

Are we more receptive to bullshit when it comes from a source we trust?

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Abstract

The current work sought to explore the relationship between trust and pseudo-profound bullshit receptivity. There is currently a gap in the literature when considering how trust in a source will impact an individual's receptivity to pseudo-profound bullshit. An individual's trust in a given source will influence how content from that source is evaluated, and consequently how it is perceived (Hovland & Weiss, 1951; Lorge 1936). Pseudo-profound bullshit is bullshit that is constructed in a way that sounds impressive due to obscure and complex language but is empty of meaning (Pennycook et al., 2015b). Two studies were designed to explore the relationship between information about who the source of the content is, participants opinion of that source, and pseudo-profound bullshit receptivity. Study One (N = 163) was meant to replicate and extend previous findings of Pennycook and colleagues' 2015(b) study by including another individual to provide content, and to replicate findings with respect to the Cognitive Reflection Task (CRT). Study Two compared conditions of Source (source provided or not) and opinions (reliability, fandom) to see how these conditions affect bullshit receptivity. It was thought that a positive opinion of a presented source would result in higher profundity ratings, whereas a negative opinion with a source presented would result in lower profundity ratings. Results were expected to be similar regardless of opinion when no source information was provided. Results from Study One were as expected, with strong ($r > .70$) positive correlations between real and generated phrases, which correlate negatively with the CRT. This implies that the real and generated content are psychologically indistinguishable. Study Two proceeded but found no main interaction for source condition and opinion. Presence or absence of the given source did not have a direct impact on profundity ratings. Limitations and future directions are discussed.

Keywords: bullshit, pseudo-profound bullshit, source, trust

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Dedication

There are multiple people I want to thank for their support throughout this project. My parents and siblings, for understanding when I disappeared for stretches of time to work. I would also like to thank my grandmother for her interest in and discussion on the project.

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“All too often what readers do is judge profound what they have failed to grasp”
(Sperber, 2010)

Introduction

The Psychology of Bullshit has become a growing body of research in recent years. People have investigated who is more likely to be susceptible to bullshit and what factors can influence this receptivity (Pennycook et al., 2015b). Other studies have looked at behavioural implications of the receptivity like political (Pfattheicher & Schindler, 2016) and pro-social behaviours (Erlandsson et al., 2018), or integrating the concept of bullshit receptivity into pre-existing Psychological concepts like the Openness/Intellect simplex of The Big Five model (Bainbridge et al., 2019). There is a gap in the literature when considering a relationship between trust for an information source and bullshit receptivity. Are people more susceptible to bullshit when it comes from a source they trust?

Bullshit

In the broadest definition, bullshit is that which “implies but does not contain adequate meaning or truth” (Pennycook et al., 2015b). Bullshitters are thought to be careless communicators whose main concerns are to be convincing and display competence with no regard for the veracity or validity of their claims (Brown et al., 2019; Petrocelli, 2018; Walker et al., 2019). It is implied that what the bullshitter is communicating may be true, false, or completely vacuous (Wakeham, 2017). The statements a bullshitter presents are considered bullshit because they are created without a concern for the truth (Frankfurt, 2005). In this way, bullshit is defined by the sender, not the perceiver (Pfattheicher & Schindler, 2016). In 2016, Dalton argued that statements generated by a computer could be subjectively profound, depending on what the perceiver found in them. This was disputed, as statements generated by a

computer contain no intention to be meaningful or any concern for accuracy, therefore they are defined as bullshit (Pennycook et al., 2016). Phrases that seem like they might contain some profound meaning fit into the category of pseudo-profound bullshit.

Pseudo-profound Bullshit

Pseudo-profound bullshit is characterized by obscure language, which tends to be judged profound by individuals who are less reflective, have lower cognitive ability, are more prone to ontological confusions, and are more likely to hold religious and paranormal beliefs (Pennycook et al., 2015b). This category of bullshit is used “to impress rather than inform; to be engaging rather than instructive” (Pennycook et al., 2015b). In these instances, jargon is used to impress upon the reader some sense of grandeur, which may result in a reader failing to adequately analyze the content and believe that it contains profound meaning. Readers may come to think that what they have taken in is too complex for them to understand and assume that the source is more competent than they are (Sperber, 2010). The cause may be that a lack of controlled, active processing leads to acceptance of pseudo-profound bullshit (Pennycook et al., 2015b).

Analytic Thinking

Pseudo-profound bullshit statements can be generally difficult to read and understand. If an individual does not have both the ability and the willingness to process what they are reading they may not realize the vacuous nature of the content they are taking in (Pennycook et al., 2015b; Pfattheicher & Schindler, 2016). When considering the thinking processes that may or may not lead to the detection and reception of pseudo-profound bullshit, it is useful to consider a Dual Processing Model. In this model thinking processes are divided into two types. Type 1 is the intuitive processing system. This type of processing accounts for humans as cognitive misers, who seek to reserve cognitive resources (e.g. working memory capacity) by making use of

heuristic, unsystematic processing when intuitive responses are available (De Neys & Pennycook, 2019; Pennycook & Rand, 2019; Petrocelli, 2018). Type 2 processing is characterized by deliberative and effortful processing and is useful in resolving conflict (De Neys & Pennycook, 2019).

When people use automatic thinking, it is thought that information is taken as true automatically, then it is later further processed with Type 2 processing if modification is necessary (Evans & Stanovich, 2013). Modification can occur when conflict is detected (De Neys & Pennycook, 2019). Conflict arises and can be detected when there is competition between logical intuitions (Pennycook et al., 2015a). The more similar the strengths of the intuitions, the higher the likelihood that the necessary override will occur to switch to Type 2 processing to resolve the conflict (De Neys & Pennycook, 2019). Conflict resolution can consist of either rationalization, meaning the verification of one of the Type 1 intuitions, or decoupling where Type 1 intuition is falsified (Pennycook et al., 2015a). When the override is successful deliberative Type 2 processing can take over.

However, successful override does not indicate successful conflict resolution. When people detect conflict, there is no guarantee that they resolve it. The deliberative processing may take place but may be used to either override the intuitive response or to rationalize and justify it (De Neys & Pennycook, 2019). This does not necessarily mean that an individual is confident in the resulting outcome. A reasoner may still be aware of the questionable nature of their intuition (De Neys & Pennycook, 2019). The problem becomes the individual differences in the willingness to spend the extra time thinking about the content. Individual differences in willingness to engage in analytic thinking are more predictive of reasoning performance than ability (Pennycook et al., 2015a). Therefore, a key factor in bullshit receptivity may be the willingness to be aware and

engaged when passing judgements about the nature of some content. How much someone values or enjoys analytic thinking may contribute to the probability that they engage Type 2 processing, regardless of the content (Pennycook et al., 2015a).

Context may be a factor that contributes to willingness to engage with content. When a reasoner encounters content within a certain context there are opinions and biases that individual will bring with them. Processing may change depending on contextual information (Lorge, 1936). If an individual observes some pseudo-profound bullshit content attributed to a source they are a fan of, it may be the case that no interfering intuition will arise, conflict detection and override would fail, and an individual may retain a heuristic intuitive response. This could mean that an individual would take the pseudo-profound bullshit to be meaningful and profound on the authority of the source that they trust. Alternatively, if the content was attributed to a source the individual dislikes a second logical intuitive response may be cued. This would create competition, leading to a higher likelihood of further processing of the pseudo-profound bullshit. For this reason, context should be considered when exploring bullshit receptivity.

Trust & Source

Even when the nature of pseudo-profound bullshit produces confusion, the induced uncertainty may not facilitate deliberative processing that leads to a logical outcome (Sperber, 2010). Instead, a reader is likely to make a guess about the truthfulness of the content, and if the vacuous nature of the content is not specifically realized then the reader is more likely to accept the content as true and profound (Bråten et al., 2011). Essentially, recognizing pseudo-profound bullshit requires engagement with the content, which is dependent on an individual's motivations and abilities (Bråten et al., 2011; Nilsson et al; 2019). The willingness to engage analytically with the content may be affected by how an individual may feel about the source of that content.

If the information comes from a source that the individual has deemed trustworthy, they may be more likely to accept the content as valid without any further processing (Nilsson et al., 2019). In the same understanding, an untrusted source may induce a more critical mindset that will lead the individual to a more deliberative analysis of the content.

Due to the likelihood that external information will be utilized to evaluate the content of what an individual is reading, the judgements of trustworthiness of a source should be considered. People accept faulty information as valid and true based on trust, as human beings are inherently subject to deception and incompetence (Wakeham, 2017). In trust there is always unbalance, as the trustor has no empirical way to verify the claims or intentions of the trustee (Tsfati & Capella, 2003). Instead of verifying, people build trust based on a variety of other factors. Factors used to evaluate the basis of trust include previous knowledge, contextual cues, evaluations of social performance, emotional investments, and judgements of authority (Wakeham, 2017). These factors are all contributors to a general opinion for the trustworthiness of a specific source; this is key to predicting how reliable or unreliable information might be (Bråten et al., 2011).

Human beings use their own personal ideas about evaluating social performance and emotional investments to determine who they consider trustworthy sources of knowledge (Bråten et al, 2011). However, these personal ideas are shaped by how people collectively recognize, evaluate, and communicate what they consider to be knowledge (Wakeham, 2017). The credibility of a source, a central element of trust, may be communicated socially and influence an individual's trust for that source (Holvand & Weiss, 1951; Tsfati & Capella, 2003). It is logical that negative information about the source results in a reduction of trust (Bozoyan & Vogt, 2016), but the opposite is not necessarily true. Negative information is more salient than positive

information when making judgements of trust. Positive information will not necessarily lead to an increase in trust. However, admiration implies little to no negative information has had any impact and makes it easily understandable that the reader will also credit the content of the text (Bråten et al., 2011).

The judgement of the source of the content, and therefore the content as well, may be based on ascribed judgements of authority. Authority elicits trust based on a view of an individual's competence and reliability that spreads via repeated acts of communication through a social group (Sperber, 2010). Trust in authority may give reason to accept the validity of an argument without examining its steps (Sperber, 2010). Authority tends to be granted to people who are in prestigious positions because they have demonstrated some amount of competence in a given area. Agreement is higher when statements are attributed to "high prestige" sources (Hovland & Weiss, 1951). Authority carries power, and when people accept that power as valid, their processing my change.

Readers who have difficulty understanding the content of a text will also have a harder time trying to judge whether it should be trusted, and will use more superficial characteristics in its evaluation (like word choice, so if the words sounds impressive, the confused reader may be more likely to rate it as such) (Bråten et al., 2011). Untrustworthy sources and cues that threaten the meaningfulness of content elicit greater skepticism and potential for a reaction of rejection (Brown et al., 1951; Hovland & Weiss, 1951). The human brain cannot process massive amounts of information quickly for extended periods of time like computer processors (Tsfati & Capella, 2003). Therefore, they rely on shortcuts like heuristics (e.g. "expert statements can be trusted") to reach otherwise complicated decisions (Bråten et al., 2011; Tsfati & Capella, 2003).

It has been established that the source of information matters and can affect the interpretation of content. In 1936, Lorge demonstrated that crediting different authors for a quotation can alter the perception of the message. These results were established by having both experienced and inexperienced poets review quotations with or without a given source. Regardless of expertise, agreement was higher when the quotations were attributed to a prestigious or famous author (Lorge, 1936). This may be based on trust in the competency of a well-known author, or on the authority of someone in a prestigious position.

Adding obscure language from a source adds to the difficulty of detecting the vacuous nature of pseudo-profound bullshit. When a text is deliberately formulated to be opaque, it directs one to a richer interpretation; this allows the reader only two options (Sperber, 2010). The first option is to decide that the author has no justified reason to be so obscure and pass a negative judgement. An example of this is someone who is not a fan of Deepak Chopra detecting the vacuous nature of a statement in Chopra's Twitter feed. For example, "Attention and intention are the mechanics of manifestation" is a real tweet from Chopra that was determined to be psychologically inseparable from pseudo-profound bullshit by Pennycook et al. (2015b). An individual's familiarity with and opinion of this specific source may have led them to a more cautious evaluation, and therefore more thorough and deliberative processing. This option is unlikely when the reader has high confidence and trust in the source (Sperber, 2010). So, if the individual was instead a fan of Deepak Chopra, they might be more inclined to take the second option. The second option that readers are left with is to assume that the author was trying to convey a thought too deep for plain and simple expression; even if no satisfactory interpretation is ever arrived at (Sperber, 2010). If this is the case, the evaluation will likely be based on external criteria, like the superficial information about the source, because the content itself is

too vague to evaluate. So, while the statement might be too obscure to effectively convey the intended meaning, some individuals will still accept the content as profound and meaningful on the basis of their trust in the source of that content (Sperber, 2010).

Sperber argues that obscurity should not be held against authors, as there may be complex concepts above some individuals' capability for understanding. However, obscurity certainly should not work in an author's favour (Sperber, 2010). Readers should not assume that complex content is too profound to comprehend. Instead they should use effortful, deliberative, analytical thinking to see what it means, or see through its lack of meaning. It has been said that "impenetrability indicates profundity" (Sperber, 2010), in the sense that profundity is defined as "of deep meaning; of great and broadly inclusive significance" (Pennycook et al., 2015b). If one lacks the motivation and ability to "penetrate" the content, then they may fail to detect any conflict and maintain that the vacuous content is profound.

Current Investigation

The purpose of the current work was to explore the relationship between receptivity to pseudo-profound bullshit and source of that bullshit. Developing an understanding of how contextual information contributes to bullshit receptivity could be an important part of determining how to minimize bullshit receptivity and create awareness for human biases that may contribute to falling for the bullshit that runs rampant through the world today. To examine this relationship two studies were designed. The purpose of the first study was to replicate and extend previous work of Pennycook and colleagues (2015b). Results of the CRT were expected to correlate negatively with profundity ratings, inline with previous findings as those who are more receptive to pseudo-profound bullshit tend to score lower on the CRT (Pennycook et al., 2015b). Strong positive correlations between the different types of content from Deepak Chopra

and the generator dedicated to Chopra were also expected, similar to those found by Pennycook et al. (2015b). Extension of previous work comes from introducing Jordan Peterson as another source of content. Study Two proceeded by utilizing the participant's opinions of both sources, as well as the presence or absence of authorship with the content from Study One. Only the real phrases from Study One were rated in Study Two, as they were determined to be psychologically indistinguishable from the generated bullshit statements in Study One. Study Two was meant to determine if a main effect of source condition and opinion (of the given source) exists. The dependent variable for both studies was the profundity ratings of the provided content.

Study One

Participants were asked to rate the profundity of 40 statements in randomized order on a five-point scale from 1 (not at all profound) to 5 (very profound). Each of the 40 statements was either a real quotation from Deepak Chopra or Jordan Peterson, or a pseudo-profound bullshit phrase generated by a computer program. These computer generators operate by choosing random buzzwords out of an aggregate based on a specific individual. The computer combines the chosen buzzwords in an order that has syntactic structure but is otherwise random. Authors were not indicated with any of the statements. Here we argue that a strong correlation ($r > .70$) between real and generated content categories indicates that the four types of content (real or fake from either source) are psychologically indistinguishable.

Method

All measures and data exclusions are reported.

Participants

Participants were recruited to take part in the study in return for pay via Amazon's Mechanical Turk. The initial sample size for Study One was 212 participants. Of that number, 11

did not finish the study, four failed the attention check (see Appendix A), and 34 reported that they responded randomly; all these cases were excluded. Sample size for data analysis was $N = 163$ (93 male, 64 female, 2 transgender female, 1 transgender male, 1 trans/non-binary, and 1 prefer not to answer; $M_{\text{age}} = 37.01$, $SD_{\text{age}} = 10.84$, range 21-70).

Materials

Sources. Two different individuals were chosen as sources of content for this study. Previous research by Pennycook et al. (2015b) has used content from Deepak Chopra, and this study sought to replicate the results of that study. The other individual represented as a source in this research is Jordan B. Peterson. Content from or based on Peterson is included to expand the number of sources represented in this type of research.

Deepak Chopra is a medical doctor known for his involvement in the New Age movement. He is an advocate for alternative medicine who has been accused of using placebo effects that pull patients away from legitimate medical treatments (Wikipedia contributors, 2019). Chopra is the basis of wisdomofchopra.com. This site is a word salad generator that uses keywords from Chopra's Twitter feed, where he has a following of 3.3 million people. The result is phrases like "Hidden meaning transforms unparalleled abstract beauty". This phrase and other similar phrases have been very highly correlated with, and are therefore psychologically indistinguishable from, real Tweets from Chopra like "Attention & intention are the mechanics of manifestation" (Chopra, 2014; Pennycook et al., 2015b).

Jordan B. Peterson is an academic figure who is well known, like Chopra. Currently he is a clinical psychology professor at the University of Toronto and is known for authoring self help books (Wikipedia contributors, 2019). He also has a large following on Twitter of 1.3 million users and is the basis of a word salad generator. The site wisdomofpeterson.com operates on the

same premise as wisdomofchopra.com. This Peterson random generator has compiled phrases like “The dominance hierarchy transcends an abundance of miracles. Sorting the order of power is beyond precious brightness” which can be compared to a real quotation such as “Faith is the realization that the tragic irrationalities of life must be counterbalanced by an equally irrational commitment to the essential goodness of Being” (Peterson, 2018). The goal of the current study was to see if similar results to those that were obtained with the Chopra content in previous research (Pennycook et al., 2015b) could be replicated using another source, such as Jordan B. Peterson

Disclaimer. The individuals implicated in this investigation are useful to this research on bullshit merely because they have been discussed as sources of nonsense in general (Pennycook et al., 2015b). The availability of the word salad generator websites, which produce bullshit by their lack of intent to create meaning are also convenient tools available with one dedicated to each of the chosen individuals. This research is not meant to imply that everything these people say is bullshit.

Phrases. The real quotations were curated from the Twitter feeds of both Deepak Chopra and Jordan B. Peterson. Real quotations were also pulled from the books *Maps of Meaning: The Architecture of Belief* (Peterson, 1999) and *12 Rules for Life: An Antidote for Chaos* (Peterson, 2018). Pseudo-profound phrases were generated using the random generators wisdomofchopra.com and wisdomofpeterson.com. The generators compile buzzwords from the language of those they are meant to imitate randomly into phrases that contain syntax but lack any other conditions for compiling something meaningful. It is important that the statements have syntactic structure to make sure they are as fluent as possible. When statements are presented disfluently participants tend to rate bullshit statements less profound (Brown et al.,

2019). The fluency that syntactic structure allows for statements to be judged based on profundity, rather than judgements skewed by a superficial evaluation of a lack of fluency. In order to retain similar phrase length across the study some of the generated phrases were randomly paired together and some of the real quotations were trimmed down. All Tweets have had hashtags removed, and any abbreviations have been adjusted to the full-length words to ensure that the Tweets are not recognizable compared to other phrases. See Appendix C for the full list of phrases.

Measures.

Know/Fan/Reliable. Participants were asked to report whether they know who the sources are (yes/no/maybe), consider them a reliable source of information (7-point scale ranging from strongly disagree to strongly agree), and whether they consider themselves a fan (same 7-point scale again) for both Peterson and Chopra. One image of each was included to help participants decide whether they recognized the figures. Images were obtained from Wikipedia to provide a neutral photo choice.

Profundity ratings. Profundity ratings were measured with a five-point Likert scale: 1 = Not at all profound, 2 = somewhat profound, 3 = fairly profound, 4 = definitely profound, 5 = very profound. This is consistent with previous research on the topic (Pennycook et al., 2015b).

Cognitive Reflection Test (CRT). The CRT measures an individual's tendency to use automatic processing compared to putting in the effort to override the automatic processing with reflective thinking (Frederick, 2005; Pennycook & Rand, 2019). An example question from the CRT would be "On a loaf of bread, there is a patch of mold. Every day, the patch doubles in size. If it takes 40 days for the patch to cover the entire loaf of bread, how many days would it take for the patch to cover half of the loaf of bread?". Someone who is using automatic processing is

more likely to give an answer of 20 days, when the correct answer is 39 days. A check was administered with this measure that asked if participants have encountered any of the problems previously. Examples of questions from the CRT can be found in Appendix B.

Procedure

Participants were recruited via Amazon's Mechanical Turk and redirected to the Qualtrics survey. Here participants provided informed consent, their Mechanical Turk Worker ID (TurkID), and filled out a demographic questionnaire. TurkIDs are not created with personal information, and no other identifying information was collected, therefore participation in this study was anonymous. After this, the generated and real content were presented in randomized order to be rated for profundity with no indication of the source. Then the CRT was administered, followed by an attention check (see Appendix A). Then the know/fan/reliable measures were presented. These measures were presented at the end of the survey in Study One to prevent opinions of the figures altering profundity ratings; this is discussed further in the General Discussion. The final measures presented to the participants were some questions regarding self efficacy. These were not included in the analysis and are not further discussed. After this point participants received their HIT code to receive payment.

Results

For mean profundity ratings of each individual item see Appendix C. The mean profundity ratings for each type of content fell between 2 – “somewhat profound” and 3 – “fairly profound (Generated Chopra: $M_{prof} = 2.56$, $SD_{prof} = .99$; Real Chopra: $M_{prof} = 2.84$, $SD_{prof} = .94$; Generated Peterson: $M_{prof} = 2.26$, $SD_{prof} = .99$; Real Peterson: $M_{prof} = 2.67$, $SD_{prof} = .89$). All mean profundity ratings were significantly greater than 2 (Generated Peterson: $t = 3.36$, $p = 0.001$; all other t 's > 7.28 , p 's < 0.001). Table 1 displays the Pearson bivariate correlations of the

different content types, the reliability and fandom measures, and the CRT. In line with previous findings, the CRT is negatively correlated with the profundity ratings across all phrases. Significant correlations are present between the different content types for each source (generated versus real content). The real and generated content between sources also correlate significantly. Interestingly, there are also significant correlations between the generated Peterson content and the real Chopra content, and between the generated Chopra content and the real Peterson content. These results provide evidence that as a group, the participants found the statements at least somewhat profound. This replicates previous findings (Pennycook et al., 2015b) and provides evidence that the content that was procured from both sources is indistinguishable from pseudo-profound bullshit.

Measures of reliability and fandom correlate well for both Chopra and Peterson content ($r = .77$ and $r = .73$ respectively, p 's < 0.001). These results are strong, despite large amounts of neutral responses on these measures. Over 55% of the sample ($N = 91$) responded neutrally when asked if they consider Jordan Peterson a reliable source of information, and 40% ($N = 65$) responded neutrally when asked if they are a fan of Deepak Chopra. For a full report of the outcomes of these measures, see Appendix D.

Table 1: Pearson bivariate correlations (Study 1; N = 163). CRT = Cognitive Reflection Test.

	1	2	3	4	5	6	7	8	9	10	11
1. Generated Chopra	–										
2. Real Chopra	.85***	–									
3. Chopra Check	-.07	-.04	–								
4. Chopra Fan	.44***	.46***	.15*	–							
5. Chopra Reliable	.42***	.50***	.12	.77***	–						
6. Generated Peterson	.83***	.79***	-.16*	.39***	.39***	–					
7. Real Peterson	.74***	.78***	-.09	.38***	.38***	.80***	–				
8. Peterson Check	.03	-.04	.19**	-.05	-.08	.05	.03	–			
9. Peterson Fan	.37***	.33***	.08	.58***	.39***	.43***	.40***	.19**	–		
10. Peterson Reliable	.32***	.33***	.00	.34***	.39***	.36***	.33***	.15*	.73***	–	
11. CRT	-.40***	-.34***	-.07	-.28***	-.18*	-.41***	-.37***	-.11	-.28***	-.24**	–

Discussion

The results of Study One are encouraging. The strong correlations between the different types of content provide evidence that pseudo-profound bullshit can be found in content from multiple sources. As the real and generated quotations are highly correlated, it can be said that the real content is psychologically indistinguishable from the generated bullshit content. This finding meant that deception could be avoided in the experimental design for Study Two by using only the real quotations (ideal for ethics clearance under time constraints). The significant negative correlation of the CRT with profundity ratings is also key, as this replicates findings from Pennycook et al. (2015b). These findings hold consistent with the idea that those who perform worse on the CRT, and can therefore be said to be less reflective thinkers, are more susceptible to pseudo-profound bullshit (Pennycook et al., 2015b).

Study Two

The main purpose of Study One was to determine whether the generated and real types of content are psychologically indistinguishable from one another, regardless of the source.

Results suggest that the types of content are psychologically indistinguishable, and that the real quotations can be utilized as pseudo-profound bullshit for Study Two. The second part of this investigation used a between subjects' approach to see if a main effect of source condition (source provided versus not provided) and opinion on profundity ratings exists.

Participants rated real quotations presented either with the source or with no information about the source.

Method

Participants

The initial sample size for Study Two was 501 participants. The initial screener for this study was meant to remove anyone who did not know who at least one of Deepak Chopra or Jordan Peterson are. Of the 501, 81 people did not know either source, and 5 did not answer the questions regarding reliability and fandom. After this, 11 participants quit right away, 4 did not finish, and 23 failed the attention check. There were also 60 participants who reported responding randomly. Consistent with Study One, all these cases were excluded from further analysis. Participants were randomized into one of two experimental conditions, either the source condition ($N = 157$) or the no source condition ($N = 160$). Randomization occurred before the screener. The resulting sample left $N = 317$ (187 male, 126 female, 2 transgender male, 2 trans/non-binary, and 1 prefer not to answer: $M_{age} = 37.17$, $SD_{age} = 11.59$, range 19-74).

There were 105 participants who rated the mundane sentence “water is wet” higher than “not at all profound” on the profundity Likert scale. While this was originally intended to be an

attention check for random responses, leaving this group out of the analysis did not change the outcomes of the analysis, therefore the larger sample was retained.

Materials

Study Two used similar materials to Study One. Another Qualtrics survey was utilized, as well as Mechanical Turk for recruitment of participants. Measures included the same know/fan/reliable measures as Study One, the 5-point Likert scale for profundity and the CRT. Only the real quotations were used for Study Two, as they were established to be psychologically indistinguishable from the generated phrases in Study One.

Procedure

For Study Two, participants gave informed consent, then were immediately randomized into the Source or No Source conditions. Participants were unaware of their assignment to either condition. After this, TurkIDs were entered then the screening questions were answered, then the “list of activities” attention check. Demographics, rating of the quotations, the “water is wet” attention check, and CRT followed. Participants then received their HIT code for pay.

Results

For mean profundity ratings of each individual item see Appendix E and F, for sample size reports of reliability and fandom measures see Appendix G. As in Study One, all mean profundity ratings are significantly higher than 2 (all t 's > 8.05, all p 's < 0.001). Table 2 displays the Pearson bivariate correlations between the profundity ratings of the real quotations, the reliability and fandom measures, and the CRT for both the source and no source conditions. All correlations have p 's < 0.001. These results are consistent with Study One.

Table 2: Pearson bivariate correlations, all p 's < 0.001 . (Study 2; $N = 317$). CRT = Cognitive Reflection Test. Bottom diagonal is No Source condition; Top diagonal is Source condition.

	1	2	3	4	5	6	7
1. Chopra: Profundity	–	.67	.70	.86	.56	.52	-.53
2. Chopra: Fan	.65	–	.79	.67	.58	.45	-.44
3. Chopra: Reliable	.65	.77	–	.67	.45	.46	-.43
4. Peterson: Profundity	.86	.59	.65	–	.66	.63	-.58
5. Peterson: Fan	.67	.60	.64	.68	–	.85	-.35
6. Peterson Reliable	.69	.61	.64	.69	.85	–	-.33
7. CRT	-.61	-.42	-.45	-.59	-.57	-.58	–

A General Linear Model was utilized to perform a univariate analysis for both sources of content. Profundity was the dependent variable affected by condition (source/no source) and fandom (Not a fan, Neutral, A fan). For the Chopra content condition did not produce a main effect ($F = 0.00$, $p = .950$). The Fan variable did present a significant effect ($F = 81.50$, $p < 0.001$) with fans rating content as more profound than non-fans. No main interaction was present (see figure 1). For the Peterson content Condition and Fan variables were both significant ($F = 4.49$, $p = 0.035$; $F = 64.60$, $p < 0.001$, respectively). In the Source condition, content attributed to Peterson was rated less profound. As this effect presented in the same direction regardless of participants' reported position on fandom this outcome may be an artifact. There was no main interaction between the Condition and Fan variables ($F = 0.01$, $p = .990$) (see figure 2). These findings do not provide sufficient evidence to conclude that the interaction source information and fan opinions influence the profundity ratings of pseudo-profound bullshit. Possible

experimental design shortcomings that may have led to these results are analyzed in the General Discussion.

Figure 1: Mean profundity ratings for Chopra quotations grouped by fandom and source condition.

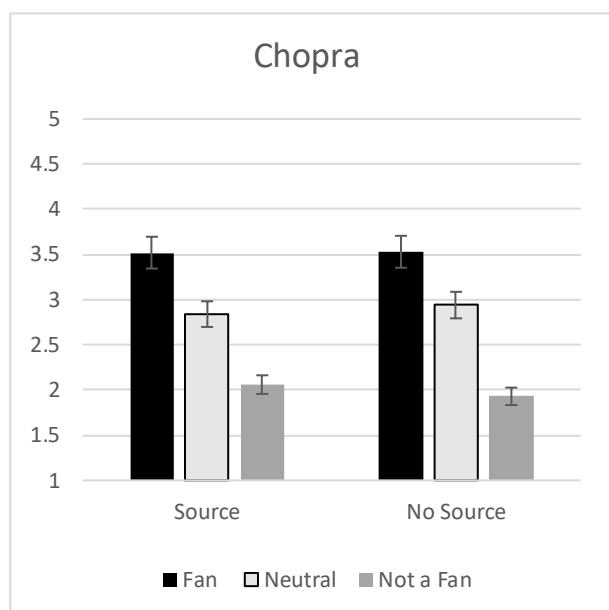
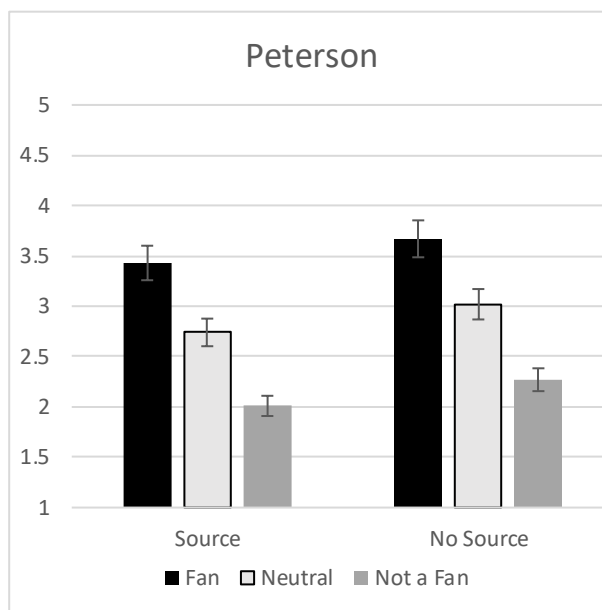


Figure 2: Mean profundity ratings for Peterson quotations grouped by fandom and source condition.



General Discussion

So, are we more susceptible to pseudo-profound bullshit when it comes from a source we trust? Based on the results of Study Two, there is not currently sufficient evidence to conclude that a significant interaction exists between source information and fandom with respect to profundity ratings of content. This outcome may be the result of faults in experimental design. Suggestions for future research are discussed, as the significant results that did surface in this investigation cannot be ignored. These preliminary findings indicate that this concept requires further consideration with appropriate alterations to experimental design.

One problematic aspect of the experimental design for Study Two was the screener. It was important that the screener be included before participants rated the profundity of the

statements in order to avoid post-treatment conditioning (as discussed in Montgomery et al., 2018). When researchers attempt to estimate causal effects of a particular group of respondents it is important to consider when the information that determined said groups was collected. If it was collected after the experimental treatment, then the treatments may have affected the outcomes of the groupings. In the context of the current work, collecting information about the participants' opinions of fandom and reliability of the sources after participants evaluated the profundity of the phrases would have been an example of post-treatment conditioning. Opinions of the sources may have been skewed by how the participants rated the phrases in the source condition. This could have led to a biased estimate of the effect of the Source/No Source conditions, as the provided sources may have changed the opinions more in the Source condition than in the No Source conditions.

However, participants may have been able to guess the sources of the quotations even when they were in the No Source condition of Study Two, as they would have seen the two people represented in the screener. In addition, if the participant was familiar with the work of either source (or both) they may have been able to accurately guess which figure was the source of each item. This could have affected their profundity ratings, depending on their opinion of the sources.

Several changes to the experimental design could be made to mitigate these concerns. First, the use of deception would allow for complete control of the manipulation of source, and how this interacts with fandom. Participants could be presented with fake content attributed to real sources that they have reported being a fan of to see if they rate the statements higher than a baseline. The same could also be utilized with a negative opinion of the source. This design

would allow for both within and between subjects' comparison, where the current work only observed between subjects' differences.

A second direction that would create changes to this experimental design is the need for a wider variety of sources. This is necessary for multiple reasons including the need for a more representative sampling of sources of pseudo-profound bullshit for external validity, variety in the types of people that people know, and variety in the reasons they trust people (e.g. personal relation, authority, competence, etc.). Another advantage to including more sources in this area of research is that it may prevent participants from guessing the sources of specific items. In the current study participants only had two options to choose from if they were guessing who the content came from. If more sources are added it may be likely that the accuracy of those guesses might go down. This also accounts for being able to keep the initial screening survey at the beginning of the study.

Another take on how to manipulate the presentation of the pseudo-profound bullshit from Gligorić and Vilotijević (2020) could be elaborated upon. The researchers behind this study manipulated the presentation of the quotations and generated phrases as isolated sentences, deceptively attributed to a well-known author, or as part of a paragraph-length story. Their results showed that meaningful quotations were rated the same regardless of whether the source was presented with the content. For pseudo-profound bullshit statements, the content was rated as more profound when an author was present than when the author was absent (Gligorić & Vilotijević, 2020). This is relevant to the current work, as it provides indication that trust in the authority and competence of a given source may influence the perceived profundity of the content.

This area of research needs to continue to grow, we need more information on how source information and opinion affect receptivity to pseudo-profound bullshit. Bullshit runs rampant today in various forms from pseudo-profound bullshit to fake news. Real world situations throw all different kinds of bullshit at an individual at once. The ignorance that allows bullshit to persist is intertwined in social, cultural, and political forces (Wakeham, 2017) and cannot necessarily be separated from the society itself. However, some groups are more susceptible and receptive of bullshit than others. Specifically, those who endorse illusory patterns, are found to use counterfactual thinking, have lower levels of education, or are in situations where they feel more uncertain are all more receptive to bullshit (Pennycook et. al., 2015b; Petrocelli, 2018; Walker et al., 2019).

The most effective way to combat bullshit, or in other words make them more bullshit sensitive (Erlandsson et al., 2018). If people are more sensitive to bullshit, they may be more likely to engage in analytic thinking and overcome some level of bullshit receptivity. A part of making people more sensitive to bullshit is making them more aware of how pervasive it is, and this growing body of literature does exactly that. Although this investigation did not provide significant evidence for what we hypothesized, the significant results that did surface are encouraging, and they indicate that this concept requires further consideration with appropriate alterations to experimental design.

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Appendix A – Attention Checks

- 1) “Water is wet”
 - Rated on the 5-point Likert scale
 - Should be rated 1 – not at all profound, anything higher was originally considered to be indication of random response

- 2) Below is a list of leisure activities. If you are reading this, please choose the "other" box below and type in "I read the instructions".
 - Sports
 - Television
 - Computer games
 - Surfing the internet
 - Board games
 - Camping
 - Spending time with family and friends
 - Other (_____)

Appendix B - Cognitive Reflection Test (CRT) Examples

1. The ages of Mark and Adam add up to 28 years total. Mark is 20 years older than Adam. How many years old is Adam?
2. If you're running a race and you pass the person in second place, what place are you in?
3. A farmer had 15 sheep and all but 8 died. How many are left?
4. If it takes 10 seconds for 10 printers to print out 10 pages of paper, how many seconds will it take 50 printers to print out 50 pages of paper?
5. On a loaf of bread, there is a patch of mold. Every day, the patch doubles in size. If it takes 40 days for the patch to cover the entire loaf of bread, how many days would it take for the patch to cover half of the loaf of bread?
6. Emily's father has three daughters. The first two are named April and May. What is the third daughter's name?

Appendix C – Mean Profundity Descriptive Statistics: Study 1

	Mean	Standard Deviation	P/C	R/G	Source
P = Peterson, C = Chopra R = Real, G = Generated					
Hidden meaning transforms unparalleled abstract beauty.	2.76	1.319	C	G	-
The unexplainable undertakes intrinsic experiences.	2.54	1.287	C	G	-
Good health imparts reality to subtle creativity.	2.34	1.268	C	G	-
Wholeness quiets infinite phenomena.	2.41	1.318	C	G	-
The future explains irrational facts.	2.63	1.397	C	G	-
Imagination is inside exponential space time events.	2.69	1.307	C	G	-
Your consciousness gives rise to a jumble of neural networks.	2.39	1.349	C	G	-
Your movement transforms universal observations.	2.6	1.341	C	G	-
Perceptual reality transcends subtle truth.	2.9	1.345	C	G	-
The invisible is beyond new timelessness.	2.37	1.346	C	G	-
The key to life influences potential belonging. Experiential truth constructs formless phenomena.	2.5	1.326	P	G	-
Morality is beyond exponential balance. Pinocchio as the archetype is the foundation of the mechanics of balance.	2.14	1.283	P	G	-
Archetypal truth is nested immovably in unique boundaries. The Logos arises and subsides in mortal reality.	2.43	1.3	P	G	-
The dominance hierarchy transcends an abundance of miracles. Sorting the order of power is beyond precious brightness.	2.45	1.301	P	G	-

Embodying the Logos explains visible mortality. Sorting order of power heals a symphony of bliss, I just can't understand!	2.06	1.209	P	G	-
The presupposition is an ingredient of unique choices. The Bible alleviates essential power, roughly speaking!	1.97	1.234	P	G	-
The traditional archetype is reborn in descriptions of photons. Archetypal truth expresses unparalleled power.	2.26	1.261	P	G	-
Mythological truth is the wisdom of total neural networks. Don't get me wrong, science nurtures reckless facts.	2.02	1.191	P	G	-
The 12 Rules for Life meditates on unique observations. Evil is the force that serves dimensionless choices.	2.26	1.221	P	G	-
Information creates unparalleled facts. The most real truth expresses an abundance of success.	2.48	1.224	P	G	-
Attention & intention are the mechanics of manifestation.	2.82	1.3	C	R	Twitter
Matter is the experience in consciousness of a deeper non-material reality.	2.74	1.319	C	R	Twitter
Our minds extend across space & time as waves in the ocean of the one mind.	2.99	1.374	C	R	Twitter
Nature is a self-regulating ecosystem of awareness.	3.02	1.36	C	R	Twitter
We are non-local beings that localize as a dot then inflate to become non-local again. The universe is mirrored in us.	2.63	1.384	C	R	Twitter
Mechanics of Manifestation: Intention, detachment, centered in being allowing juxtaposition of possibilities to unfold.	2.54	1.263	C	R	Twitter
Mind & matter are subtle and dense vibrations of consciousness (spirit).	2.88	1.288	C	R	Twitter

We are not an emergent property of a mechanical universe but the seasonal activity of a living cosmos.	2.99	1.23	C	R	Twitter
Every material particle is a relationship of probability waves in a field of infinite possibilities. You are that.	2.99	1.227	C	R	Twitter
As beings of light we are local and non-local, time bound and timeless actuality and possibility.	2.79	1.351	C	R	Twitter
Life calls us forth to independence, and anyone who does not heed this call because of childhood laziness or timidity is threatened with neurosis (remaining forever in the morally poisonous atmosphere of infancy).	2.67	1.336	P	R	Twitter
Faith is the realization that the tragic irrationalities of life must be counterbalanced by an equally irrational commitment to the essential goodness of Being.	2.83	1.302	P	R	12 Rules
Proof itself, of any sort, is impossible, without an axiom (as Gödel proved). Thus faith in God in God is a prerequisite for all proof.	2.42	1.271	P	R	Twitter
The Bible has been thrown up, out of the deep, by the collective human imagination, which is itself a product of unimaginable forces operating over unfathomable spans of time.	2.37	1.287	P	R	12 Rules
We also presently possess in accessible and complete form the traditional wisdom of a large part of the human race—possess an accurate description of the myths and rituals that contain and condition the implicit and explicit values of almost everyone who has ever lived.	2.8	1.253	P	R	Maps of Meaning
Meaning means implication for behavioral output; logically, therefore, myth presents information relevant to the most fundamental of moral problems.	2.51	1.244	P	R	Maps of Meaning

Mythic truth is information, derived from past experience—derived from past observation of behavior- relevant from the perspective of fundamental motivation and effect.	2.69	1.293	P	R	Maps of Meaning
The Great Mother impels—pushes (with certainty of mortality) and pulls (with possibility of redemption)—development of consciousness and of self-consciousness.	2.53	1.367	P	R	Maps of Meaning
When you dare aspire upward, you reveal the inadequacy of the present and the promise of the future.	3.17	1.255	P	R	12 Rules
Perhaps Man is something that should never have been. Perhaps the world should even be cleansed of all human presence, so that Being and consciousness could return to the innocent brutality of the animal.	2.72	1.345	P	R	12 Rules

Appendix D - Fandom and Reliability Descriptive Statistics: Study 1

Chopra	SD	D	WD	N	WA	A	SA	Total
SD	11	1	0	0	0	0	0	12
D	2	7	1	0	0	0	0	10
WD	0	4	6	0	0	0	0	10
N	10	13	6	46	2	0	0	77
WA	0	0	2	13	8	1	0	24
A	0	1	0	5	7	10	0	23
SA	0	0	0	1	0	2	4	7
Total	23	26	15	65	17	13	4	163

SD = Strongly disagree, D = Disagree, WD = Somewhat disagree, N = Neither agree nor disagree, WA = Somewhat agree, A = Agree, SA = Strongly agree

Peterson	SD	D	WD	N	WA	A	SA	Total
SD	14	0	0	0	0	0	0	14
D	1	7	0	1	0	0	0	9
WD	0	1	2	0	0	0	0	3
N	10	13	5	60	3	0	0	91
WA	0	0	2	7	7	1	1	18
A	1	1	0	5	1	5	3	16
SA	0	0	0	2	1	4	5	12
Total	26	22	9	75	12	10	9	163

Appendix E – Mean Profundity Descriptive Statistics: Study Two

	No Source		Source	
	Mean	Std Dev	Mean	Std Dev
Life calls us forth to independence, and anyone who does not heed this call because of childhood laziness or timidity is threatened with neurosis (remaining forever in the morally poisonous atmosphere of infancy).	3.01	1.306	2.68	1.215
Proof itself, of any sort, is impossible, without an axiom (as Gödel proved). Thus faith in God in God is a prerequisite for all proof.	2.77	1.355	2.56	1.369
The Bible has been thrown up, out of the deep, by the collective human imagination, which is itself a product of unimaginable forces operating over unfathomable spans of time.	2.86	1.339	2.68	1.32
We also presently possess in accessible and complete form the traditional wisdom of a large part of the human race—possess an accurate description of the myths and rituals that contain and condition the implicit and explicit values of almost everyone who has ever lived.	3.08	1.269	2.94	1.254
Meaning means implication for behavioral output; logically, therefore, myth presents information relevant to the most fundamental of moral problems.	2.86	1.312	2.62	1.233
Mythic truth is information, derived from past experience—derived from past observation of behavior- relevant from the perspective of fundamental motivation and effect.	2.89	1.199	2.82	1.224
The Great Mother impels—pushes (with certainty of mortality) and pulls (with possibility of redemption)—development of consciousness and of self-consciousness.	2.8	1.354	2.64	1.291
When you dare aspire upward, you reveal the inadequacy of the present and the promise of the future.	3.21	1.225	3.13	1.172
Perhaps Man is something that should never have been. Perhaps the world should even be cleansed of all	3.00	1.374	2.64	1.307

human presence, so that Being and consciousness could return to the innocent brutality of the animal.				
Faith is the realization that the tragic irrationalities of life must be counterbalanced by an equally irrational commitment to the essential goodness of Being.	3.12	1.157	2.91	1.283
Attention & intention are the mechanics of manifestation.	3.03	1.269	2.75	1.211
Our minds extend across space & time as waves in the ocean of the one mind.	2.93	1.323	2.94	1.247
Nature is a self-regulating ecosystem of awareness.	2.97	1.254	2.91	1.265
We are non-local beings that localize as a dot then inflate to become non-local again. The universe is mirrored in us.	2.71	1.403	2.64	1.271
Mechanics of Manifestation: Intention, detachment, centered in being allowing juxtaposition of possibilities to unfold.	2.8	1.278	2.61	1.223
Mind & matter are subtle and dense vibrations of consciousness (spirit).	3.06	1.368	2.85	1.265
We are not an emergent property of a mechanical universe but the seasonal activity of a living cosmos.	3.11	1.335	2.89	1.214
Every material particle is a relationship of probability waves in a field of infinite possibilities. You are that.	3.13	1.328	3	1.269
As beings of light we are local and non-local, time bound and timeless actuality and possibility.	2.87	1.323	2.84	1.298
Matter is the experience in consciousness of a deeper non-material reality.	2.91	1.373	2.94	1.343

Appendix F – Mean Profundity Descriptive Statistics by Condition and Fandom: Study 2

Mean profundity ratings: Content from Peterson is on the left, content from Chopra is on the right

	Source	Standard Deviation	No Source	Standard Deviation	Source	Standard Deviation	No Source	Standard Deviation
Not a Fan	2.01	.80	2.27	.92	2.06	.86	1.93	.84
Neutral	2.74	1.04	3.02	.72	2.84	.90	2.94	.93
Fan	3.43	.86	3.67	.75	3.52	.70	3.52	.89

Appendix G - Fandom and Reliability Descriptive Statistics: Study 2

Chopra No Source	Not a fan	Neutral	A fan	Total
Not reliable	27	3	1	31
Neutral	6	10	5	21
Reliable	8	21	51	80
Total	41	34	57	132
Chopra Source	Not a fan	Neutral	A fan	Total
Not reliable	27	2	1	30
Neutral	16	15	4	35
Reliable	5	20	53	78
Total	48	37	58	143
Peterson Source	Not a fan	Neutral	A fan	Total
Not reliable	30	0	1	31
Neutral	8	6	1	15
Reliable	5	14	53	72
Total	43	20	55	118
Peterson No Source	Not a fan	Neutral	A fan	Total
Not reliable	25	3	0	28
Neutral	7	6	4	17
Reliable	1	11	55	67
Total	33	20	59	112