

Steven Pinker Defends a Damagingly Irrational Conception of Reason

Steven Pinker, *Rationality: What it is, why it seems scarce, why it matters*. Allen Lane, UK, 2021. Pp. xvii + 412. HB. £25. ISBN: 978-0-241-38027-7.

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In the Preface to *Rationality*, Steven Pinker remarks that “we are smart enough to have ... articulated the rules of reason that we so often flout” (p. xiv). Unfortunately, Pinker does not get the rules of reason right in this book. Pinker defends a damagingly irrational conception of reason. But despite this rather drastic failure, there is much of interest in this book, even if at a rather elementary level.

Chapter 1 explores the question of why we are so often irrational when reason has been of such great benefit to humanity. Pinker gets us to consider possible limits to our own capacity for reason by inviting us to solve a few deceptively simple puzzles.

In chapter 2, reason is defined as “the ability to use knowledge to attain goals”, and knowledge is defined as “justified true belief”. We are then invited to consider to what extent reason can be justified, and whether we should always be rational. There is a discussion of the role reason has in adjudicating between competing goals, and discussion of emotion, desire, morality, and reason.

In chapter 3 we are introduced to logic in the form of an elementary sketch of the propositional calculus, and then told of some of the ways we violate logic and reason in life. The chapter concludes with a brief account of neural networks.

Next, we are introduced to probability, its diverse interpretations, and how to calculate conjunctive, disjunctive and conditional probabilities. There are lots of examples of the way intuitive judgements of probability go wrong. We may misjudge air travel to be riskier than travel by car because aeroplane crashes, when they do happen, get far more exposure in the media than far more frequent car crashes. Or we make elementary blunders in the calculus of probabilities.

We are then introduced to Bayes’ theorem, and to the problems and pitfalls of its applications to daily life.

After that there is rational choice theory, an informal account of its axioms, and some of the ways we violate the axioms in real life, sometimes to our cost.

Next, in chapter 7, we encounter statistical decision theory. This is relevant whenever we act in response to an uncertain signal: surgery is performed on the basis of a scan that detects cancer – or possibly just a harmless cyst.

Chapter 8 introduces game theory: we learn about zero-sum, non-zero-sum, and coordination games. There is an account of the prisoner’s dilemma, the tragedy of the commons, plus implications for personal and public life.

Chapter 9 is concerned with correlation and causation, what they are, and the importance of distinguishing them. We learn about *regression*, a statistical technique that provides the perfect version of an imperfect correlation. Puzzling aspects of causation are explored, and techniques are indicated for extracting causation from mere correlations. Rather oddly, there is no mention of physics, the science that studies causation at the most fundamental level.

Chapter 10 tackles the problem of rampant irrationality. All too many people fall for mad ideas. Why? Some popular explanations are dismissed as too glib – such as that it is all the

fault of social media. For Pinker, more substantial explanations include: we believe what our group, or sect, believes; our mad beliefs are held hypocritically, quite unlike beliefs about the material world around us; our crazy beliefs are about remote domains, and cannot be falsified; we are instinctive dualists, essentialists and teleologists, and these doctrines support further madcap beliefs. Public understanding of science is too superficial to form a corrective, and science communicators don't help much. But all is not lost; rationality exists, notably in science, but also in good journalism and public life.

In the final chapter, Pinker argues that rationality really does matter: it can protect us from death, and promote material and moral progress. In connection with the last point, there are wonderful quotations from Erasmus, Locke, Bentham, Wollstonecraft, and others.

I found it disappointing that the book does not really discuss the heuristics of rational problem solving, and there is next to nothing about general rules, methods or strategies of rational problem solving or aim pursuing. The basic rule "articulate and critically assess possible solutions to the problem you seek to solve" does not get a mention. The key Enlightenment idea of generalizing progress-achieving methods of science to arrive at generalized, progress-achieving methods of rationality, fruitfully applicable, potentially, to all worthwhile, problematic endeavours, does not appear. Nor does Karl Popper's version of this idea: generalize falsificationism to form critical rationalism: see (Popper, 1959, 44, n *1).

These serious omissions are related to what is for me the really big failure of this book: Pinker defends a damagingly irrational conception of reason. Pinker's conception fails to provide means for the improvement of problematic aims, and it is that which renders it damagingly irrational. The key point was expressed as follows in a book published long ago in 1984 (Maxwell, 1984, 92-3; 2nd ed., 105).

Whatever we are doing, our aims are quite likely to be more or less problematic. Contrary to what we may suppose, aims we are striving to realize may not be realizable, or may not be desirable (or may not be as realizable or desirable as somewhat modified aims we might pursue). Thus, whatever we are doing, in order to act rationally we must be able and ready, as the need arises, to improve our aims and methods as we act. Any conception of rationality which does not include this requirement concerning the need to *improve* aims and methods as we act must systematically lead us astray, fail to help us realize what is of most value to us (on all those occasions when we pursue unrealizable or undesirable aims).

Thus, any conception of reason that fails to stress the need to improve problematic aims as we act, and fails to provide methods designed to help us do that, must lead us systematically astray, and thus cannot be authentic reason. Pinker does discuss the role of reason in adjudicating between conflicting goals, but otherwise says nothing about improving problematic goals, and provides no methods for such improvement..

What might such methods be? One method is to represent a problematic goal in the form of a hierarchy of goals, such that each goal becomes less and less specific and problematic as one goes up the hierarchy; in this way, a framework of relatively unproblematic goals (and associated methods), high up in the hierarchy, is created within which much more specific and problematic goals (and associated methods), low down in the hierarchy, may be improved as we act.

This "hierarchical" conception of rationality has at least two applications that ought to be of concern to Pinker – and indeed to us all.

The first concerns physics, and so all of natural science. The basic aim of physics is not knowledge of truth, nothing being presupposed about the truth. It is rather truth *presupposed to be unified*. This aim is implicit in the way physics accepts unified theories only, and persistently ignores endlessly many ad hoc, disunified rivals that can be concocted that fit the evidence even

better. But this aim of truth presupposed to be unified is profoundly problematic. Physics needs to invoke the hierarchical conception of rationality, and represent the problematic aim of physics in the form of a hierarchy of aims, each becoming less substantial, and so less problematic, as one goes up the hierarchy. In this way, a framework of relatively unproblematic aims, and associated methods, is created high up in the hierarchy, within which much more substantial and problematic aims, and associated methods, may be improved, as physics proceeds: for a more detailed exposition see (Maxwell, 1984, chs. 5 and 9; Maxwell, 2017).

All this is ignored by Pinker.

The hierarchical conception of rationality is also highly relevant to academic inquiry as a whole; its current neglect has profoundly damaging consequences for humanity.

Academic inquiry is primarily devoted to the acquisition of knowledge and technological know-how; the basic idea is that knowledge, once acquired, can then be applied to help solve social problems. But, judged from the standpoint of helping to promote human welfare, academia organized in this way, restricted to acquiring and applying knowledge, is damagingly irrational. It means that academia cannot do what it most needs to do to help promote human welfare, namely articulate problems of living, local and global, and propose and critically assess possible solutions – possible *actions*, policies, political programmes, ways of living. It means universities fail to do what they most need to do to help humanity solve the climate crisis, the ecological crisis, and other global problems, namely, engage actively with the public *to promote action designed to solve global crises*. Universities fail to take as their basic task public education about what our problems are, and what we need to do about them. As I have put it in a recent article, “It is hardly too much to say that Extinction Rebellion and Greta Thunberg have done more in one year to bring the climate crisis to public attention than all the universities of the world have done in 60 years – ever since we first really knew that global warming would occur” (Maxwell, 2021).

Academic inquiry devoted in a genuinely rational way to promoting human welfare – helping humanity make progress towards a good world – would need to recognize that this basic aim is profoundly problematic. Academic inquiry as a whole thus needs to put the hierarchical conception of rationality into practice, to facilitate the progressive improvement of the basic problematic aim. As a result, future global problems, unintended byproducts of scientific and technological developments, might be stopped before they become serious. (For a detailed exposition of this argument see Maxwell, 1984).

To sum up: humanity is heading towards climate and ecological devastation, fundamentally because our institutions of learning are, and have long been, disastrously irrational in a wholesale, structural way. But Steven Pinker, in this book ostensibly devoted to rationality, has not even noticed.

References

Maxwell, N., 1984, *From Knowledge to Wisdom*, Blackwell, Oxford; (2nd edition available at <https://philpapers.org/archive/MAXFKT-3.pdf>).

Maxwell, N., 2017, *Understanding Scientific Progress*, Paragon House, St. Paul, MN.

Maxwell, N., 2021, How Universities Have Betrayed Reason and Humanity—And What's to Be Done About It, *Frontiers*, <https://www.frontiersin.org/articles/10.3389/frsus.2021.631631/full> .

Popper, K., 1959, *The Logic of Scientific Discovery*, Hutchinson, London.