

The Seductions of Pretentious Bullshit

An Empirical Study

BY JAMES ALLAN CHEYNE AND GORDON PENNYCOOK

CONSIDER THESE TWO OBSERVATIONS ON THE human condition:

What a piece of work is a man! How noble in reason, how infinite in faculty!

—Hamlet, Act 2, Scene 2

There's a sucker born every minute.

—Phineas T. Barnum (*wrongly attributed*)

HOW DO WE RECONCILE SUCH CONFLICTING VIEWS OF human intelligence and reasoning? The dictionary definition of a sucker, the very opposite of “noble in reason,” is an easily deceived person, a dupe. A cynical view is that the Barnum statement is in need of revision such that—at least as of June 30, 2015, according to the CIA World Factbook—the actual birth rate of suckers is closer to 255 per minute. For, at one time or another, most of us have been suckers for at least some bullshit—whether it be in advertising, politics, pseudoscience, or extraordinary and paranormal claims. Why? And why are some of us (seemingly) so much more likely to be duped than others? And why is there so much bullshit anyway?

Bullshit: An Example

By way of example, considering the following:

...a liberatory science cannot be complete without a profound revision of the canon of mathematics. As yet no such emancipatory mathematics exists, and we can only speculate upon its eventual content. We can see hints of it in the multidimensional and non-linear logic of fuzzy systems theory; but this approach is still heavily marked by its origins in the crisis of late capitalist production relations. Catastrophe theory, with its dialectical emphases on smoothness/discontinuity and metamorphosis/unfolding, will indubitably play a major role in the future mathematics; but much theoretical work remains to be done before this approach can become

a concrete tool of progressive political praxis.

This bit of gobbledygook is from the mathematician and physicist Alan Sokal, who in 1996 published a startling article that went on for pages and pages in this style, in the journal *Social Text*, a leading postmodern cultural studies publication.¹ The purported goal of the article was to “draw the attention of readers to...important developments in physical science and to sketch as best [he] can their philosophical and political implications” (p. 218). As Sokal subsequently revealed, however, his true intention was to parody and test intellectual standards of postmodernist scholarship.² One might have thought his lampoon would have been rather obvious. But no. The failure of the *Social Text* editor and reviewers to recognize Sokal’s intellectual scam is a classic case study in seduction by pretentious bullshit. Most bullshitters sprinkle their text with such drivel in a manner uncritical readers may miss. Sokal laid it on with a trowel and still got away with it. How does this happen?

Defining Bullshit

In a rare bestseller for a philosopher titled *On Bullshit*, Harry Frankfurt defines bullshit as *something designed to impress but that is created without any direct concern for the truth*.³ This distinguishes bullshit from lying—a deliberate manipulation and subversion of the truth as known by the liar. As he puts it: “It is impossible for someone to lie unless he thinks he knows the truth. Producing bullshit requires no such conviction.” On this view, not all bullshit is actually false. Much bullshit, indeed, most of what we analyze in this essay, is neither true nor false. In order for a statement to be judged as true or false, it must be meaningful. Moreover, though the bullshitter need not betray a concern for conveying truthful statements, there is clearly a concern for the *appearance* of truth; that is, its verisimilitude, or truthiness in Stephen Colbert’s memorable descriptor. A truly

skillful bullshitter resides on the edge of meaningfulness, thereby producing claims that seem to mean something profound but are sufficiently elusive to challenge critical analysis.

Frankfurt is not unique among philosophers and intellectuals in his interest in addressing bullshit. We are, however, unaware of social or cognitive scientists having investigated bullshit empirically. Whereas

philosophers have been primarily concerned with the goals and intentions of the *bullshitter*, our interest is in the psychological factors that predispose one to become or to resist becoming a *bullshittee*. Our general susceptibility to accepting bullshit-likely results, we suggest, is because most of us have a generally charitable attitude toward ambiguity. Offering an explanation of why we are so charitable is our main task. Moreover, common observation suggests that we are not all equally susceptible to bullshit. We also address this issue. We do not claim to provide a complete explanation for the prevalence of bullshit or of its seductive powers. The limited, but we think essential, question we address here is: what cognitive mechanisms (or their lack) produce an inherent susceptibility to bullshit?

The Case of Pretentious Bullshit

We focus here on what we will refer to as “pretentious” bullshit. By pretentious we mean an attempt to impress by affecting greater profundity, insight, learning, or importance than is actually warranted by reason or evidence. Not all bullshit is pretentious, but pretentious bullshit is prototypical bullshit. We are all, in varying degrees, drawn to impressive sounding claims that are presented as deeply meaningful insights but which are, under scrutiny, often found to be vacuous. Being vacuous, bullshit is easily dismissed as trivial rubbish. Indeed, bullshit statements are sometimes simply relatively harmless bridging statements enabling us to close gaps in our narratives and arguments. Less be-

nignly and, unfortunately all too commonly, bullshit is often the unwarranted and extravagant conclusion of our patter. Of still greater concern, in addition to outright lying, it is an essential tool of the huckster, the charlatan, the con artist, the quack, in short, anyone willing to take advantage of our gullibility. This sort of bullshit represents a sometimes extreme, occasionally outrageous, point on what could be considered a spectrum of bullshit.

Consider the statement “Attention and intention are the mechanics of manifestation.” It seems syntactically correct. It sounds impressive. What does it mean? At first glance it seems to mean something, perhaps even something profound or insightful. One’s mind is drawn to making something of this intriguing sentence. It radiates verisimilitude. It overflows with truthiness. We have wrestled with making sense of this sentence for a while now and have been defeated despite some background in philosophy and science, and

most particularly in attention and intention. One thing is clear, however, the statement aspires to mean something, because we did not make it up. It is in fact a “tweet” sent by Deepak Chopra, author of such bestselling books as *Quantum Healing* and *The Soul of Leadership*. There is now even a website (www.wisdomofchopra.com) that generates fictional Deepak Chopra quotes and offers a quiz in which you try to guess whether a given quote is genuine or fake. It’s hard to tell the difference.

The Cognitive Psychology of Bullshit

What makes someone particularly susceptible to pretentious bullshit? It is possible that some individuals explicitly, as a matter of principle, approach novel and exciting claims with a spirit of openness and a strong expectation of meaningfulness. Admirable as this attitude may be, we are also often misled by motivated thinking that can blunt critical analysis as surely was the case for the editor and

reviewers at *Social Text* who fell prey to Sokal's deception. Conversely, others may cultivate a dismissive attitude to all new, and especially impressive sounding, information. Though such explicit personal stances may affect bullshit receptivity, we argue that there may be a more fundamental bias in the way humans process information that makes us particularly susceptible to bullshit over, above, and before such explicit biases.

An intriguing theory of interpretation, following from Spinoza, through the hermeneutic philosopher, Hans-Georg Gadamer, to contemporary social-cognitive psychology, posits we must first believe something to comprehend it and, only then, to be able to unbelieve it. As the Harvard psychologist Dan Gilbert puts it most engagingly in the title of an article: "You can't not believe everything you read."⁴ The essence of this argument is that people have an implicit response bias toward accepting new information as meaningful and true. It is only *after taking some proposition seriously and reflecting upon it is it possible to rationally reject it*. Such an asymmetry between believing and unbelieving would provide the basis for a powerful explanation for the prevalence of our receptivity to bullshit. That is, it requires more cognitive effort and, critically, more time, to reject than to accept bullshit.

Pretentious bullshit presents a further challenge to our cognitive processing inasmuch as its very meaning is often at issue. Thus, one must first decide what, if anything, the accepted statement might mean and then decide whether or not it is true. In the case of particularly vague or difficult statements, one may need to accept and then reject several interpretations. Moreover, the degree of difficulty experienced achieving successive interpretations would contribute to a feeling of depth or profundity of the statement, perhaps further biasing us to accept it not only as true but also as deeply important. In the words of the cognitive scientist Dan Sperber: "All too often, what readers do is judge profound what they have failed to grasp."⁵

The foregoing offers an explanation for the general susceptibility of humans to accept bullshit as both meaningful and true. But what of individual differences in the reception of bullshit? What makes a good skeptic?

We propose that a fundamental individual difference is to be found in the nature of the further processing required after initial reception. First, however, we explicate two possible cognitive mechanisms operating in two phases of understanding. Recently a good deal of research in reasoning and

decision making has been guided by dual-process cognitive theory that distinguish two types of cognitive processes: Type 1 processes are rapid, automatic, effortless, and largely unconscious, such as our ability to analyze linguistic structure and decode natural languages in everyday conversations; Type 2 processes are slower, effortful, deliberative (i.e., explicitly conscious), and require working memory to keep track of various contents of speech and their agreement with one another as well as with one's background knowledge.

These two types of thinking map onto the older notions of interpretation rather tidily. Type 1 processes are responsible for the initial acceptance of incoming semantic and linguistic information through automatic processes that sort out parts of speech and their relations. Type 2 processes then come into play in subsequent analyses for reasonableness, veridicality, and veracity. As Type 2 thinking is relatively time consuming and effortful, we often forgo or economize Type 2 thinking, a human characteristic sometimes referred to as "cognitive miserliness." As we will argue, our natural cognitive miserliness is often a false economy that makes us vulnerable to bullshit. Such a bias toward miserliness would also contribute to the bullshit blindness of motivated thinking that makes us accept what we want to hear. If the initial interpretation is satisfying, why proceed to undermine it with critical thought?

To be a good reasoner, one must, of course, have the *capacity* to do whatever cognitive computation is necessary. This we refer to, interchangeably here, as cognitive ability or intelligence. Also necessary, however, but more neglected in cognitive research, is a *propensity* or readiness to engage effortful reasoning processes, what has come to be called analytic cognitive style or *analyticity*, a kind of thinking disposition. Thus, some individuals will possess a greater capacity to carry out the additional processing that is required to evaluate the ostensive truth claims or meaningfulness of the pretentious bullshit. Others will be characterized by a stronger or more consistent tendency to make the effort to do so. It follows therefore that those who are more able to do either or both more effectively will be probabilistically more likely to detect and reject bullshit.

Testing Bullshit

Let you think that we have simply presented you with a bullshit explanation of bullshit susceptibility, we feel obliged to provide you with some evidence

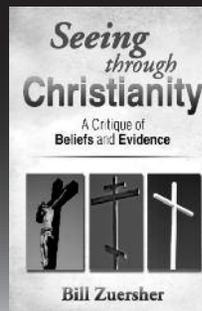
to enable you to evaluate the truth value of our claims. Our approach is straightforward (see our technical papers for details).⁶ First, we assessed individuals' cognitive capacity using a variety of standard measures of intellectual ability. We then assessed analytic cognitive style, again using a variety of standard tests. We also presented these individuals with a number of meaningless but impressive sounding statements and asked them to rate their profundity. The meaningless statements presented were computer generated syntactically correct statements containing impressively learned scientific, philosophical, and metaphysical words (jargon). The only constraint lacking was that the resulting statements actually mean something.

Assessing Type 2 Thinking

Measures of analytic cognitive style are less well known than measures of intellectual ability. We therefore discuss one of the main measures of analyticity in current use, the Cognitive Reflection Task.⁷ Consider the following problem: A bat and ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost? If the first answer that popped into mind was 10 cents, consider yourself in good company. This is by far the most common answer to this problem. Consistent with the different types of thinking, this first self-generated thought initially feels correct. In terms of dual-process theory, it is a Type 1 or automatic response. Further analysis, however, reveals that 10 cents cannot be the correct answer (e.g., if the ball costs 10 cents, then the bat must cost \$1.10 and they would cost \$1.20 in total or, alternatively, given that the total cost is \$1.10 and ball costs 10 cents, the bat must cost \$1.00, which is only 90 cents more than the ball). To arrive at the correct answer (5 cents), one must engage "Type 2" analytic reasoning to override the initial intuitive response.

Generating Bullshit Statements

One set of statements was derived from Seb Pearce's "New Age Bullshit Generator" (sebpearce.com/bullshit), which randomly selects buzzwords from a large corpus and puts them together in sentences. Examples include "We are in the midst of a self-aware blossoming of being that will align us with the nexus itself" and "Today science tells us that the essence of nature is joy." We also used a number of statements from the aforementioned "Random Deepak Chopra Quote Generator," created by Tom Williamson, which works the



SEEING THROUGH CHRISTIANITY A Critique of Beliefs and Evidence

By Bill Zuersher

The only book you'll ever need to read about Christianity—a critical overview of Christian beliefs and the evidence for them.

Zuersher begins with the root problems of virtually all religions—suffering and death—and proceeds to their supposed resolution through the sacrifice of Jesus. He makes the case that Judaism, Zoroastrianism, Greek philosophy and mystery cults coalesced to form the Christian belief system. The result, he argues, is not revealed truth, but a human patchwork of unwarranted assumptions and logical flaws.

Entertaining throughout, it is a must read for skeptics, apologists, and anyone interested in the world's largest religion or the culture wars behind today's politics. An invaluable resource for students and teachers, writers and debaters.

All major doctrines are critiqued: Original Sin, Atonement, Trinity, Second Coming and much more.

Visit SeeingthroughChristianity.com for more information
Available now at online booksellers

ANATOMY OF SPIRITUALITY PORTRAIT OF THE SOUL

by Chander Behl

The domain of spirituality, separated from its theological overburden, believes in the existence of a spiritual self, presumed to be distinctly separate from the psychological self—also known as the soul or spirit.

This book argues that the premise of the soul is created through the magic of language, maintained through the marvel of the brain's biochemistry, and sustained through the mirage of the psychological workings of the brain.



For more information go to
www.chanderbehl.com

same way but uses buzzwords from Deepak Chopra's Twitter feed. Examples include "Imagination is inside exponential space time events" and "Wholeness quiets infinite phenomena."

We ran four studies with over 800 participants in total. In each study, participants who rated the profundity of the bullshit statements were measured for cognitive ability (standard intelligence tests) as well their analytic reasoning style. Some of the tests included problems similar to the bat and ball problem.

Some Findings

Across all studies to date and for various measures, individuals with higher intelligence and analytical reasoning test scores consistently rated bullshit statements as less profound than those who got lower scores. But we also had to consider the fact that many of the features of pretentious bullshit are shared by poetry as well as the many pithy and genuinely insightful observations that inspire us about love, life, and the universe. This suggests the plausible hypothesis that those with higher intelligence and higher analytic reasoning scores are simply more conservative in their judgments about profundity. So we needed to make a more precise test of the dual-process hermeneutical hypothesis of bullshit detection. Specifically, we wanted to assess whether analytical thinkers were specifically less likely to attribute profound meaning to bullshit statements compared to genuinely insightful statements, the meanings of which should become elucidated rather than evaporated during analysis (e.g., "A wet person does not fear the rain"). As a further assessment of the validity of the profundity statements, we also asked if participants were indeed assigning greater profundity to bullshit and insightful statements than to mundane statements with no pretensions to profundity (e.g., "Newborn babies require constant attention").

When we compared the profundity ratings of randomly generated bullshit statements with meaningful motivational or inspirational statements we found that the different types of statements were moderately highly positively correlated. Thus, there was rather clear evidence for individual differences in a general relative charitableness in granting profound meanings to both meaningful and meaningless statements. Nonetheless, our participants did give the highest profundity ratings to meaningful inspirational statements and the lowest to mundane statements, with bullshit statements being intermediate. The differences between each type of

statement were all highly significant. So we knew our participants were making coherent and predictable judgments about profundity between the different types of statements.

Most critically for the two-process theory, individuals scoring high on analytic reasoning again rated bullshit statements as less profound than did individuals with lower scores. They did not, however, rate meaningful inspirational statements significantly lower than low scorers. In sum, higher scoring analytic individuals when compared to lower scoring analytic participants were particularly critical of meaningless bullshit statements. They may also have had some general tendency to be somewhat less generous in their judgments of profundity.

Finally, to go beyond artificial quasi-random computer generated bullshit statements, we selected actual statements made by Deepak Chopra to be judged by individuals scoring high and low in analytic reasoning. The results were essentially identical to those for the artificially generated bullshit statements. This was pretty much a forgone conclusion, however, given that bullshit ratings for Chopra statements and randomly generated bullshit statements were very highly correlated; so highly correlated indeed as to constitute parallel forms of a single test. In terms of our results, Chopra statements were indistinguishable from statements deliberately designed to be meaningless bullshit.

In these studies we have also found that individuals rating both artificial computer generated bullshit and human generated bullshit as more profound also expressed stronger beliefs in supernatural phenomena, whether paranormal (astrology, ESP, etc.) or conventionally religious (angels, demons, etc.). Similar results were obtained for beliefs about the efficacy of complementary and alternative medicine and conspiracy theories though the findings for conspiracy theories were relatively weak and variable. These supplementary findings are consistent with the results of our earlier research in which we found paranormal and supernatural beliefs to be negatively correlated with both intelligence and analytic reasoning. They also link credulous responses to the bullshit statements with skepticism about supernatural and pseudoscientific claims.

In summary, those who accept bullshit statements as more profound perform more poorly on various tests of intelligence as well as analytic cognitive style. Although intelligence and analytic style are moderately positively correlated, it is not the

case that more analytic individuals are more skeptical of bullshit because they are more intelligent. Intelligence and analyticity each predict bullshit skepticism even when controlling for the other. Indeed each, across studies, makes approximately equal contributions to the prediction of bullshit skepticism.

Conclusions

Following a 2010 debate about God on ABC's *Nightline* featuring Deepak Chopra and Jean Houston against Sam Harris and Michael Shermer, held at the California Institute of Technology (<http://bit.ly/1lgy4Xa>), in an exchange with Chopra during the Q&A, Caltech physicist Leonard Mlodinow commented that he "never really [ran] across a definition of consciousness that [he has] understood." In response, Chopra offered the following definition of consciousness: "A superposition of possibilities." Mlodinow responded: "I know what each of those words mean. I still don't think I know... [interruption by applause]". This response, we suggest, succinctly illustrates what it is to be an analytic bullshit detector.

Fortunately, one does not need to be a brilliant physicist to detect bullshit. At least some of the participants in our studies (who were presumably not physicists)—the more analytical and intelligent participants—provided evidence that they were able to recognize pretentious nonsense. There probably is not a great deal that can easily be done about our intelligence, but cultivating a cognitively reflective style of evaluating information may be possible. Earlier, we described Type 2 processing as taking *both more effort and more time*. Other studies of analytic thinking have found that Type 2 thinking is subject to substantial interference by the in-

roduction of time pressure.⁸ There are good reasons bullshitters and con artists are described as "fast talkers." The bullshitter delivers his staccato patter quickly and moves on before questions arise while the con artist pressures the mark for a quick response. It is not only our own cognitive miserliness that make us vulnerable to flimflam. So do contexts that call for immediate decisions or conversations that move on quickly, thereby foreclosing critical analysis. A simple strategy for dealing with bullshit and dubious claims of all sorts is to stop and think, and *take the time and effort* to evaluate claims. This need not and should not be interpreted as being closed minded or excessively critical, simply mindfully reflective. There is no silver bullet to avoid bullshit, but resisting miserliness in one's thinking is surely a good start.

Although Type 2 thinking is more effortful than Type 1, detecting fallacious arguments or meaningless claptrap need not take a great deal of time or energy. Participants who correctly solve bat and ball types of problems take only a little longer than those who fail to do so. Nor does solving such problems require abstruse knowledge or skills. Most people can readily and quickly understand the logic of the correct answer and the limitations of the rapid, automatic response of the Cognitive Reflection Test. A little time and a little thought can go a long way.

One more thing. The chemist, writer, and Auschwitz survivor, Primo Levi, left us with many deeply moral observations, and at least one wise cognitive rule, which perhaps deserves also to be considered a moral one. Life under fascist tyranny, he said, taught him to prefer small, verifiable statements to big, rhetorical ones.⁹ Sounds like a good guide to resist bullshit as well as oppression. **S**

REFERENCES

1. Sokal, A. D. 1996. "Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity." *Social Text*, 14, 217-252.
2. Sokal, A. D. 1996b. "A Physicist Experiments with Cultural Studies." *Lingua Franca*, 6, 62-64.
3. Frankfurt, H. G. 2005. *On Bullshit*. Cambridge: Cambridge University Press.
4. Gilbert, D.T., Tafarodi, R.W. and Malone, P.S. 1993. "You Can't Not Believe Everything You Read." *Journal of Personality and Social Psychology*. August, 65/2: 221-233.
5. Sperber, D. 2010. "The Guru Effect." *Review of Philosophical Psychology*, 1, 583-592, 585.
6. Pennycook, G., Cheyne, J. A., Seli, P., Koehler, D. J. and Fugelsang, J. A. 2012. "Analytic Cognitive Style Predicts Religious and Paranormal Belief." *Cognition*, 123, 335-346; Pennycook, G., Cheyne, J. A. Barr, N., Koehler, D. J., and Fugelsang, J. A. 2015. "On the Detection and Reception of Pseudo-Profound Bullshit." *Judgment and Decision Making*; Pennycook, G., Fugelsang, J. A., and Koehler, D. J. 2015. "Everyday Consequences of Analytic Thinking." *Current Directions in Psychological Science*.
7. Frederick, S. 2005. "Cognitive Reflection and Decision Making." *The Journal of Economic Perspectives*, 19, 25-42.
8. Evans, J. St. B. T., and Curtis-Holmes, J. 2005. "Rapid responding increases belief bias: Evidence for the dual-process theory of reasoning." *Thinking & Reasoning*, 11, 382-389.
9. Dersiewicz, W. 2015. "Why Primo Levi Survives." *Atlantic Monthly*, December.