2$, whose conclusion is the reason-conclusion relationship$_1$. At some point, though, this process must stop, or reasoning would never get off the ground. In such cases, we *intuitively see* that something is a reason for something else, where the unreflective inferential process generating that intuition does not involve any other representation of reasons. However, this line of thinking presumes that some kind of representation of support relations is involved whenever we reason! And the original regress problem targets this very presumption. Even supposing that such representations are, in the last instance, intuitively formed, we still face the question of how they contribute to

what (if anything) the conscious metarepresentation *R* of the reason-conclusion relation contributes to this subpersonal process. I address this issue in the next section. Here I proceed on the assumption that, taken at face value, M&S`s official account of reasoning implies a substantial causal-explanatory role of *R* in the inferential passage from *P* to *Q*. My point in this section is that it is far from clear that this can be explained in terms of intentional, person-level rule-application.

[12]Two recent attempts are Broome's dispositional model of rule-following (Broome 2013) and Boghossian's suggestion that rule-following is a *sui generis* primitive phenomenon (Boghossian 2014). Brandom (1994) provides another alternative: namely, inferences are governed by norms of good inference (reason) that are primarily implicit. Wright (2014) and Valaris (2018) critique the rule-following models of inference.

concluding something from something else if not via further reasoning. We have no answer to this yet.[13]

5. The problem of the cognitive role of reasons in reasoning

So far I have proceeded on the assumption that M&S characterise reasoning as a process of pursuing the goal of extracting new information by (via, through) attending to reasons. That said, M&S's characterisation may be a bit misleading and their view more nuanced. For other things they say suggest that reasoning involves *intuitive reconstruction of reasons* for something that we already accept or are tempted to accept. If this is M&S's considered view, it warrants a separate discussion.

For the two basic interactive uses of reasons, this suggestion makes good sense. When we *justify* our view (action), we construct reasons 'after the fact' in order to justify it (as well as ourselves as its holders) as reasonable. So we do not believe *Q because* we now conclude it is based on *P*, still less *because* we represent *P* as a good enough reason to accept *Q*. *Q* sits already in our 'belief box' as it were. The same is true when we *argue* to convince others to accept something that we already believe, supplying supporting considerations to this end. Actually, argumentation has an element of justification in it: as we attempt to justify our view, we at the same time attempt to convert others to accept it as true as well. Here, too, we do not hold our view *because* we now conclude it from the reason provided by ourselves or *because* we represent it as a reason to accept or believe it.

This is quite a revealing recapitulation:

> […] we typically construct our reasons after having reached the conclusions they support. (Mercier and Sperber 2017, 138)

> What we do […] is derive reasons for our intuitions from these intuitions themselves by a further process of intuitive backward inference […] We typically construct our reasons as an after-the-fact justification. (Mercier and Sperber 2017, 142)

There are three claims here. First, justificatory uses of reasons are the most typical uses. Second, reasons are constructed 'after the fact'. Third, their

[13]There are attempts to avoid the problem by postulating *rational intuitions* of sorts – cf. Chudnoff (2014). But as these have a rather different structure, I shall not address them. An alternative could be to say that entertaining such a representation is just *constitutive of reasoning* and hence that there is no need for an extra contribution. Again, however, there is no hint that M&S think along these lines and so I shall not address it.

construction or reconstruction is (or typically is) a matter of intuitive backward inference.

What about the other uses of reasons that, according to M&S, are derivative: internalised individual justification, evaluating reasons provided by others or individual inquisitive reasoning? Can the model that fits the paradigmatic uses be extended to them? To flesh out this suggestion, let us consider them case by case.

First, the model straightforwardly applies to the case of individual justification, which privately mimics the structure of interpersonal justification (we often search for reasons that could eventually justify our views or actions to relevant others).

Second, what about the cases when we assess reasons meant to convince us? Don't we sometimes make up or change our minds on some issue at hand based on evaluating the reasons provided by others? Intuitively, it seems so. But maybe intuition is not quite a reliable guide here and a version of the model under consideration applies here too. Here is what M&S have most recently suggested:

> […] in the kind of elementary case we are considering, *A comes to see the reasons given to her as strong because she was convinced by them* or as weak because she was not. This stands in stark contrast with the standard view of reason, according to which epistemic judgement on reasons should precede and determine cognitive effects such as acceptance or rejection of the conclusion. (Mercier and Sperber 2018, 6)

So epistemic judgments on reasons – which, according to M&S, are themselves produced by backward intuitive inferences – do not determine cognitive effects such as acceptance or rejection of a conclusion. There is the following analogy with retrospective reasoning. First, certain considerations *P* (here provided by the arguer) succeed to convince us to also accept *Q*. Then, based on the level of our resulting (metacognitive) confidence in *Q*, we intuitively infer that *P* is a good enough reason to accept *Q*, thereby sort of rationalising our belief in it. We can then say that *Q* is our reflective conclusion-belief. Yet it is not *because* we see *P* as a good reason for *Q* that we hold *Q* (it might have a reassuring effect though).

Third, what happens when we conduct an internal argumentative dialogue (perhaps with imaginary others or, perhaps, ourselves playing both roles) in situations in which there is something at issue (*Q*?) and we are open-minded as to what stand to take? This is a form of prospective individual reasoning, which is an internalised version of the public argumentative dialogues. But even here, I imagine, one could analogously argue

that we might eventually come to accept *Q* not *because* of taking into account the fact that *P* is a good reason for *Q*, but because those reasons *P* somehow *convince* us to place some confidence in *Q*. Based on this confidence, then, we use a backward intuitive inference to construct *P* as a good enough reason for *Q*. In this sense, *Q* can be said to be our reflective conclusion.

Finally, there is pure inquisitive reasoning, in which we address the issue on our own without taking into account what reasons could convince others. This, according to M&S, is a flagship of the traditional, intellectualist account of reason. However, they tend to dismiss or downplay such cases on the ground that they are marginal (plus, much of what theorists consider to be cases of inquisitive reasoning might be just 'problem-solving' that need not involve attention to reasons at all). After all, reason was not designed for individual ratiocination but for interpersonal reasoning. Still, to the extent that there *are* cases of individual ratiocination (and M&S do not deny this), they should say something about them. Perhaps they could try to extend the model to cover them as follows. When addressing on our own the issue of whether *Q*, we try out several considerations that we find more or less appealing, eventually (possibly quickly) ending up with the considerations *P* that sway or convince us to accept *Q*. Only when we already accept *Q* with some confidence, we intuitively infer that *P* is a good reason for *Q*. Then, again, we can be said to uphold *Q* as a reflective conclusion. But even if we somehow base *Q* on *P*, we do not uphold *Q because* of that metarepresentation.

If this interpretation is on the right track, then one may argue that no vicious regress arises for prospective reasoning, since one does not arrive at *Q* from *P* via linking metarepresentations of the reason-conclusion relationships in the first place.[14]

But note that this account still faces the problem of oversophistication. For it does not dispense with higher-order thoughts; it just does not claim that they are required to fix or update beliefs.

Putting this to one side, my main concern is that it is not clear to me how exactly to understand the process of being 'convinced' or 'swayed' by the reasons *P* to accept *Q*. This is the core of the strategy applied to evaluative and inquisitive reasoning: epistemic judgments on reasons are produced after the fact, by a backward intuitive inference reflecting the measure of our metacognitive confidence in *Q*, which was already produced through our being convinced by the reasons *P*. Presumably, the

[14]See Koziolek (2017) and Richard (forthcoming) for accounts of reasoning that are similar in this respect.

latter is not a reflective process. The whole point of this strategy is to ensure that reflective judgement comes after the fact. So it should be an intuitive process. Well, but then *P* should not figure in it explicitly *qua* a reason for *Q*. *Ex definitione*, when one intuitively infers *Q* from *P*, one does so without representing *P* as a reason for *Q*. However, if X can accept *Q* based on *P* without representing *P* as a reason for *Q*, one wonders what warrants the talk of being convinced 'by reasons', if not the assumption that *P* must be somehow *implicitly* treated by X as a reason for *Q* (without being explicitly represented as such).[15]

However, this line is not open to M&S, who explicitly oppose the view that reasons can be only *implicitly* registered in reasoning (Mercier and Sperber 2017, 118). Indeed, once one takes this line, it makes good sense to treat as *reasoning* activities involving some form of metacognition, but not yet representations of reasons qua reasons. Sensitivity to reasons may first be manifested in the practical mastery of dialectical moves (claiming, justifying, querying, challenging, etc.) that falls short of a full-blown metarepresentation. I submit that this is an option worth taking seriously in light of the previously discussed problem of oversophistication of reasoning.

One way or another, according to the alternative account of reasoning under consideration here, we take account of reasons after the fact. On the one hand, this account might avoid the original problem of vicious regress discussed previously. On the other hand, it seems hard-pressed to account for the intuitive difference between forming beliefs for reasons and being caused to believe something by unreflective inferences. If metarepresentations of reasons are add-ons formed after the fact, reasons come too late to underwrite genuine cognitive difference between the two cases.

6. Conclusion

M&S's hypothesis that human reason is designed for interpersonal justification and argumentation strikes me as plausible. But I have argued here

[15]If M&S mean that the representation of *P* just causes the representation of *Q* in the way typical for object-level, intuitive inferences, it is not clear why they talk about 'reasons', given that their own notion of *reason* is metacognitive: reasons have a psychological reality only by being consciously, explicitly represented as such. Plus, it does not sit well with other things they say. Commenting on the evaluative case, they say that the '[…] information communicated as reasons comes with a specific presumption of relevance: it is intended to achieve relevance by supporting the conclusion that the communicator asserted or implicated […]' and is interpreted accordingly by the addressee (Mercier and Sperber 2018, 6). When the information – communicated and interpreted *as reasons* – convinces the addressee, she infers the strength of reasons based on her confidence. To my ear, this suggests more than just a causal relation between the representation of *P* and the conclusion *Q*.

that their meta-representational account of reasoning is more problematic than they acknowledge. Reasoning might require some form of sensitivity to rational links between claims or beliefs. But metarepresentation might not be its *foundation*, even though it might be a crucial ingredient of a full-blown reasoning capacity. And we have yet to see a coherent account of reasoning that overcomes *prima facie* philosophical objections.

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