

WORKING HED: Doubt Thyself

WORKING DEK: Does the fact that human thought has obvious biological underpinnings provide evidence of its fallibility? By David Pizarro

PQ: He vividly recalled hearing about the attack on the radio as he was listening to a ball game but eventually realized—Major League baseball games aren't played in December.

On Being Certain: Believing You Are Right Even When You're Not
By Robert A. Burton
(St. Martin's Press)

One Saturday morning when I was in high school, our house became the latest target in a string of neighborhood robberies. When asked to identify the intruder from a series of photographs, my sister (who was home at the time) selected one immediately but told the officer that she could not be *completely* certain about her identification. The lack of absolute certainty made the officer unwilling to use her identification as evidence of his guilt.

Legally, the police made the right call in not using my sister's judgment as evidence. The US Supreme Court has stated that confidence in eyewitness identification should be used as one of the primary criteria to determine whether the identification is accurate. This seems right, and it sounds logical. But according to Richard Burton, placing such a premium on certainty is profoundly misguided. In this, his first foray into non-fiction (he has written three novels), Burton investigates the sources of this feeling of certainty. Why are people so sure of themselves despite the overwhelming evidence that they are often wrong?

A neurologist by training, Burton mounts a scientific argument for skepticism of a very deep sort. By presenting a broad set of scientific findings, ranging from the disciplines of neurobiology to social psychology, Burton argues that the *feeling* that we know something is

most likely a biologically-based, involuntary, and unconscious process that cannot be trusted as a reliable marker that we *are* right. For Burton, the feeling of certainty is simply “...not a biologically justifiable state of mind.”

The bulk of *On Certainty* consists of a presentation of specific sources of scientific evidence that Burton believes should lead us to doubt this feeling of knowing. Drawing on his clinical background, he relies heavily on cases in pathology, such as schizophrenics who are absolutely confident in the truth of their delusions, and those suffering from *Cotard's Syndrome*, in which patients are convinced that they are dead despite the obvious evidence that their heart is beating (not to mention they are engaged in a conversation with the doctor).

But, as Burton realizes, the argument could not end here. Perhaps these pathological individuals are afflicted in such a way that their feeling of knowing doesn't correlate with the accuracy of their knowledge. In a normal individual, this might not be true. Burton quickly points out that one need not go far to demonstrate similar findings in the judgments of healthy individuals as well. He offers the example (well-known to most psychology students) of so-called “flashbulb” memories. When asked to recall the details of emotionally salient events such as the *Challenger* disaster, the assassination of JFK, or the O.J. Simpson verdict, many people possess vivid memories about where they were and what they were doing at the time. The psychologists Robert Brown and James Kulik, who first described such memories, argued that memory for these highly emotional events must be indelible. Yet when psychologist Ulric Neisser and others investigated the accuracy of flashbulb memories it turned out that they were often wildly wrong. Neisser points to his own memory of the attack on Pearl Harbor. He vividly recalled hearing about the attack on the radio as he was listening to a baseball game but

eventually realized that his own memory, despite his certainty, could not possibly be correct—Major League baseball games aren't played in December.

Perhaps we simply need to be more careful when it comes to our own beliefs and understandings. We should take the time to make judgments through a careful analysis of evidence and the application of logic. But Burton insists that even the most conscientious approach may be inevitably undermined because we rarely have willful control over what we believe. Burton uses evidence from cognitive science on neural networks, research on the role of the unconscious, and findings from behavioral genetics to argue that because we have little to no access on the unconscious processes that give rise to our intuitions, we simply know that something is true because it *feels* true, not because we deliberated about it. This point is not a new one—philosophers interested in epistemology (the branch of philosophy concerned with knowledge and belief) have long pointed out that many of our beliefs are not acquired through careful deliberation, and as such seem hard to justify. But Burton prefers the more recent evidence from behavioral genetics over the standard philosophical arguments. Citing research on religion and spirituality, which suggests they are genetically heritable, he reasons that we can hardly assume that our other beliefs don't also arise from processes inherently outside of our control. This is surely meant to make even the most stubborn of us humble about our own beliefs—and indeed it gives pause for thought. But he doesn't stop there.

Burton believes that the evidence he has presented should make us doubt the very possibility of human rationality and objectivity. For him, the biological underpinnings of human thought are at conflict with what he labels “the myth of the autonomous rational mind.” Knowing that thought is “merely” the firing of neurons in a particular sequence casts doubt on whether we are ever capable of the sort of rational thought so often attributed to human beings. Not only that,

but the inherently subjective nature of sensation and perception, according to Burton, should lead us to question whether we can even arrive at an agreed upon standard by which to measure the accuracy of our beliefs. For Burton, cognitive science has raised the possibility that "...the very building blocks of thought might be subject to involuntary, even genetic influences that make each of us 'private islands' of perception and thinking."

But while Burton's presentation of the research is accurate, the conclusion he draws is perplexing and not entirely convincing. The fact that human thought has obvious biological underpinnings does not, on the face of it, provide evidence of its fallibility. Our brains most likely evolved in such a way that we are capable of reliably acquiring true beliefs about the external world. Take, for example, our visual system. Evidence that we can "trick" vision with illusions (one source of evidence Burton believes should undermine our faith in the accuracy of perception) does not prove that our visual system is generally inaccurate. If it were, we could not have navigated our environment enough to survive. Likewise for many other neural systems, including the higher-level ones used to arrive at an everyday judgment. Indeed, the very point of much of the research on perceptual and cognitive illusions is that the brain, by and large, is a highly adaptive mechanism. While the "errors" point to the mechanisms underlying mental processes, they are the exception, not the rule.

In the end, however, Burton provides a compelling and thought-provoking case that we should be a bit more skeptical about our beliefs. He guides the reader toward a healthy suspicion about any claim that is framed in absolute terms. Indeed, this seems to be one of his primary objectives, viewing an attitude of absolute certainty as the root of many societal ills. Along the way, he also provides a novel perspective on many lines of research that should be of interest to readers who are looking for a broad introduction to the cognitive sciences. But despite his more

radical claims, even Burton cannot be too persuaded by his deep skepticism, given the thoughtful analysis he has provided to convince us of the truth of his own arguments. —*David Pizarro is assistant professor of psychology at Cornell University*