Contents

Preface to the fourth edition

1 THINKING IN GENERAL

1 What is thinking? ........................................
   Types of thinking ......................................
   The search-inference framework ......................
   Thinking about beliefs ................................
   How do search processes work? ......................
   Knowledge, thinking, and understanding ............
      Naive theories ......................................
      Understanding ......................................
   Conclusion ...........................................

2 The study of thinking ....................................
   Descriptive, normative, and prescriptive ..........
   Methods for empirical research ......................
      Observation .......................................
      Computer models and artificial intelligence ....
      General issues .....................................
   Development of normative models ..................
   Descriptive models and heuristics .................
   Development of prescriptive models ...............
   Classification of biases .............................
   Conclusion ..........................................  

3 Rationality ...............................................  
   Good thinking and goal achievement ...............  
      Optimal search ...................................
      The meaning of rationality ......................
      Rationality and luck ..............................

4 Conclusion ...............................................
of people should pay for its own accidents. City dwellers surely have more accidents, and their cars get broken into and stolen a lot more”). Other arguments presented evidence on the opposite side as well (for example, “On the other hand, it doesn’t seem fair to make people pay for things they can’t help, and a lot of people can’t help where they live”). Subjects’ thinking itself was also measured by looking at whether they themselves produced two-sided or one-sided arguments when asked to consider some question, such as the question about ocean-floor minerals described in Chapter 3. Those thinkers who gave higher grades to two-sided protocols, and who thought that we should be open-minded when our beliefs are challenged, were more likely than other subjects to produce two-sided thinking themselves. It appears that people’s beliefs about thinking affect the way they themselves think.

Why do some fail to realize that two-sided thinking is better than one-sided thinking? It is possible that belief in one-sided thinking is the result of the evolution of institutions, such as organized religions and nations. To keep its adherents from one generation to the next, each of these institutions must convince them that its views are correct, even though many outsiders will argue otherwise. Those institutions that inculcate an ideology in which defense of one’s belief is a virtue and questioning is a vice are the ones most likely to overcome challenges from outside.

Another possibility is that people confuse two different standards for thinking, which we might call the “good thinker” (active open-mindedness) and the “expert.” Because experts know the answer to most questions, they usually do not have to consider alternatives or counterevidence. If we admire experts, we may come to admire people who are “decisive” in the sense of being rigid. When a news commentator criticizes a political candidate for waffling and being unsure (as might befit a good thinker faced with many of the issues that politicians must face), the implication is that the candidate is not expert enough to have figured out the right answer. Similarly, a person who adopts a know-it-all tone — speaking without qualification or doubt — is giving a sign of expertise. Some parents (perhaps because they are experts about the matter under discussion) talk this way to their children, who come to think of it as a “grown-up” way to talk.

This confusion of expertise with good thinking may reinforce the institutional pressures. Those who are considered wise and respected members of the institution or group may talk like experts, encouraging their followers to “know” rather than to think. And how are the followers supposed to “know”? By listening to the experts, of course.

A third possibility is that people confuse the standards of the thinker with those of an advocate. A good lawyer is an advocate for her client. She tries to defend her own side, and she considers the other side of the case only for the purpose of rebutting it. It is inconceivable that she would change her mind, at least in court. She deliberately takes sides, knowing that there is another lawyer on the other side, and a judge to ensure that the opponent is treated fairly. Similarly, in democratic groups, public-spirited people often advocate a point of view they do not necessarily accept but feel is neglected, knowing that the other side of the issue will be well defended. Thus the individual can approach an issue in a one-sided way with the comfort of knowing that the group as a whole will “think well,” in the sense of considering alternatives and counterevidence. There is room for one-sided advocacy as part of a larger process of two-sided (or many-sided) group thinking. Even in groups, however, respect and tolerance for the other side is required if the group is to function well. The danger is that people’s standards for thinking may be confused with standards for skill as an advocate. That is why debating teams do not necessarily encourage good thinking.

Distortion of beliefs by desires

We now consider the ways in which beliefs are affected by desires (long-term personal goals or temporary goals). These effects may help to explain irrational belief persistence, and they are also of interest in their own right. They have long been known to psychotherapists as types of bias that can seriously interfere with personal functioning, but they are probably just as insidious in the realm of politics.

Self-deception and wishful thinking. Persistence in an irrational belief can be a kind of self-deception in which we make ourselves believe something through the use of heuristics or methods of thinking that we would know (on reflection) are incorrect. By this view, if we were aware that our thinking was biased when we did it, we would not accept its results. This account assumes that irrational persistence occurs even in people who can recognize good thinking in general when they see it.

The best evidence for self-deception as a phenomenon in its own right comes from a study that has nothing to do with belief persistence. Quattrone and Tversky (1984) first asked each subject to take a cold pressor pain test, in which the subject’s arm was submerged in cold water until the subject could no longer tolerate the pain. After that, the subject was told that recent medical studies had discovered two types of hearts, one type being associated with longer life and fewer heart attacks than the other. The two types could be distinguished by the effect of exercise on the cold pressor test. Some subjects were told that exercise would increase tolerance in the good type of heart; others were told that it would decrease tolerance in the good type. Subjects then repeated the cold pressor test, after riding an exercycle for one minute.

In general, subjects’ tolerance changed in the direction that they were told was associated with a good heart. If they were told that exercise increased tolerance in people with good hearts, they managed to tolerate the cold water a bit longer, and vice versa. Only nine of the thirty-eight subjects indicated (in an anonymous questionnaire) that they had purposely tried to change in the direction associated with a good heart. The remaining twenty-nine showed just as large a change in tolerance (in the good direction) as the nine who admitted that they tried to change. In general, the nine who admitted trying to control their results did not believe that they really had a good heart, but the twenty-nine who did not admit to “cheating” did believe it. The nine admiters therefore failed in their attempt to deceive themselves, because they were caught in the act (by themselves, of course), and therefore they could not accept the results of the deception. The twenty-nine others were successful in keeping from themselves what they had done to create their beliefs.