A review of The Enigma of Reason

This is a book by Dan Sperber and Hugo Mercier.

The review consists of sections of text taken from the book, offset by purple, introduced and summarized by my words as a reviewer which are not similarly set off. It follows the author's organization, with chapter titles like the following introduction in header format.

Introduction: A Double Enigma

Animals have to be able to reason. They interpret signs from their environment to determine how to find food, shelter and mates and to avoid danger.

Their intuition is predictive power based on repeated observation. Antelope move away when they see or smell lions; Pavlov's dogs anticipated food when they heard a bell.

Humans are the most social of animals. Our intuition has evolved a strong ability to predict other people's states of mind by reading their facial expressions, language and body movements.

We employ this ability constructively, such as moving aside when we see somebody coming our way carrying a heavy load, or otherwise, as when the perception that somebody is going for the last roll of toilet paper on the shelf makes us act more quickly.

Most significantly, we are by far the most cooperative species ever to evolve, using gesture and especially language to coordinate our activity towards common goals.

> Parties to these polemics [about the nature of reason] have failed to question a basic dogma. All have taken for granted that the job of reasoning is to help individuals achieve greater knowledge and make better decisions.

> It is paradoxical that, quite commonly, reasoning should fail to bring people to agree and, even worse, that it should often exacerbate their differences.

> Reason as standardly understood is doubly enigmatic. It is not an ordinary mental mechanism but a cognitive superpower that evolution — it used to be the gods — has bestowed only on us humans. As if this were not enigmatic enough, the superpower turns out to be flawed. It keeps leading people astray. Reason, a flawed superpower? Really?

The crux of the argument is that reason, like every human and animal function, is a product of evolution. This book attempts to show how it evolved, and to support the claim that it is well suited to its purpose.

> Reason, we will show, far from being a strange cognitive add-on, a superpower gifted to humans by some improbable evolutionary quirk, fits quite naturally among other human cognitive capacities and, despite apparent evidence to the contrary, is well adapted to its true function.

> Reason, we argue, has two main functions: that of producing reasons for justifying oneself, and that of producing arguments to convince others.

> Humans differ from other animals not only in their hyperdeveloped cognitive capacities but also, and crucially, in how and how much they cooperate. They cooperate not only with kin but also with strangers; not only in here-and-now ventures but also in the pursuit of long-term goals; not only in a small repertoire of species - typical forms of joint action but also in jointly setting up new forms of cooperation. Such cooperation poses unique problems of coordination and trust.

Our reason evolved to make economical use of our time and energy.

> The tour starts with a pair of observations: human reason is both biased and lazy. Biased because it overwhelmingly finds justifications and arguments that support the reasoner's point of view, lazy because reason makes little effort to assess the quality of the justifications and arguments it produces.

> It makes sense, we will show, for a cognitive mechanism aimed at justifying oneself and convincing others to be biased and lazy.

> When people who disagree but have a common interest in finding the truth or the solution to a problem exchange arguments with each other, the best idea tends to win; whoever had it from the start or came to it in the course of the discussion is likely to convince the others.

The authors define two ways to explain reason, the interactionist and the intellectual. The interactionist focuses on argument and justification. We will go with the quickest and easiest explanation that we can get somebody else to accept. It is only when they balk, or we fear that they will, that we invest in strengthening our reasons.

> It is by force of argument that we hope to persuade you that the interactionist approach is right or, at least, on the right track. This, of course, makes the book itself an illustration of the perspective it defends.

II: Understanding Inference

> Following Hume's example, we will use the term "inference" for the extraction of new information from information already available, whatever the process. We will reserve the term " reasoning " for the particular process of pursuing this goal by attending to reasons.

> A representation has the function of providing an organism (or, more generally, any information-processing device) with information about some state of affairs. The information provided may be about actual or about desirable states of affairs, that is, about facts or about goals.

Inferential procedures apply to representations. They take representations as input and may erase or modify them, or they may produce new ones (as does the AND-gate of a motion detector when it gets the proper pair of inputs).

Animals, including humans, have evolved to take advantage of regularities in their environment.

The authors introduce the notion of modules, which will be employed extensively. Bookmark this definition.

The alternative to drawing inferences by means of logical or probabilistic methods working across the board in the same way is to use many specialized modules, each taking advantage of a given regularity by means of a procedure adjusted to the task.

Animals think concretely. Humans have the additional ability to think abstractly. We make observations not only at the detail level, but the meta- level, generalizing from specifics.

There is no evidence that other animals are interested in any form of general knowledge (but let's keep an open mind about the possibility). In the case of humans, all of them are definitely interested in not being harmed by snakes (and in other types of specific knowledge with practical import), and most are also interested in some general knowledge about snakes without immediate concern for its practical import. They want not just to exploit regularities but also to represent them. Does this mean that humans are better off using just the classical method? Or both methods? Or is, as we will suggest, something merely resembling the classical method itself modularized in the human cognitive system?

There are many relevant arguments in the controversies about modularity purporting to show that human inference is basically classical or basically modular.

What remains sketchy at best is also the way the classical picture tries to explain why people who reason from the same premises commonly arrive at divergent or even contradictory conclusions.

The abstractions we extract may be very similar, if the observations from which we form them are uniform. However, when our experiences and observations are different, our abstract-level representations of the world can be different.

> The ability to represent representations with ease and to draw a variety of intuitive inferences about them may well be the most original and characteristic features of the human mind.

> In their basic ontology — and here humans seem quite exceptional — there are not only things but also representations of things. In fact, for most things humans can represent, they can also represent its representation. They can represent rocks and the idea of a rock, colors and color words, numbers and numerals, states of affairs (say, that it is raining) and representations of these states of affairs (the thought or the statement that it is raining).

See the foregoing introduction of modules – mental subroutines each with its own inputs, outputs and functions. Modules allow fast, automatic processing of routine observations with minimal time and energy. A footstep-processing module might quickly translate sounds from the staircase into an inference of which family member just came home.

> Arguably, " rationality " in a most basic sense is synonymous with inferential efficiency. The degree to which rationality is achieved depends to a large extent on the way many inferential modules each perform their functions and on the way these modules are articulated.

III: Rethinking Reason

For me the reviewer things get a bit murky at this point. Reason is operating at the meta- level, drawing inferences (2nd level) from reasons (1st level).

Reason, we argue, is a mechanism of intuitive inferences about reasons in which logic plays at best a marginal role. Humans use reasons to justify themselves and to convince others, two activities that play an essential role in their cooperation and communication.

Just as echolocation evolved as an adaptation to the ecological niche inhabited by bats, reason evolved as an adaptation to a very special ecological niche, a niche that humans built and maintain for themselves with their intense social relationships, powerful languages, and rich culture.

It is based, however, on a convenient fiction: most reasons are after-the-fact rationalizations. Still, this fictional use of reasons plays a central role in human interactions, from the most trivial to the most dramatic.

Humans are social animals. The author's section head makes that point:

Reasons Are for Social Consumption

Whatever humans do is likely to contribute for better or worse to the way they are seen by others — in other words, to their reputation. These indirect reputational effects may turn out to be no less important than the direct goal of their action, whatever it is.

When we give reasons for our actions, we not only justify ourselves, we also commit ourselves. In the first place, by invoking reasons, we take personal responsibility for our opinions and actions as described by us, that is, as attitudes and behavior that we had reasons to adopt.

We thereby indicate that we expect others to either accept that we are entitled to think what we think and do what we do or be ready to challenge our reasons. When what we thought or did is unlikely to be approved, by giving reasons, we may indicate a line of defense: we had, if not good reasons, at least reasons that seemed good at the time.

A defense based on reasons typically allows us to accept responsibility while denying guilt. By giving reasons, we also commit ourselves to a future line of thought and conduct. Invoking reasons as motivations of one's past views and actions expresses a recognition of the normative aptness of these reasons and a commitment to being guided by similar reasons in the future.

For our audience, this commitment to accepting responsibility and to being guided in the future by the type of reasons we invoked to explain the past is much more relevant than the accuracy of our would-be introspections. This is why we all pay attention to the reasons of others and why we produce our own.

To put it in more sociological terms: Reasons are social constructs. They are constructed by distorting and simplifying our understanding of mental states and of their causal role and by injecting into it a strong dose of normativity. Invocations and evaluations of reasons are contributions to a negotiated record of individuals ' ideas, actions, responsibilities, and commitments.

This partly consensual, partly contested social record of who thinks what and who did what for which reasons plays a central role in guiding cooperative or antagonistic interactions, in influencing reputations, and in stabilizing social norms. Reasons are primarily for social consumption.

The use of reasons in explanation is often treated as more important than their role in justification (or, at least, as equally important). We, on the contrary, will argue that the justificatory role of reasons is more important than their explanatory role.

The dominant view is that reasoning is aimed at truth and at good decisions and should be impartial and objective. The reasons used in reasoning should be impersonal "arguments" that owe their force to their formal properties (studied in logic and probability theory).

The authors make an interesting claim in a section header: **Reasons Themselves Must Be Inferred**. we may not know or be able to articulate them.

It would be quite surprising (and interesting) to find animals other than humans that think about reasons. Reasons occupy an important place in human thinking because, we have suggested, of the unique role they play in humans ' very rich and complex social interactions. Reasons help establish personal accountability, mutual expectations, and norms. Saying this, however, doesn't tell us how humans are capable of knowing their reasons (even if this is a quite imperfect knowledge, as we have seen).

Inferences, we have argued, are made possible by the existence of regularities in the world

The public representations of beliefs and intentions as guided by personal reasons are a fundamental aspect of human social interaction. These representations, we suggest, are produced by a dedicated metarepresentational module. All our reasons are, directly or indirectly, outputs of this module.

Can the Reason Module Reason? The reason module is, at least in part, aimed at producing justifications and is very much biased in our favor.

So, according to the classical approach to reasoning, language is essential to reasoning. We agree, but for completely different reasons.

Reasons, we have argued, are for social consumption. To be socially shared, reasons have to be verbally expressed and, indeed, reasons appear on the mental or public scene in verbal form.

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.

At the level of the social group, there are shared norms of various kinds: moral, legal, religious, prudential, technical, and so on. They may be explicitly codified or not and enforced with sanctions or not. These norms regulate a great variety of social interactions.

By giving reasons to explain and justify yourself, you do several things. You influence the way people read your mind, judge your behavior, and speak of you. You commit yourself by implicitly acknowledging the normative force of the reasons you invoke: you encourage others to expect your future behavior to be guided by similar reasons (and to hold you accountable if it is not).

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 main function of attributing reasons is to justify oneself and to evaluate the justifications of others.

The central thesis of the book is that human reason has two main functions corresponding to two main challenges of human interaction: the attribution of reasons serves primarily a justificatory function, and reasoning serves primarily an argumentative function.

IV: What Reason Can and Cannot Do

> For the audience, reasoning is a tool of epistemic vigilance. It serves to evaluate arguments provided by a communicator so as to reject claims that are poorly supported and to accept claims that are well supported.

> By using bias and laziness to its advantage, the exchange of reasons offers an elegant, cost-effective way to solve a disagreement.

> People may want to believe something for many reasons, but the most common is hedonic: because it makes them feel good. There would be a desire to believe that leads people to "give preferential treatment to pleasant thoughts and memories over unpleasant ones."

This explains Woke / Social Justice Warriors. They hang onto untrue, unworkable beliefs because it makes them feel good. Here is post from the morning this review is being written.

> Some cognitive mechanisms have been so fully repurposed by the modern world that they bear only a small resemblance to their ancestral form — witness the transformations brought by literacy to our ability to recognize simple arbitrary shapes. [viz, letters].

> Reason is used now in a variety of ways that differ from its evolved function — from displaying one's smarts in a formal debate to uncovering the laws of physics.

> By contrast, today's doctors, relying on vastly improved, evidence-based medical knowledge, may make decisions guided in good part by the sense of what the medical community would approve and, in so doing, preserve both their reputation and the health of their patients.

This has its own danger – groupthink. Prescribed solutions take the place of reasoned solutions. Monied or establishment interests preclude innovation via novel approaches.

This piece investigates why the American Association of Pediatrics recommends twice as many vaccines as our European peer nations. It is not our childrens' health – which is actually worse!

V: Reason in the Wild

> Historical, anthropological, and linguistic evidence points to a potentially damning flaw in our argument so far: the focus on examples and experiments from Western cultures.

> As a group of cross-cultural psychologists and anthropologists recently put it, these are WEIRD people — people coming from Western, Educated, Industrialized, Rich, Democratic countries. The acronym is well deserved, for this sample often sits at the extreme range of the variability observed in human populations.
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> For instance, American undergraduates — by far the largest pool of participants in psychology experiments — are more individualistic than their noncollege peers, who are more individualistic than Americans from the previous generation, who were already more individualistic than just about any other people on earth.

> Hundreds of studies have shown that when students discuss a task in small groups, they often reach a deeper understanding of the materials.

Implementing cooperative learning in the classroom is not always easy. There must be disagreement, but not to the point of generating conflict. Letting the students talk things through takes time. Yet in spite of these practical obstacles, by the 1990s more than two-thirds of elementary and middle school teachers in the United States relied on cooperative learning, generally to good effect.

Cooperative learning was the cri du jour in the 1990s. It did not work for this reviewer's son Jack at the age of 10. Other kids his age were not focused, nor interested in solutions, much less agreeing on them.

It works well for second son Eddie now in 2026 in Math Battles at age 14. His team is focused on a team solution in a competitive environment.

Conclusion: In Praise of Reason after All

What Reason Is (and Isn't) For We have been working together on reason for more than ten years. While our account of the mechanisms of reason is developed for the first time in this book, we have been presenting our earlier work on the function of reason — the "argumentative theory of reasoning" — in a number of publications and conferences.

Most of the philosophers and psychologists we talked to endorse some version of the dominant intellectualist view: they see reason as a means to improve individual cognition and arrive on one's own at better beliefs and decisions. Reason, they take for granted, should be objective and demanding. Still, when we present evidence that, on the contrary, reason is hopelessly biased and lazy, they accept it without a hitch. Indeed, many of them are familiar with this evidence — some have even contributed to collecting it.

Actually, the usual defenses of the **intellectualist approach** to reason are themselves good examples of biased and lazy reasoning. It is an undisputed fact that individual reasoning is rarely if ever objective and impartial as it should be if the intellectualist approach were right. In discussing what to do with this mismatch between theory and evidence, the possibility that the approach itself might be mistaken is rarely considered. Failures of reasoning

are lazily explained by various interfering factors and by weaknesses of reason itself. Again, this doesn't make much evolutionary sense. A genuine adaptation is adaptive; a genuine function functions.

In our **interactionist account**, reason's bias and laziness aren't flaws; they are features that help reason fulfill its function. People are biased to find reasons that support their point of view because this is how they can justify their actions and convince others to share their beliefs. You cannot justify yourself by presenting reasons that undermine your justification. You cannot convince others to change their minds by giving them arguments for the view you want them to abandon or against the view you want them to adopt.

And if people reason lazily, it is because, in typical interactions, this is the most efficient way to proceed. Instead of laboring hard to anticipate counterarguments, it is generally more efficient to wait for your interlocutors to provide them (if they ever do).

Reason properly understood as a tool for social interaction is certainly not perfect, but flawed it is not. Second part of the enigma of reason solved.

Intellectualists are committed to the view that reason should be demanding and objective both in the production and in the evaluation of arguments. They cannot but observe with resignation that human reason actually is not up to what it should be.

The second prediction — that evaluation is demanding and objective — is a genuine prediction. There is hardly any direct evidence on the issue in the literature, and the little there is is inconclusive. This second prediction is original to the interactionist approach.

There is much further evidence in the literature supporting our prediction that people are more demanding and objective in evaluation than in production.

The idea that Darwinian selection works at several levels and in particular at the level of groups has been much developed and discussed lately. It has been argued in particular that group-level selection has played a major evolutionary role in making human cooperation and morality possible. Couldn't the evolution of reason, then, be a case of group-level rather than individual-level selection for cognitive cooperation?

No, ours is definitely not a group-level selection hypothesis.

Reason as we describe it is an adaptation to social life where trust has to be earned and remains limited and fragile.

This book offers the best explanation of I have read of how reason works. Here are links to reviews I have written on related books.

Bowling alone

Does altruism exist

Irrationally yours

Pathological Altruism

Political Correctness and the Destruction of Social Order Chronicling the Rise of the Pristine Self

The Believing Brain

The Folly of Fools

The Intelligence Paradox

The Neuroscience of Intelligence

The Righteous Mind Why Good People Are Divided by Politics and Religion

The Science of Human Intelligence

The true believer

The upside of the irrationality

Thinking fast and slow