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ARTICLE

What is the Function of Reasoning? On Mercier and Sperber's *Argumentative and Justificatory Theories*

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Abstract
This paper aims to accessibly present, and then critique, Hugo Mercier and Dan Sperber's recent proposals for the evolutionary function of human reasoning. I take a critical look at the main source of experimental evidence that they claim as support for their view, namely the confirmation or "myside" bias in reasoning. I object that Mercier and Sperber did not adequately argue for a claim that their case rests on, namely that it is evolutionarily advantageous for you to get other people to believe whatever you antecedently believe. And I give my own argument that this claim is false. I also critically look at their suggestion that reasoning has a justificatory function, functioning as a kind of reputation management tool. I argue this suggestion does not amount to a plausible evolutionary function.

Keywords: evolutionary function; human reasoning; Mercier and Sperber; myside bias

1. Introduction

One of the most amazing things about our incredibly lucky lives is that we have the ability to think and to talk. What's amazing about it is the way we can think and talk that no other creatures can. Dogs and cats, octopuses and crows also do things we sometimes call "reasoning" and "communicating", but they can't reason and talk in all the ways that we do. Our reasoning can be open-ended: we can get thinking, on a given problem or without any specific question in mind, and without knowing which conclusions our minds will be led to. Our talk can be free-ranging: we can talk about anything, and we can talk without any antecedent specific purpose explicitly in mind. How do we do this, and – our question here – why do we do this?

At first it might seem that it is obvious, or that it *must be* obvious, what good purposes are served by these higher powers humans possess. But the closer we look, the more enigmatic these practices seem. Why did these powers evolve only in humans, and why do they have the many systematic quirks we find as we learn more and more about human psychology?

In their book, *The Enigma of Reason*, Hugo Mercier and Dan Sperber (2017) justify their well-chosen title, showing how perplexing human reasoning and its evolutionary function really are. In the book and also in a prior series of papers, they also develop and defend a positive theory of the function of human reasoning. On their theory,

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reasoning evolved to serve some very unobvious but valuable functions. They propose reasoning has two functions. To put it roughly and very briefly for now, the functions of human reasoning are: (1) to help us communicate, and also (2) to help us justify our beliefs to each other. The first view they name *the Argumentative Theory*; the second view we can name *the Justificatory Theory*. As the first view indicates, the amazing human powers of reasoning and communicating are closely connected.

The question that Mercier and Sperber (henceforth "M&S") have tried to answer – what is the function of human reasoning? – is exciting and important. Before their work, this question wasn't given the attention it deserves. The answers they propose are extremely original and have huge implications if true, and the defense they give expertly draws from a rich and fascinating range of empirical psychology. I also have to mention that their book, *The Enigma of Reason* (henceforth "ER"), is one of the most engagingly written academic books I've ever read.

In this paper my first aim is to get a clearer and fuller understanding of the fundamentals of their proposed view, a better understanding than you'd automatically get just from reading their book and papers, and my second aim is, of course, to then critically examine these two proposals for the function of human reasoning. I intend for this paper, if I'm successful, to be useful both to people already very familiar with M&S's work and to people totally unfamiliar with it. My treatment will be critical, but the spirit is that of asking questions, questions that, for all I can be certain, M&S and their defenders might develop answers to, though I don't find the answers in existing work, and I myself believe – for whatever my opinion's worth to you – that there aren't any answers. But let me officially state my conclusion cautiously, as follows: the proposal that M&S give of the function(s) of reasoning amounts to an *incomplete* explanation as it stands. (And I still think the book is fantastic! Gilbert Harman says in his blurb for the dust jacket, "The best thing I have read about human reasoning", which sounds laughably overblown at first, but after studying the book I've come to think that's probably right. It's the best thing written, or at least since Harman's own *Change in View* from 1986.)

To pursue my first aim, I'll try to put together a plain and clear way to present the basic form of their views and to present the basic form of the support M&S allege for it, and to do this, I'll omit most of the details of the empirical studies that M&S spend much of their time claiming as support. Abstracting from details and focusing in on just the basic form of the view will, I hope, put us in a good position to evaluate the *mere possibility* of the view's being correct. I'll proceed to raise some philosophical questions – questions that assume no empirical knowledge beyond "armchair" knowledge – about whether the sorts of considerations M&S offer as support really can support the proposed sort of theory.

2. M&S's terminology

M&S aim to answer the question: what is the function of reasoning? They use these key terms, "function" and "reasoning", with very specific definitions.

They tell us they use "function" in its "biological sense". They say "a function of a trait is an effect of that trait that causally explains its having evolved and persisted in a population".[1] This evolutionary sort of view of functions is familiar to philosophers thanks to Millikan (1984: Ch. 1) and Neander (1991). It will be useful to think of, and refer to, the "effect" (that M&S speak of in that quote) of a trait as the *evolutionary benefit* it brings. Functions then are evolutionary benefits, on this shorthand.

[1]See Mercier and Sperber (2011), "Why Do Humans Reason?", henceforth WDHR; see also ER, pp. 176–8.

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What do M&S mean by "reasoning"? The ordinary term "reasoning" is vague and ambiguous, and M&S say a lot to clarify their intended more specific meaning.[2] Using "reasoning" now as M&S do, we'll be using it as an explicitly defined theoretical term, though one that's closely related, maybe identical, to one ordinary sense of the term. On M&S's usage, reasoning is a narrow sub-species of belief-formation. M&S use "inference" to refer to the much larger category that includes any process by which we form new representational states on the basis of others (including even what philosophers call the "non-inferential" formation of perceptual beliefs on the basis of perceptual experiences[3]). In the much narrower category of reasoning, we not only form a new belief on the basis of other representational states, but we also represent to ourselves a "reason" for the belief. (This closely relates to what some psychologists call System or Type 2 thinking, but M&S don't rely on the so-called dual-process model's details.[4]) Since this will be important, let's indent it:

> "Reasoning", as M&S define it, is the process of forming a belief *while also representing to yourself a reason* for the new belief.

Okay, so what is a "reason", then? In contemporary philosophy, we standardly distinguish different kinds of reasons using the terminology of *motivating reasons* and *normative reasons* (e.g. Alvarez 2017). A motivating reason is a *cause* of the thing it's a reason for. A normative reason is, whether or not it caused it, a *good* reason for the thing it's a reason for; it's a consideration that genuinely favors the thing it's a reason for. Though M&S don't explicitly present their view using those terms, nevertheless from what they do say we can infer, and put in our own preferred terms, what they mean when they talk about these reasons they say we represent in reasoning. The reasons that M&S talk about are not our motivating reasons, because these reasons may not be the actual causes of anything; we confabulate many of the reasons that M&S are concerned with, that is, we unknowingly make up after-the-fact rationalizations.[5] But M&S's reasons also are not always normative reasons, because many of them are not genuinely good reasons for anything.[6] So, what are M&S's reasons? They are, I suggest, *advertised normative reasons*; that is, they are considerations we represent to ourselves, and to others, *as* good reasons, though they may or may not actually be good reasons, i.e. normative reasons.[7]

I chose the word "advertised" because I think it helpfully highlights a core idea of M&S's theory. Why do humans reason? What purpose or function do we serve by

[2]ER, p. 53; also see much of parts II and III, especially Chapters 3, 6, 7 and 9 of ER, and pp. 57–9 of WDHR.

[3]WDHR, p. 57.

[4]ER, pp. 43–8.

[5]ER, pp. 109, 112, 124, 138–42.

[6]ER, p. 143.

[7]ER, pp. 111–12, 142–3. M&S do talk of "objective reasons" (ER, p. 111), and these seem to be what philosophers call normative reasons, but M&S contrast these only with what they call "psychological reasons", which are *not* philosophers' motivating reasons. They say psychological reasons are representations (or misrepresentations) of objective reasons. M&S say: "Psychological reasons are mental representations in the brain and, as such, play a causal role in people's lives. (When we use "reasons" without qualifying the term, we are talking about psychological reasons.) // It is generally thought that the main role psychological reasons play is to motivate and guide people's actions and beliefs (guidance being little more than a fine-grained form of motivation and motivation a coarse-grained form of guidance). We disagree. The main role of reasons is not to motivate or guide us in reaching conclusions but to explain and justify after the fact the conclusions we have reached" (ER, p. 112).

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reasoning? At a fairly abstract level, the form of the answer M&S offer is that, by reasoning, and thus by representing certain considerations to ourselves as normative reasons, we are able to *publicize* those considerations. This helps put us in a position to see how reasoning, so understood, might plausibly have the two more specific functions M&S propose.

3. The Argumentative Theory of reasoning's function

The first proposed function is their more famous idea, the theory of reasoning they named the "Argumentative Theory", and defend in all their writings on the topic. (The second function, which I'll address later, is added only in their recent book, ER.)

Given what we've seen M&S mean by "reasoning" and "reasons", it's easy to see that they'll propose that reasoning's social role gives it its function. Somehow, by conjuring up and advertising to others reasons for our beliefs, we thereby serve some function. So, what is the function of this social activity?

The Argumentative Theory says the function is to help us *communicate*. So, how's reasoning help us do that? What's the problem, and how is reasoning a solution?

M&S say we face a problem or, as they call it, a challenge, the "challenge of communication".[8] The kind of challenge here, they say, is one of securing cooperation. Cooperation, as ordinarily characterized, is a relation between a pair (or larger group) of people that benefits them both, but to secure the cooperation the pair needs to find a way to overcome certain obstacles to their cooperation. So, to understand M&S's theory, we need to understand: how is communication a form of cooperation, and in particular how does it face and overcome the kinds of obstacles that characteristically obstruct cooperation? There's surely a lot of intuitiveness to the idea that communication is a cooperative activity: communication benefits each of us tremendously, and it's an activity that's vulnerable to breakdown. But how exactly is it the *function* of *reasoning* to overcome the challenge of communication? How does reasoning help us communicate? How, that is, can we connect reasoning with the challenges to, and the benefits of, communication in a way that can explain reasoning's emergence and persistence?[9]

In order to understand this, we'll need to always keep in mind a distinction (one that M&S are very sensitive to, though my criticisms below will argue they should have been even more sensitive to it). Viewed at a fine-grained level, communication, and the public advertisement of a reason generated by reasoning, is an asymmetric relationship: in an *instance* of communication, one person gives testimony, perhaps with some advertised reasons, to another. Let's distinguish these roles with the names 'Sender' and 'Hearer'. Communication requires willing participation from both parties, so to explain its evolution, we need to explain both how Sender gets a benefit, and how Hearer gets a benefit. M&S need to, and they do aim to, indicate how we can answer both of these important questions.

The potential benefit to Hearer, fairly obviously, is getting more information, more true beliefs, than they otherwise had or could have had. The potential benefit to Sender is the more interesting one. Sender's benefit is the ability to influence, to partially control, what Hearer knows or thinks, and thus what information Hearer acts on. These are the benefits M&S see as enjoyed by each party when communication takes place.

Cooperation is ordinarily characterized by the social enjoyment of benefits *when some obstacle is overcome*. So what's the obstacle here? The obstacle is a psychological mechanism that M&S, in collaborative work with several other researchers, named *epistemic vigilance*. This refers to a suite of mechanisms that they argue evolved in human

[8]ER, p. 187.

[9]What follows interprets pp. 8–9, 180–95, and much of Ch. 10 of ER, as well as WDHR.

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psychology for the good purpose of protecting us, in our role as Hearer, from the dangers of accepting false testimony. As Hearers, though we can benefit from communication of true information, we face the risk of gullibly buying false, harmful testimony. We protect ourselves against that risk through epistemic vigilance. Some examples of the mechanisms of such vigilance include things like checking the internal coherence of the testimony, or considering the reputation or track-record of the testifier. But, epistemic vigilance, though it can do us good, can also be bad for us. And that is how epistemic vigilance is the obstacle to cooperation; it is the "challenge of communication". The problem is that sometimes these mechanisms of epistemic vigilance work too well by blocking a potential case of beneficial communication. Sender has something to communicate that it would be beneficial to get across (beneficial at least to Sender, but maybe to both). But Hearer's epistemic vigilance prevents the communication from taking place, at least if Sender doesn't do something more.

The argumentative function of reasoning, now, is to overcome this obstacle, to solve this challenge. To overcome Hearer's natural vigilance and get such beneficial communication to take place when it otherwise wouldn't, Sender can give reasons for their testimony. This is how reasoning, the generation of reasons we can publicize, helps make beneficial communication happen. That's the basic idea of the function of reasoning on the Argumentative Theory.

4. The main support M&S claim for the Argumentative Theory

M&S claim that findings from empirical psychology support the theory. The single biggest finding they lean on (see, e.g., the abstract and keywords of WDHR, or p. 9 and Ch. 11 of ER) is what's known as the *confirmation bias* or, a name less common but the one M&S have come to prefer, the "myside" bias.

The myside bias (as I'll also call it) is a natural strong tendency we each have, in reasoning, to come up with reasons that support our own pre-existing beliefs. It's one of the most widely documented findings in cognitive psychology.[10] It's viewed as the explanation of important phenomena such as belief perseverance and belief polarization.[11]

M&S claim support for their Argumentative Theory by claiming that it explains why human reasoning has a myside bias.[12] How is the myside bias supposed to explain and thus support the Argumentative Theory? Their idea is that Sender uses reasoning to come up with reasons for what they want to get Hearer to believe. *What Sender wants Hearer to believe, though, is not the truth, but Sender's own position.* As they say right at the start of their major first paper: "Skilled arguers, however, are not after the truth but after arguments supporting their views. This explains the notorious confirmation bias." (WDHR, abstract; they switched to preferring "myside bias" in later work.) If they are right here, this is indeed not only strong support for their view, but a much desired explanation of a very puzzling psychological quirk of human reasoning.

To begin my critical questioning of M&S's view now, I want to ask how this alleged explanation of the myside bias makes sense.

5. How would the myside bias benefit Senders*?*

If the function of reasoning is to make actual some otherwise merely possible beneficial acts of communication, we should be able to say who it benefits and exactly how so.

[10]ER, pp. 214–15.

[11]ER, Chs. 13–15.

[12]ER, pp. 11, 216, 222ff.

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Since Sender is the one giving the reasons, it would seem most natural for it to benefit them. (Natural, but perhaps not necessary, if reasoning is purely altruistic. But that seems unlikely, and it isn't M&S's view.) To be clear, communication, a highly cooperative practice, in general benefits both Sender and Hearer; but what seems to benefit only Sender is the use of reasoning to come up with reasons for a view, at least if the Argumentative theory is right. (Hearer must accurately *evaluate* whether a given advertised reason is in fact a normative reason, and we could also call this an exercise of "reasoning", but it is not the use of reasoning to *generate* reasons, which is what we're concerned with here. As M&S argue, Hearer's evaluations must be, and are, *unbiased* (ER, p. 231ff.).[13]) My question, then, is: *how* does coming up with advertisable reasons, by reasoning, benefit Sender?

There are some good ideas behind the Argumentative Theory, especially the basic idea of connecting reasoning and communication. If we ask: How does communication benefit Sender in any normal case? Or if we ask: How does it benefit *me* to let *you* know something? We can answer: Well, knowledge, or even mere true belief, is a public good; the more stuff everyone else knows, the better off I tend to end up. So, it's not so mysterious how Sender benefits from sharing *truths* in communication, and if reasoning somehow helps us do that, that would make sense.

Here's what I don't understand, though. How does it help Sender *to have a myside bias generating the beliefs they're communicating?* Ask yourself: what good would it do *me* to make *you* believe what *I* believe? I can certainly understand that it would be beneficial to Sender to be able to *manipulate* Hearer, to make Hearer believe what Sender *wants* Hearer to believe (as M&S observe[14]). But that is *not* what M&S have made any claim to be able to explain. The myside bias does not make Sender better able to manipulate Hearer as Sender wishes; it only makes Sender better able to make Hearer believe whatever Sender happens to antecedently believe, true or false.[15] So, if M&S want the Argumentative Theory to explain the myside bias, we need to somehow understand how it does Sender any good to make Hearer believe as Sender does. But it's not obvious why that should be, on the whole, a beneficial thing for Sender to do. If I get you to adopt my own views about, say, how to obtain some nutritious food, will that lead you to help produce or make available more of this food for everyone, or will it leave me with less food for myself and worse off than if I'd kept my views secret? Evocative cases can be imagined that go in either direction, but which cases are really representative? Without a general argument in favor of the benefits of sharing our views, I don't see the support for M&S's claim that the myside bias is advantageous to Sender.

I hope I've already made the basic problem intuitive. I think the problem can be pushed further. Let me now try to argue that, in general, the myside bias cannot be

[13]David Henderson raised an excellent question here. M&S say that Hearer's vigilance mainly consists in, as I mentioned above, things like checking the internal coherence of the testimony, or considering the reputation or track-record of the testifier (ER, pp. 191–5). Henderson's question is: wouldn't it be an excellent strategy for Hearer to cast about and try to *generate* any possible reasons there may be for the contrary of Speaker's testimony? The Argumentative Theory, though, would not be well designed to explain such reasoning here on Hearer's part, uninfected by the myside bias as it would be. I don't know what M&S would say about this, though they may emphasize the advantages to Hearer of taking the lazier way of being vigilant, if it is not too costly.

[14]ER, pp. 188–9.

[15]M&S do emphasize that it is not their view that reasoning is "just" a device for manipulating and deceiving others (ER, p. 331). But my criticism here is focused on asking: how does the myside bias benefit Sender, and I see no answer to this question on M&S's view, other than the manipulation answer, which can't be right.

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beneficial. To make my argument, I want to examine an important aspect of Sender and Hearer's situation that M&S do not consider in their own discussion of the myside bias. This is the question of what asymmetries there may be in the parties' *evidence*.

Partition the possible cases along the lines of what evidence our parties might possess or lack. By "evidence" here, let's mean just evidence that's relevant to the proposition Sender is trying to communicate to Hearer. Either Sender does or does not have evidence Hearer lacks. The alternatives here are importantly different, especially with regard to how reasoning, public argument, and communication could offer benefits to either party.

Suppose, first, that Sender does *not* have any better evidence than Hearer has. If Sender and Hearer already agree on their views, then communication has no benefit to offer. So, suppose that Sender and Hearer disagree on something, even though they have the same evidence. Does it then benefit Sender to be able to push their view onto Hearer, as the myside bias would help Sender do? It seems to me that it's *not* beneficial to Sender to push their view on Hearer. Again, it could be beneficial to Sender to *control* Hearer, to make them do what Sender wants. But why does making someone else believe what *you* believe usefully help you do this? It's not a useful kind of control, at least if our shared evidence no better supports my view than it supports any alternative position I might hope to change your mind about. If I have the same evidence you have about the chance of rain tomorrow, what good does it do me to make *you* think whatever *I* think about the weather on this evidence? Maybe sometimes Hearer had an irrational view and Sender could turn them to the rational view, but equally often Sender will have been the irrational one, and the myside bias is universal. So, I see no benefit to Sender to having a myside bias when the evidence is shared.

Suppose, next, that Sender *does* have some extra evidence that Hearer lacks. What then? Now it would seem to be beneficial to Sender to push their view on Hearer, since Sender's view is supported by a better, larger, body of evidence. (True belief is, again, plausibly a public good.) But, is it beneficial now for Sender to have a *myside bias*? That's our question. Let's divide it into two.

Suppose first that Sender *knows* that they do have better evidence than Hearer has. In that case, does it benefit Sender to use myside-biased reasoning to overcome Hearer's epistemic vigilance? I don't see how that's what Sender should do. If Sender knows they have more evidence, well, then please just present the evidence! If I have some evidence that it will rain that you lack, then it does benefit me to convert you to my view, but is converting you *through reasoning that's propped up by the myside bias* a beneficial strategy? No, no biased reasoning is called for! I should just share with you my evidence about the weather. That though, of course, returns us to the earlier case of shared evidence.

Finally then, suppose, the last possibility, that Sender has no idea they have better evidence. This is the last place we have left where we might hope to find a usefulness to the myside bias. But is the myside bias useful even here? I still do not see how. If Sender has no idea they have better evidence, is it beneficial to still try to push their view on to Hearer? Such a blind policy seems like it would equally well lead Sender to fight for their view when they have inferior evidence, so I doubt the blind policy is a beneficial policy. Perhaps, when Sender doesn't know they have better evidence, a benefit of reasoning, even with a myside bias, could be to make it apparent to Sender, and Hearer, that Sender has better evidence. Maybe. If so, that would be one small benefit to reasoning with a myside bias. But I doubt this adequately explains the myside bias.

After generously reading a draft of this paper, Mercier wanted to respond at this last juncture. He suggested it is optimal for each of Sender and Hearer to initially assume their beliefs are *true*, and to then let the tribunal of objective evaluations by Hearer(s) sort out the true from the false. But I'm not convinced that this even helps.

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I still want an explanation for why it is optimal, or efficient at all, to assume one's own beliefs are true when encountering an interlocutor who doesn't share your own view. Consider the two sides in the epistemological literature on disagreement. The "conciliationists" more easily abandon their initial views in the face of disagreement than the "steadfasters" do. (See, e.g., Christensen 2009.) Is the conciliationist approach a less efficient way, and the steadfasting approach a more efficient way, of jointly uncovering the truth? That looks unlikely to me, and at least would require some surprising argument in its support.

Ultimately I see no very apparent place where reasoning with a myside bias is beneficial.

6. Interlude: does my own view, epistemic communism, face similar worries?

In Dogramaci (2012, 2015*a*, 2015*b*), I developed a view I called *epistemic communism* which has high-level similarities to M&S's argumentative theory; we both highlight a kind of egocentric bias in our epistemic practices, broadly construed. Is my view vulnerable to similar worries that I'm raising for M&S? I'll quickly explain my view and why there's no worry.

My view is not about how we generate advertisable reasons for our beliefs. My view is about how we use epistemically evaluative language, the language we use when we call each other "[ir]rational" thinkers or say someone does or doesn't "know" what they claim to. Epistemic communism is premised on the claim that, by using this language, the evaluator helps promote in others the use of the belief-forming methods that the evaluator accepts for themself. Although we can (as anti-skeptics) assume that our basic belief-forming methods are by-and-large reliable, it's also a known fact that humans are unfortunately prone to sometimes use unreliable belief forming methods (e.g. wishful thinking), or to commit performance errors (e.g. affirming the consequent while trying to construct a deductive proof). Communism aims to explain how we use a social linguistic mechanism to help each other stay on that straight and narrow path. I might help to discourage you from engaging in wishful thinking by criticizing lots of examples of it as irrational, and you might dispense some epistemic evaluations that help me make fewer performance errors in my deductive reasoning while I'm trying to prove some conjecture.

What is the function of making evaluations that promote our own belief-forming methods? The evaluative practice promotes a beneficial coordination among our belief-forming methods, in both competence and performance; that is, epistemic evaluations help get us to accept and endorse the *same* belief-forming methods and to correctly apply them. Such coordination is beneficial because then we can safely trust each others' testimony without having to expend energy checking each others' track-record of reliability. I can safely and cheaply trust you because you believe whatever I would, if I'd collected your evidence. That's the proposal of epistemic communism.

If epistemic communism is right, it helps explain why we'd use evaluations to promote coordination, why we'd want to and try to believe the same things given the same evidence. (See Dogramaci and Horowitz 2016 and Greco and Hedden 2016 for why communism entails such "uniqueness" about epistemic support.) But the view does *not* predict or explain why, even when Sender and Hearer share exactly the same evidence, it benefits Sender to exhibit the myside bias, that is, to cook up reasons for Hearer to revise their beliefs to match Sender's. First, the myside bias has Sender offer up *advertised* reasons, which are not normally Sender's *motivating* reasons.[16]

[16]ER, pp. 138–44.

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Communism would, and could only, explain the benefit of coordination among motivating reasons. And second, the myside bias is fundamentally a bias for *what* we believe, a bias for those *contents*. Communism points to a benefit we get from promoting our *methods*, and (although shared methods do lead to the same beliefs when evidence is shared) the benefit that's cited by communism is one that accrues to Sender only after Hearer goes off, applies those methods in new circumstances, and then reports back testimony of the results of applying those shared methods. There is no benefit *at the time* when Sender is trying to mold Hearer into a trustworthy epistemic surrogate, but M&S's view aims to point to some benefit that arises already at that moment.

7. What explains why a *division of labor* in seeking arguments is efficient?

I've so far argued that it's very unclear how a myside bias could benefit Sender, or Hearer, in *any instance* of potential communication. A line of response to these concerns is suggested by much of what M&S say when they defend the Argumentative Theory. M&S could concede that no benefit can be found if we only examine, in isolation, any single instance of potential communication from Sender to Hearer. M&S could say that my examination above failed to uncover the function of the myside bias because I focus, wrongly, on a single instance of Speaker trying to persuade Hearer to accept some item of testimony. They could instead say the benefits only emerge, over the longer run, when there is a larger set of acts of potential communication infected by a myside bias. It can't be *too* long a run, though: throughout ER, they aim to display the benefits reasoning brings about in an array of examples of individual conversations or discussions, and the benefit is meant to be had at the time of the conversation. But M&S do offer an idea that may suggest how, in a realistic back-and-forth conversation between two people, we might give a kind of "emergent-social-benefit" explanation for why Sender should have a myside bias while seeking, via reasoning, reasons for what they're trying to get Hearer to believe. So let's see whether the idea they seem to have here is defensible.

Their idea seems to be the following. We all take turns playing the roles of Sender and Hearer, including in a single conversation. If, in our roles as Sender, we all exhibit a myside bias, we'll be like zealous advocates for our clients, namely, our own beliefs. The idea is that, by dividing up the labor of finding the normative reasons for all the different possible views, we'll more efficiently air the *best* possible case for each view, and then, in our roles as vigilant Hearers, we'll filter out and adopt just the views that enjoy the best normative reasons in their support. As Hearers, we're like jurors, convicting badly supported views and acquitting well supported ones, and thus tending toward the likely truth. Perhaps this is meant to explain how, even though Sender may have no better evidence and be no more rational than Hearer, when various Senders are all serving as the zealous advocates for the rich range of possible views, the best supported views will win out via the tribunal of Hearers' epistemic vigilance.[17]

Unfortunately, this still doesn't explain the myside bias, as far as I can see. It certainly *could be* that the human mind is so built that we each do better at sniffing out the real normative reasons for a view if we focus attention just on the reasons for a single view, rather than dividing the mind's efforts among making the cases for multiple views. But if that is a mere *contingency* of how the human mind works, then we haven't got any explanation of the myside bias. We still don't know why we are better at finding reasons when we focus on advocating for just one view. Consider again the legal

[17]For support for my interpretation here, see ER, Chs. 10–12, and see pp. 219–20 for M&S's use and qualification of the Sender-as-lawyer/Hearer-as-jury analogy.

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analogy: it's pretty clear, let's grant, that humans serve better as legal advocates when we advocate for a single client in a given case – but we have no idea *why*!

Perhaps M&S could argue that it is no contingent feature specific to actual human minds, but it's rather a necessary truth about the logic of the task of seeking out normative reasons that it is more efficient when each implementation of the task is applied to a single view. But I cannot find much argument for that sort of claim in M&S's work, and I cannot see how to argue very convincingly for it myself. (In fact, how do you even naturally divide up the "implementations" of the task of searching for normative reasons. If you and I put our heads together, are we still two units of investigation into the normative reasons?)

The only argument I find for why the myside bias might be necessarily beneficial is one in the following story M&S tell to support their proposal, where this story is intended to be representative of the benefits of dividing up the labor of reasoning via the myside bias:

> Imagine two engineers who have to come up with the best design for a bridge. Whichever design is chosen, they will supervise the construction together – all they want is to build a good bridge. Ella favors a suspension bridge, Dick a cantilever bridge. One way to proceed would be for each of them to exhaustively look at the pros and cons of both options, weigh them, and rate them. They would then just have to average their ratings – no discussion needed, but a lot of research. // Alternatively, they can each build a case for their favored option. Ella would look for the pros of the suspension bridge and the cons of the cantilever; Dick would do the opposite. They would then debate which option is best, listening to and evaluating each other's arguments. To the extent that it is easier to evaluate arguments presented to you than to find them yourself, this option means less work for the same result: Ella and Dick each have to find only half as many arguments to thoroughly review the pros and cons of each option. (ER, pp. 220–1)

One idea I can see suggested here is that there are benefits that come from *avoiding repetition or redundancy*. If Ella and Dick both seek out the reasons in favor, say, of the suspension bridge, then they'll waste time coming up with some reasons twice, when time or resources could have better been spent if one of them had been looking for reasons favoring the cantilever bridge.

Maybe there is something to this, but I have doubts about whether this really shows how the myside bias is so beneficial that this is why it evolved and persisted. It's unusually hard to think up all the considerations engineers need to anticipate when building a bridge! The reasons for and against almost all the choices we make in real life aren't very elusive. And when they do seem to elude us, that's usually due to our myside bias! Consider also the usual lab tests demonstrating poor reasoning. The reasons showing what the right answer is in the Wason Task or Tversky and Kahneman's Linda problem aren't *necessarily* hard to find.[18] They wouldn't be hard to find if mother nature hadn't built these puzzling quirks into our reasoning.

As I tried to come up with other ideas myself for how M&S or anyone could explain the efficiency of dividing the labor (of seeking out normative reasons), I thought about the more clean-cut case of mathematical proofs and theorems. Are there necessary aspects of the task of finding proofs for conjectures that makes it more efficient to somehow "divide the labor"? Maybe so. Suppose you dedicate your life to proving Goldbach's conjecture,

[18]For Wason, see ER, p. 40. For the Linda problem, an illustration of the Conjunction fallacy, see ER, p. 23.

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and I dedicate my life to refuting it, or to proving some completely separate conjecture. Maybe you will prove some lemmas that look relevant to proving Goldbach's conjecture, and it will be useful to have those in your toolkit (or just in your memory) as you work on your project, and maybe neither of us would have reached the same stock of potentially useful lemmas if we were each giving multiple conjectures half (or less) of our attention. Something along these lines could be made into a defense of the evolutionary value of dividing the labor of reasoning,[19] and thereby into a defense of the value of the myside bias, but it's a very limited defense – I'm not very confident there's a way to plausibly generalize this to many other kinds of ordinary reasoning. Proofs, which involve lengthy sequences of reasoning, seem unique in many ways. In any case, neither M&S nor anyone else I know has pursued any explanation like this of the myside bias as the general and pervasive feature of human reasoning that it is. I remain personally pessimistic about whether the myside bias really can be adequately explained as a beneficial cognitive trait.

8. Critique of M&S's second proposed function, the justificatory function of reasoning

Though they started out defending just their Argumentative Theory of Reasoning's function, Mercier and Sperber later added, in ER, a proposed second function of reasoning, a justificatory function. In this section, I'll inquire into what this proposal, the "Justificatory Theory", comes to, and explain why I find it objectionably unclear what the view could be.

The basic idea of the Justificatory Theory is this. When reasoning has us come up with reasons for our beliefs, reasons that can then be publicized, this practice can serve the purpose of *explaining* and *justifying* our actions to others. This use of reasons is a form of public reputation management that naturally evolved.

What is the evolutionarily beneficial effect of managing your reputation by publicizing reasons? What advantage does it confer, or what problem does it help solve? I find that I can only present M&S's answer to that question by quoting their words. To describe the beneficial effect of justificatory reasons, M&S say a few things, in particular that we can all thereby better 'coordinate' our actions. Here are some of the main things they say concerning this function:

> By giving reasons in order to explain and justify themselves, people indicate what motivates and, in their eyes, justifies their ideas and their actions. In so doing, they let others know what to expect of them and implicitly indicate what they expect of others. Evaluating the reasons of others is uniquely relevant in deciding whom to trust and how to achieve coordination. (ER, 8)

That quote actually seems to have several ideas in it, so let's explicitly mark off and number each one, though without assuming they're three distinct ideas. The three ideas I see are as follows: we use reasoning to come up with explanatory and justificatory reasons for our behavior, reasons we can advertise to others, and this is beneficial because (1) it helps us let each other *know what to expect* from each of us, and (2) helps us *decide who to trust*, and (3) helps us "*achieve coordination*".

How should or could we distinguish or put together the ideas in (1) – (3)? Let's look for guidance in more of what they say about the justificatory function:

[19]In developing communism, I did point to the benefits of this kind of division of the labor of reasoning (especially in Dogramaci 2015*a*). Overall, I mainly emphasized the benefits of another division of labor, the labor of empirically collecting evidence.

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> For humans, knowing what to expect of each other is a crucial cognitive challenge. How is this challenge met? How do humans succeed in forming, if not perfect, at least adequate mutual expectations? The most common answer consists in invoking two mechanisms: norms at the sociological level, and understanding of the mental states of others at the psychological level. (ER, p. 184)

In that quote, I hear talk of function (1), perhaps (3) too, (if that's distinct).

Here's another quote that elaborates a bit on what the last one said:

> Justificatory reasons, in fact, bridge the gap between norms and mindreading. When we justify ourselves, we present our motivations as normatively apt, and we present norms as having motivating force. In other terms, we psychologize norms and 'normalize' mental states. In doing so, our goal is not to give an objective sociological or psychological account of our actions and interactions; it is to achieve beneficial coordination by protecting and enhancing our reputation and influencing the reputation of others. (ER, p. 186)

In that quote, we have it clarified that function (1) is not really about letting others "know" (what to expect of us) in the usual, factive and objective sense of knowing, since the reasons we advertise when we justify ourselves might not give any "objective" account of our motivations. We also hear about function (3) again, when M&S say our goal is to "achieve beneficial coordination".

Finally, here are the two paragraphs that follow that last one I just quoted. These paragraphs round out the section of ER that presents the justificatory function of reasoning (that section, titled "The Challenge of Coordination and the Justificatory Function of Reason", is only three and a half pages, so I've now given you most of it!):

> The role of reasons in social coordination has often been highlighted in philosophy, psychology, and the social sciences. The dominant view, however, is that attributing reasons is the most elaborate form of mindreading. We would argue that as far as mindreading goes, the attribution of reasons is typically misleading. The causal role it gives to reasons is largely fictitious; the reasons people attribute to themselves or to others are chosen less for their psychological accuracy than for their high or low value as justifications. The explanatory use of reasons, we suggest, is in the service of its justificatory use: it links reasons to persons so that good reasons are seen as justifying not just a thought or an action but also the thinker of that thought, the agent of that action.
>
> The ability to produce and evaluate reasons has not evolved in order to improve psychological insight but as a tool for defending or criticizing thoughts and actions, for expressing commitments, and for creating mutual expectations. The main function of attributing reasons is to justify oneself and to evaluate the justifications of others. (ER, p. 186)

Those last two paragraphs reinforce that function (1), to "let others know" something about ourselves, is meant in the sense such that a testifier can let others know something, even if the testimony is completely made up. The justificatory function of reasoning is – *not* to convey to others *accurate* information about the causes of our past actions, *but rather* – to advertise, falsely or truly, that we are playing by the accepted social norms. And this helps us, as M&S put it, achieve "mutual expectations", and/or "social coordination". So that suggests somehow function (2), deciding whom to

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trust, is going to carry much of the weight of the view here. And as for what exactly the "coordination" of function (3) is, I'm still extremely unsure. But how we pursue function (2), how we make beneficial decisions about whether to trust someone, on the basis of testimony they give us that might totally fabricate their motivations, remains mysterious to me.

I don't object to M&S's view here by identifying some false claim it makes or entails. Really, my only reason for not buying M&S's proposed justificatory function of reasoning is my difficulty seeing what the view could be. I cannot see what the view could be if I cannot answer this fundamental question (and I cannot): what real benefit would, or even could, come from publicly advertising to others reasons for our behavior if those reasons are not typically our actual motivating reasons?

Suppose I said the function of telling jokes is to make people laugh. It's true that jokes cause us to laugh, but this effect is not a function in M&S's sense. Recall, M&S said a trait's function is an "effect of that trait that causally explains its having evolved and persisted in a population". We don't explain why joke-telling evolved by citing its effect of making people laugh. We don't explain why we sleep by only saying it alleviates our tiredness. And we can't explain why we eat by only saying it alleviates our hunger. To really explain something, for example eating, you need the story about nutrition, the extraction of energy from food, and so on. (As it stands, we still don't know the function of jokes or sleep, despite whatever you've heard from certain journalists or researchers over-selling the latest science.) When M&S tell us the function of reasoning is to conjure up reasons that we pitch to other people to manage their expectations of us and thereby manage our reputation, it's like hearing that we sleep to rest. Until we explain how rest, or managing our reputation in this way, has any evolutionary benefit, we haven't got the explanation.[20]

9. One last question: what explains why we have a faculty of reasoning that performs well in a social context but poorly in a solitary context?

Here is one last and very brief question about M&S's view. This is a question about why reasoning has an exclusively social function, so the question targets both the Argumentative Theory and the Justificatory Theory.

M&S claim that reasoning performs well in a social setting and poorly in a solitary setting because it evolved to serve only a social function, not a solitary one.[21] But, then, I'm left wondering: why? That seems strange. Why did reasoning undergo a lopsided evolution?

M&S say that we see reasoning performing poorly so often because our modern civilized scientific world transported reasoning out of its initial wholly social niche.[22] I agree that modern life includes environments very different from whatever original niche reasoning evolved in, but I wonder: didn't the natural and social environment that reason evolved in offer huge benefits to good solitary reasoners? Sure, modern life offers new opportunities to engage in solitary reasoning, but weren't there *also* plenty of opportunities to engage in solitary reasoning in the Pleistocene? To explain why reasoning evolved with the exclusively social functions they claim it has, M&S

[20]In ER, p. 246, M&S show great sensitivity to the risk of confusing "proximal" explanations (such as saying that we drink in order to quench thirst) with "ultimate" explanations (given in evolutionary explanations). My worry here is that they nonetheless offered a proximal explanation when they aimed for an ultimate one.

[21]ER, pp. 10, 333, and Chs. 13, 15.

[22]ER, pp. 10, 247–50.

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need to argue *not* that solitary reasoning is something that happens in modern life; they must argue that solitary reasoning is something that there was *not* any or much occasion for in Pleistocene life. Otherwise, it remains a bit of a mystery why reasoning has exclusively social functions, and it remains mysterious why reasoning goes so badly when we find ourselves in a solitary context. But, I'm still mystified, because I would have guessed we'd have plenty of opportunity and potential benefit from some good solitary reasoning even in hunter-gatherer life in the Pleistocene, and who can currently show otherwise?

It may help to consider a *dis*analogy, a case where we *can* explain why we evolved a faculty that today performs relatively poorly. Why are our eyes sensitive to only visible light, to only a narrow part of the full range of light wavelengths that the Sun emits? There is an evolutionary answer to this. We all descend from animals whose eyes initially evolved in the water, so animals' eyes have a design that's better suited to seeing in water than air, and visible wavelengths deteriorate much less than other wavelengths do while traveling through water.[23] In this example, then, the explanation is very clear why we have relatively lousy visual systems that don't see lots of light wavelengths: we *moved out* of the water, and the evolution of our eyes didn't re-start from scratch. But the explanation here is *not*: we moved *onto* our modern land and air. That fact isn't relevant to why we see only a narrow band of light. This is disanalogous to the story for reasoning, because there's no evidence or argument M&S or anyone can give that we moved *out* of a *wholly social* environment in which reasoning evolved. For all we presently know, Pleistocene hunter-gatherer humans very often found themselves in situations where a bit of unbiased solitary reasoning would do them tremendous good. We still don't know why humans evolved such an imperfect faculty of reasoning.

10. Conclusion

There is something very intuitive and appealing to M&S's basic ideas, especially those behind the Argumentative Theory. Why do we engage in a kind of thinking where we conjure up reasons that we might sell to other people as support for what we think and what we say? It does seem to me this basic idea of theirs is likely on a good track: there is something social to the function here, and it would seem to be for the sake of communication that we reason consciously, that is, make reasons conscious to our own minds.

The critical details, though, still seem to me to need to be filled in in a convincing way. I am also skeptical of M&S's strategies for explaining some of the stranger quirks of human thinking, including the myside bias and the confabulation of false motivating reasons. These phenomena remain mysterious. I don't see how the social or communicative function of reasoning and of giving reasons can explain these quirks. But I also have no idea what could explain them, if anything does.[24]

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[23]See Fernald (2001). The water explanation may only be part of the full true explanation, but that doesn't matter for my purposes of illustration.

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