



Bullshitting and persuasion: The persuasiveness of a disregard for the truth

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Although generally viewed as a common and undesirable social behaviour, very little is known about the nature of bullshitting (i.e., communicating with little to no regard for evidence or truth; Raritan Q Rev 6, 1986, 81); its consequences; and its potential communicative utility. Specifically, it is hypothesized that bullshitting may be relatively influential under specified conditions. Experiment 1 participants were exposed to a traditional persuasion paradigm, receiving either strong or weak arguments in either an evidence-based or bullshit frame. Experiment 2 also incorporated a manipulation of a peripheral route cue (i.e., source attractiveness). Findings demonstrate that bullshitting can be an effective means of influence when arguments are weak, yet undermine persuasive attempts when arguments are strong. Results also suggest that bullshit frames may cue peripheral route processing of persuasive information relative to evidence-based frames that appear to cue central route processing. Results are discussed in light of social perception and attitude change.

Bullshitting involves intentionally or unintentionally, consciously or unconsciously, communicating with little to no regard or concern for truth, genuine evidence, and/or established semantic, logical, systemic, or empirical knowledge (Frankfurt, 1986; Petrocelli, 2018). Bullshitting is often characterized by, but not limited to, using rhetorical strategies designed to disregard truth, evidence, and/or established knowledge, such as exaggerating or embellishing one's knowledge, competence, or skills in a particular area or talking about things of which one knows nothing about in order to impress, fit in with, influence, or persuade others.¹

Despite its seeming pervasiveness, very little is known about the consequences and potential benefits of bullshitting relative to other forms of communication (e.g., evidence-based communication). A better understanding of how bullshit operates in persuasion may shed light on the potential communicative functions of the behaviour.

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¹ Bullshitting is distinct from propaganda. Propaganda is form of communication aimed towards influencing the attitude of a population towards some cause or position. Used to further an agenda, propaganda is often characterized by playing to emotions by appealing to fears, popular desires, prejudices, and irrational hopes, rather than by using rational argument, creating a rather distorted vision of the world (Jowett, 1987; Petty, Wells, & Brock, 1976; Pratkanis & Aronson, 2001; Sussman, 2011). Although propaganda could conceivably involve bullshit, not all bullshit is propaganda. Bullshitting should also not be confused with sociopathic behaviour. The sociopath behaves without regard for society in general or its rules and laws, the rights of others. They also fail to feel remorse or guilt and have a tendency to display violent behaviour (Mealey, 1995; Pemment, 2013). It is quite likely that sociopathic behaviour will involve some degree of bullshitting, bullshitting in and of itself is not sociopathic.

Frankfurtian bullshit

According to Frankfurt (1986), the content of what people communicate does not determine if something is bullshit. Bullshitting has more to do with *how* people communicate (i.e., their underlying motivations) and less to do with *what* is communicated (Law, 2011). For example, one might argue that ‘Vitamin C helps to prevent the common cold’. Such statements can be made with respect to some interest/concern for genuine evidence and existing knowledge or it can be argued without any interest/concern for genuine evidence and existing knowledge at all. The former would be considered evidence-based communication and reasoning whereas the latter is considered bullshit (although the statement is altogether false). In essence, the bullshitter communicates without any attention to, or cares for, genuine evidence and/or established knowledge.

Although the bullshitter and liar both appear as though they are interested in truth, bullshitting is not the same as lying. The critical difference between bullshitting and lying is that the liar actually knows and cares about the truth – his agenda is to distract us from the truth all together. To pull off a successful lie, the liar distorts his/her portrayal of reality and tries to remember his/her lie (Armstrong, 1999; Vieira & Lane, 2013). The bullshitter, on the other hand, doesn’t have this burden because the bullshitter doesn’t know what the truth is. He/she doesn’t care what the truth is, and he/she isn’t even trying to know. In fact, what the bullshitter says may actually be correct, but he/she wouldn’t know it because he/she isn’t paying any attention to truth, established knowledge, or evidence for his/her claims. How much easier it would be to lie if one didn’t have the burden of knowing the truth – it wouldn’t feel much like lying at all.

Finally, although opinions may be very well based on bullshit, expressing one’s own opinions does not constitute bullshitting – one’s beliefs and opinions are self-evident.

Frankfurt (1986) surmised that bullshitting is often unavoidable: ‘Bullshit is unavoidable whenever circumstances require someone to talk without knowing what he/she is talking about. Thus the production of bullshit is stimulated whenever a person’s obligations or opportunities to speak about some topic are more extensive than his/her knowledge of the facts that are relevant to that topic’ (p. 99). Because people appear perfectly willing to publicize their opinions about things they could not possibly know anything about (e.g., Herr, Sherman, & Fazio, 1983), and because people cannot possibly hold *informed opinions about everything*, engaging with bullshit appears to be an inevitable communicative substance. Considering the potential ubiquity of bullshit, it is surprising that bullshitting has attracted so little empirical attention.

Overview

Although bullshitting is not regarded as negatively as lying (Frankfurt, 1986; Petrocelli, Silverman, & Shang, 2020), bullshitting is still a socially undesirable behaviour. Why, then, do people appear to engage in the behaviour so frequently? Are there conditions under which bullshitting provides an advantage to the individual? One possibility is that frequent engagement of bullshitting has something to do with its effectiveness as a persuasive technique. That is, if under some conditions bullshitting has persuasive power, then bullshitting would be considered functional, partly explaining why there is so much bullshit found in society.

When persuasive attempts include weak arguments, there are reasons to believe that bullshit can be as persuasive as attacks armed with arguments framed in evidence-based reasoning. Any cues suggesting that a communicator is not interested nor concerned with available/genuine evidence should elicit the peripheral route of elaborative information-

processing activity, such that any persuasion would result from something other than the message's content or strength of the arguments (Petty & Cacioppo, 1981). As Frankfurt (1986) conjectured, 'We may seek to distance ourselves from bullshit, but we are more likely to turn away from it with an impatient or irritated *sbrug*. . . .our attitude toward bullshit is generally more benign than our attitude toward lying. . .' (p. 95). Thus, when people do not expect arguments to be particularly evidenced-based, cognitive processing of those arguments should require relatively low-effort activity. If people do tend to process arguments framed in bullshit from the peripheral route, weak arguments framed in bullshit would be as effective as strong arguments framed in bullshit (Petty & Cacioppo, 1984, 1986). Furthermore, given widespread incompetence with numbers (Paulos, 1988; Peters et al., 2006), people often prefer to be confronted with general arguments and conclusions than confused with numbers or facts (Baldus, Pulaski, & Woodworth, 1983, 1990; Cunningham & Reidy, 1999; Gurmankin, Baron, & Armstrong, 2004). Thus, weak arguments framed in bullshit may be as impactful (if not more impactful) as the same arguments coupled with an expressed concern for evidence (e.g., relevant data and sources).

On the other hand, evidence suggesting that a communicator is in fact interested or concerned with available/genuine evidence should cue the central route of elaborative information-processing activity (Petty & Cacioppo, 1981). In fact, people should feel it unnecessary to engage in bullshitting when they are armed with strong arguments. Clearly, there are multiple reasons to expect bullshit to undermine the effectiveness of strong arguments (e.g., it implies biased/invalid processing of available evidence, casting doubt on the validity of the arguments). In any case, arguments framed in bullshitting cues would not be expected to augment the potency of strong arguments relative to the same arguments couched in an evidence-based frame. Experiment 1 and Experiment 2 test these possibilities.

EXPERIMENT 1

In Experiment 1, participants read background information about a counterattitudinal policy (i.e., a mandatory comprehensive examination policy ostensibly under consideration at their university; Petty & Cacioppo, 1986). Before reporting their attitude regarding the policy, participants reviewed the weak or strong arguments in favour of the policy couched in bullshit or evidence-based frames. Bullshitting was expected to augment the effectiveness of weak arguments, as evidenced by more favourable thought responses (i.e., responses in alignment with the position depicted by the persuasive arguments) and more positive attitudes, relative to evidence-based frames of the same arguments. Conversely, bullshitting was expected to attenuate the effectiveness of strong arguments, as evidenced by more unfavourable thought responses and more negative attitudes, relative to evidence-based frames of the same arguments. Consistent with the cognitive responses model of persuasion (Petty & Cacioppo, 1984; Tormala, Rucker, & Seger, 2008; Wegener, Downing, Krosnick, & Petty, 1995), Thought Favorability was expected to mediate the interactive link between Argument Quality, Argument Frame, and Attitude.

Method

Participants and design

An a priori power analysis using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) revealed a minimum sample size of $N = 259$ to detect a small-to-medium effect ($f = .175$;

selected on the basis of Petty and Cacioppo (1984) report of interactions between peripheral and central route cues) in a 2×2 ANOVA design and a moderate power of $1 - \beta = .80$. Correspondingly, a sample of 496 college undergraduates (55.6% female, $M_{\text{age}} = 18.58$, $SD = 1.81$), enrolled in an introductory psychology course, were recruited to participate in a laboratory study in exchange for partial course credit. A 2 (Argument Quality: weak vs. strong) \times 2 (Argument Frame: bullshit vs. evidence-based) complete between-groups design was employed, whereby participants were randomly assigned to conditions. The dependent variables included Thought Favorability and Attitude.²

Materials and procedure

All experimental materials were presented through a self-administered computer questionnaire using MediaLab v2012 Research Software (Jarvis, 2016); participants advanced by clicking appropriate response keys.

Issue information. Participants read a passage describing the alleged notion that university administrators and faculty have begun to consider a new policy requiring seniors to pass a comprehensive exam in their major area in order to graduate and that students were being surveyed for their thoughts and opinions about the proposal. Furthermore, if implemented, the mandatory comprehensive exam policy would begin in the next academic year and would apply to all students currently enrolled at the university.

Argument quality and argument frame. Participants read that before stating their thoughts and opinions about the policy they would review a statement made by a recent graduate of their university. Participants read persuasive arguments in favour of the exam policy. Specifically, participants were randomly assigned to an Argument Quality condition whereby they reviewed a passage including four weak or strong arguments (modified from those employed by Petty & Cacioppo, 1986) as well as to an Argument Frame condition whereby the argument set was framed using bullshit or evidence-based reasoning.

Participants assigned to the *bullshit* [evidence-based] frame read arguments prefaced with comments suggesting *little to no interest* [considerable interest] in available and genuine evidence; for example, 'I believe there is some research on this issue, *but I'm not really concerned with the evidence* [as I'm really concerned with the evidence] concerning this issue'. and '*Whatever the evidence might be* [According to the evidence], an interesting and important feature. . .'.³

² All measures, manipulations, and exclusions have been disclosed, as well as the method of determining the final sample size. In each experiment, data were first collected and then analysed; no data were collected following the data analysis.

³ A pilot study ($N = 295$), including the very same manipulation of Argument Frame (bullshit vs. evidence-based), and using the very same attitude object (i.e., mandatory comprehensive exam policy) and persuasive messages, included a test of attention and understanding of the Argument Frame. Participants responded to two items (i.e., 'How much do you think the communicator's thoughts were based on [concerned with] evidence?') using an eleven-point scale with not at all (1) to entirely (11) as the anchor labels (Cronbach's $\alpha = .84$). The manipulation was successful, $F(1, 293) = 32.27$, $p < .001$, $\eta^2_{\text{partial}} = .010$, such that participants exposed to evidence-based frame arguments rated the argument as indicative of a greater concern for evidence ($M = 5.73$, $SD = 2.04$) than did participants exposed to bullshit frame arguments ($M = 4.34$, $SD = 2.15$).

Thought-listing task. Next, participants completed a thought-listing task (see Petty & Cacioppo, 1986). Specifically, participants were asked to type four thoughts they had in reaction to the message about the policy.

Attitude. Participants were then asked to report their attitude towards the policy on seven nine-point semantic differential items anchored at *negative/positive*, *bad/good*, *unfavourable/favourable*, *harmful/beneficial*, *foolish/wise*, *against/in favour*, and *undesirable/desirable* (Cronbach's $\alpha = .96$).

Thought favorability. Participants then coded each of their thought-listings as being opposed to, neutral towards, or in favour of the exam policy. Specifically, each thought listed earlier was displayed individually and participants were asked to rate the degree to which the thought was against or in favour of the mandatory comprehensive exam policy using an eleven-point scale with *very much against the policy* (-5) to *very much in favour of the policy* (+5) as the anchor labels. Thought Favorability index was computed by calculating the average of the four ratings. Several self-report measures were also collected for exploratory purposes only after the measurement of the dependent variables. Participants were then thanked for their time and debriefed.

Results

Thought favorability

Clearly, participants did not think favourably about the position shared in the passage as evidenced by the negative Thought Favorability sample mean ($M = -1.58$, $SD = 2.57$). These data were subjected to a 2 (Argument Quality: weak vs. strong) \times 2 (Argument Frame: bullshit vs. evidence-based) ANOVA. A significant main effect of Argument Quality emerged, such that relatively less negative thoughts were listed in response to strong arguments ($M = -.89$, $SD = 2.50$) than to weak arguments ($M = -2.25$, $SD = 2.45$), $F(1, 492) = 37.96$, $p < .001$, $\eta^2_{\text{partial}} = .072$. Argument Frame did not significantly affect Thought Favorability, $F(1, 492) = .62$, $p = .43$. However, the significant main effect was qualified by the expected Argument Quality \times Argument Frame interaction, $F(1, 492) = 5.11$, $p = .024$, $\eta^2_{\text{partial}} = .010$ (see the top panel of Figure 1).

As expected, tests of the simple effects among the Thought Favorability means showed that when presented with arguments framed in bullshit, participants exposed to weak arguments listed more negative thoughts ($M = -1.91$, $SD = 2.31$) than their counterparts exposed to strong arguments ($M = -1.04$, $SD = 2.59$), $t(492) = -2.75$, $p = .006$. However, when presented with arguments framed in evidence-based reasoning, participants exposed to strong arguments listed considerably less negative thoughts ($M = -.72$, $SD = 2.41$) than their counterparts exposed to weak arguments ($M = -2.59$, $SD = 2.54$), $t(492) = -5.95$, $p < .001$. From another angle, when participants were presented with weak arguments, participants who received arguments framed in bullshit listed relatively less negative thoughts than their counterparts who received arguments framed in evidence-based reasoning, $t(492) = 2.17$, $p = .03$. However, when participants received strong arguments, no such effect was found, $t(492) = -1.04$, $p = .30$.

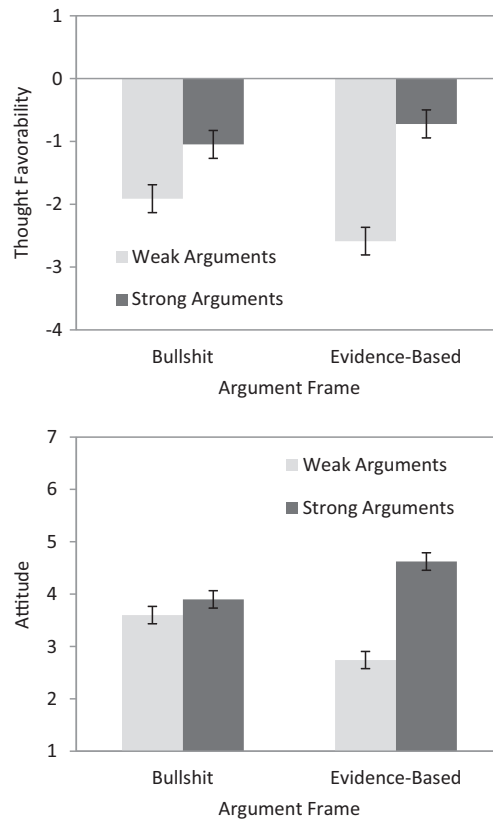


Figure 1. Attitude and thought favorability means by argument quality and argument frame (Experiment 1); error bars represent ± 1 standard error.

Attitude

The participants clearly expressed relatively negative attitudes about the policy ($M = 3.71$, $SD = 1.96$). Attitude data were subjected to the same analysis as that employed for the Thought Favorability data. A significant main effect of Argument Quality emerged, such that relatively more positive attitudes were reported in response to strong arguments ($M = 4.31$, $SD = 2.06$) than to weak arguments ($M = 3.12$, $SD = 1.67$), $F(1, 492) = 50.64$, $p < .001$, $\eta^2_{\text{partial}} = .093$. Argument Frame did not significantly affect Attitude, $F(1, 492) = .19$, $p = .66$. However, the significant main effect was qualified by the expected Argument Quality \times Argument Frame interaction, $F(1, 492) = 17.92$, $p < .001$, $\eta^2_{\text{partial}} = .035$ (see the bottom panel of Figure 1).

As expected, tests of the simple effects among the Attitude means showed that when presented with arguments framed in bullshit, participants exposed to weak arguments reported attitudes that were statistically less positive ($M = 3.51$, $SD = 1.87$) than those reported by their counterparts exposed to strong arguments ($M = 3.99$, $SD = 2.09$), $t(492) = -2.04$, $p = .041$. However, when presented with arguments framed in evidence-based reasoning, the difference was significantly more pronounced – participants exposed to strong arguments reported significantly more positive attitudes ($M = 4.62$, $SD = 1.99$) than their counterparts exposed to weak arguments ($M = 2.74$, $SD = 1.35$), $t(492) = -8.02$, $p < .001$. Interestingly, when participants were presented with weak

arguments, participants who received weak arguments framed in bullshit reported more positive attitudes than their counterparts who received weak arguments framed in evidence-based reasoning, $t(492) = 3.29$, $p = .001$. However, when participants received strong arguments, participants who received strong arguments framed in evidence-based reasoning reported significantly more positive attitudes than their counterparts who received strong arguments framed in bullshit, $t(492) = -2.69$, $p = .007$.

Mediation analysis. Parallel Argument Quality \times Argument Frame interactions on Thought Favorability and Attitude are consistent with Thought Favorability mediating the Argument Quality \times Argument Frame interaction on Attitude. This type of mediated moderation would be reflected in the observed Argument Quality \times Argument Frame interaction on Thought Favorability, coupled with a direct relationship between Thought Favorability and Attitude.

Muller, Judd, and Yzerbyt (2005) specified a set of hierarchical regression analyses (see also Wegener & Fabrigar, 2000) in which the interaction term (controlling for the main effects) is used as the initial predictor. A bootstrap procedure that constructs bias-corrected confidence intervals based on 5,000 random samples with replacement from the full sample, as recommended by methodologists and statisticians (Preacher & Hayes, 2004, 2008) was employed (see macro by Hayes, 2013). This method tests whether or not the size of an indirect effect differs significantly from zero.

As described earlier, significant Argument Quality \times Argument Frame interactions on Thought Favorability and Attitude were obtained. A final regression analysis, including the effects of all the distal predictors on the criterion (Attitude) and the mediator (Thought Favorability), was computed (PROCESS model 4; Hayes, 2013). Thought Favorability and Attitude were positively and significantly correlated, $r(494) = .77$, $p < .001$. The size of the indirect effect was .56 ($SE = .28$), and the confidence interval excluded zero, 95% CI [0.05, 1.14]. Thus, Thought Favorability significantly mediated the relationship between the Argument Quality \times Argument Frame interaction and Attitude (see Figure 2).

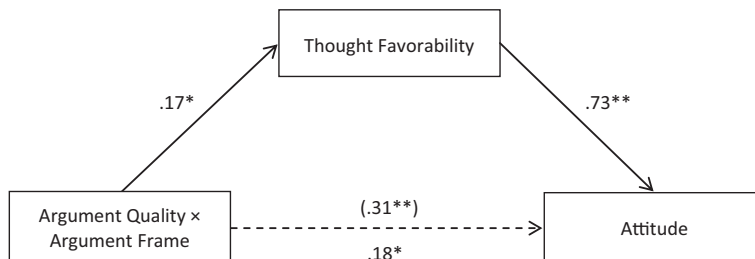


Figure 2. Mediation moderation of the link between the Argument Quality \times Argument Frame interaction and attitude by Thought Favorability (Experiment 1). Note. Argument Quality conditions were dummy-coded using 0 for weak arguments and 1 for strong arguments. Argument Frame conditions were dummy-coded using 0 for bullshit frame and 1 for evidence-based frame. Values displayed are standardized regression coefficients. * $p < .05$; ** $p < .001$.

Discussion

Analyses of both the Thought Favorability data and the Attitude data strongly support the hypothesized persuasiveness of arguments framed in either bullshit or evidence-based reasoning of varying strength. When armed with only weak arguments, bullshitting appears to augment the effectiveness of persuasive attacks relative to evidence-based frames of the same arguments. On the other hand, when armed with strong arguments, bullshitting appears to attenuate the effectiveness of persuasive attacks relative to evidence-based frames of the same arguments. Conceivably, bullshit frames contain cues to lax or superficial argumentation, which may induce participants to process via the peripheral route. Also, one of the aspects of strong arguments that makes them strong is that they are free of bullshit. Apparently, couching strong arguments in a bullshit frame can impede one's persuasiveness relative to an evidence-based frame. However, when persuaders do rely on bullshit, the results suggest that argument quality is irrelevant – they appear to have the same level of potency.

Consistent with the cognitive responses model of persuasion, Thought Favorability mediated the interactive Argument Quality \times Argument Frame link with Attitude. Thus, conditions that significantly influence cognitive responses also appear to influence attitudes.

The Experiment 1 data are consistent with the theoretical position that bullshit frames tend to lead people to engage in peripheral route processing and evidence-based frames tend to lead people to engage in central route processing. However, the data do not fully test this assertion. If the assertion is true, it should be possible to demonstrate that people exposed to bullshit frames are influenced by factors diagnostic of peripheral route processing (e.g., source attractiveness), whereas people exposed to evidence-based are influenced by factors diagnostic of central route processing (e.g., argument quality); this was the focus of Experiment 2.

EXPERIMENT 2

Similar to the two two-way interactions between involvement, number of arguments, and argument quality demonstrated by Petty and Cacioppo (1984), such results may further suggest that bullshit framing can lead to attitude change by eliciting peripheral processing whereas evidence-based framing leads to attitude change by eliciting central processing. Experiment 2 participants read background information about a generally pro-attitudinal policy (i.e., extending the Spring Break period from 1 to 2 weeks). Before reporting their attitude regarding the policy, participants reviewed weak or strong arguments *against* the proposed university policy couched in bullshit or evidence-based frames. Thus, the persuasive message was designed to reduce the positivity of attitudes towards the policy.

Consistent with Frankfurt's (1986) position that social perceivers tend to dismiss bullshit, rather than counterargue against it, bullshit frames are generally expected to decrease motivation to systematically evaluate the quality of arguments in a persuasive message. Anything that *reduces* [increases] motivation or ability to carefully evaluate the quality of arguments in a persuasive message increases the likelihood of attitude change through the *peripheral* [central] route (Petty & Cacioppo, 1984, 1986). Thus, bullshit frames are expected to elicit peripheral route processing and thereby reduce the impact of argument quality but increase the impact of peripheral route cues on attitudes (e.g., source attractiveness). On the other hand, evidence-based frames were generally expected to elicit central route processing and thereby increase the impact of argument quality but reduce the impact of peripheral route cues on attitudes.

If the type of argument frame has this effect on cognitive elaboration, bullshit frames should attenuate the effectiveness of strong arguments over that of weak arguments, as evidenced by fewer favourable thought responses (i.e., responses in alignment with the position depicted by the persuasive arguments) resulting in more positive attitudes relative to that of evidence-based frames of the same arguments. Instead, source attractiveness (a factor diagnostic of peripheral route processing; Shavitt, Swan, Lowrey, & Wänke, 1994) should be influential to attitudes and Thought Favorability among participants exposed to bullshit frames (i.e., where peripheral route processing is expected to emerge). Conversely, evidenced-based frames should augment the effectiveness of argument quality (a factor diagnostic of central route processing), as evidenced by more favourable thoughts in response to the persuasive message resulting in more negative (less positive) attitudes, relative to that of bullshit frames of the same arguments. On the other hand, peripheral cues like source attractiveness should be less influential to attitudes and Thought Favorability among participants exposed to evidence-based frames (i.e., where central route processing is expected to emerge).

Essentially, this perspective holds that evidence-based frames of persuasive arguments lead to central route processing whereas bullshit frames of persuasive arguments lead to peripheral route processing. It is important to note that prior research suggests that central route processing is employed by receivers when sources of arguments appear to be untrustworthy or biased. In fact, source credibility, in the form of knowledge, expertise, competence, and trustworthiness, has tended to elicit peripheral route processing (Priester & Petty, 1995, 2003).

However, not only do social perceivers appear to recognize essential differences between bullshitters and liars and respond to bullshitters with much less disdain, social perceivers tend to view bullshitters as relatively more ignorant, likely expressing their opinions, and trying to impress others than they do liars (Petrocelli et al., 2020). Bullshitters also avoid the judgements of dishonesty and untrustworthiness that liars inherit (Frankfurt, 1986; Petrocelli et al., 2020). Furthermore, Petty (1997) and Petty and Wegener (1999) have argued persuasively that variables affecting motivation and/or ability to process a message in a relatively objective manner can do so by either enhancing or reducing argument scrutiny. Thus, variables that appear to traditionally elicit *peripheral* [central] route processing can also elicit *central* [peripheral] route processing if they prompt social perceivers to *objectively* [subjectively] process a message. In the case of processing bullshit, the opposite is expected. That is, messages from bullshitters would be expected to be associated with untrustworthiness and lack of knowledge/competence and may thereby be expected to elicit greater argument scrutiny (central route processing). However, bullshitting versus evidence-based communicating can act orthogonally to source credibility, expertise, and trustworthiness. Statements by a message source that he/she *is* [is not] concerned with how their communication aligns with available evidence are expected to motivate social perceivers to process the persuasive message through the *central* [peripheral] route because *scrutinizing* [ignoring] the available evidence is consistent with this route of processing. As such, bullshitters and evidence-based communicators may not only motivate, but model, the appropriate and preferred processing route for receivers to also adopt. Thus, the bullshit-peripheral route processing and evidence-based-central route processing links are consistent with prior work.

Method

Participants and design

Given that two separate 2×2 interactions were expected to emerge from a $2 \times 2 \times 2$ ANOVA design, sample size was determined using the same method as that employed for Experiment 1 (requiring a minimum sample size of $N = 259$ to detect a small-to-medium effect, $f = .175$). Correspondingly, a sample of 532 college undergraduates (52.4% female, $M_{\text{age}} = 18.52$, $SD = 2.01$), enrolled in an introductory psychology course, were recruited to participate in a laboratory study in exchange for partial course credit. A 2 (Argument Quality: weak vs. strong) $\times 2$ (Argument Frame: bullshit vs. evidence-based) $\times 2$ (Source Attractiveness: unattractive vs. attractive) complete between-groups design was employed, whereby participants were randomly assigned to conditions. Attitude served as the dependent variable.

Materials and procedure

All experimental materials were presented through a self-administered computer questionnaire using MediaLab v2016 Research Software (Jarvis, 2016); participants advanced by clicking appropriate response keys.

Issue information. Participants read about the alleged notion that in addition to application changes such as the waiver of SAT scores, university administrators and faculty have begun to consider a new policy that would extend the 1 week Spring Break to 2 weeks and that students were being surveyed for their thoughts and opinions about the proposal. Furthermore, if implemented, the new Spring Break Policy would begin in the next academic year and would apply to all students currently enrolled at the university.

Argument quality and argument frame. It was then explained to participants that before stating their thoughts and opinions about the policy they would be asked to review a statement made by a recent graduate of their university. Participants read persuasive arguments in favour of the policy. Specifically, participants were randomly assigned to an Argument Quality condition whereby they reviewed a passage including three weak or strong arguments. The weak arguments described somewhat undesirable consequences while the strong arguments described very undesirable consequences (Tobin & Raymundo, 2009).

Participants were also randomly assigned to an Argument Frame condition whereby the argument set was framed using bullshit or evidence-based reasoning. Participants assigned to the *bullshit* [evidence-based] frame read arguments designed to suggest that source of the statement held *little to no interest* [considerable interest] in available and genuine evidence.

Specifically, *bullshit* [evidence-based] condition participants read: 'Please know that the recent graduate was instructed to *consider anything that came to mind and to disregard any concern for genuine evidence* [only consider genuine evidence] in support of his/her position on the policy when explaining his/her position on the new Spring Break policy. Our study team has confirmed that the author of the response you are about to review, adequately followed the instructions set forth'.

Source attractiveness. Matched with the persuasive message was the display of a photograph of the alleged source of the message. Participants were randomly assigned to receive an alleged male or female source photograph. Participants assigned to the attractive condition received either photograph CFD-WF-238-023-N (white female) or photograph CFD-WM-004-010-N (white male) whereas Participants assigned to the unattractive condition received either photograph CFD-WF-028-023-N (white female) or CFD-WM-227-099-N (white male) of the Chicago Face Database (see: Ma, Correll, & Wittenbrink, 2015).

Attitude. Participants were then asked to report their attitude using the same method as that described in Experiment 1 (Cronbach's $\alpha = .97$).

Thought favorability. Participants then coded each of their thought-listings using the same method as that described in Experiment 1. Thought Favorability index was computed by calculating the average of the five ratings.

Manipulation checks. Participants responded to two items included to test attention and understanding of the Argument Quality (i.e., 'How *compelling* [strong] do you find the communicator's arguments to be?') using an seven-point scale with *not at all/very weak* (1) to *extremely/very strong* (7) as the anchor labels (Cronbach's $\alpha = .86$), as well as four items included to test attention and understanding of the Argument Frame (i.e., 'How much do you think the communicator's thoughts are *based on* [concerned with/concerned with genuine/concerned with ideal] evidence?') using an eleven-point scale with *not at all* (1) to *entirely* (11) as the anchor labels (Cronbach's $\alpha = .88$). Finally, to test the manipulation of attractiveness, participants responded to 'How attractive was the communicator?' using an seven-point scale with *not at all* (1) to *extremely* (7) as the anchor labels. Several self-report measures were also collected for exploratory purposes only after the measurement of the dependent variables. Participants were then thanked for their time and debriefed.

Results

Manipulation checks

The Argument Quality was statistically significant, $F(1, 530) = 4.50$, $p = .034$, $\eta^2_{\text{partial}} = .02$, such that participants exposed to strong arguments rated the arguments more compelling, more clear and stronger ($M = 4.23$, $SD = 1.34$) than did participants exposed to weak arguments ($M = 3.62$, $SD = 1.39$).

The Argument Frame manipulation was successful, $F(1, 530) = 4.62$, $p = .032$, $\eta^2_{\text{partial}} = .009$, such that participants exposed to evidence-based frame arguments rated the argument as indicative of a greater concern for evidence ($M = 5.31$, $SD = 2.00$) than did participants exposed to bullshit frame arguments ($M = 4.94$, $SD = 1.95$).

Likewise, the Source Attractiveness manipulation was successful, $F(1, 530) = 97.29$, $p < .001$, $\eta^2_{\text{partial}} = .155$, such that participants exposed to an attractive source rated the source more attractive ($M = 3.98$, $SD = 1.59$) than did participants exposed to an unattractive source ($M = 2.71$, $SD = 1.37$).

Thought favorability

Clearly, participants tended to think favourably about the position shared in the passage as evidenced by the positive Thought Favorability sample mean ($M = 1.65$, $SD = 2.68$).⁴ These data were subjected to a 2 (Argument Quality: weak vs. strong) \times 2 (Argument Frame: bullshit vs. evidence-based) \times 2 (Source Attractiveness: unattractive vs. attractive) ANOVA. A significant main effect of Argument Quality emerged, $F(1, 524) = 6.06$, $p = .014$, $\eta^2_{\text{partial}} = .011$, such that thoughts were more favourable towards the direction of the persuasive message when the arguments were strong ($M = 1.37$, $SD = 2.77$) than when they were weak ($M = 1.93$, $SD = 2.57$). Argument Frame significantly affected Thought Favorability, $F(1, 524) = 6.30$, $p = .012$, $\eta^2_{\text{partial}} = .012$, such that thoughts were more favourable towards the direction of the persuasive message when the arguments were framed with concern for evidence ($M = 1.37$, $SD = 2.83$) than when they were framed in bullshit ($M = 1.93$, $SD = 2.51$). Source Attractiveness also significantly affected Thought Favorability, $F(1, 524) = 13.12$, $p < .001$, $\eta^2_{\text{partial}} = .024$, such that thoughts were more favourable towards the direction of the persuasive message when the arguments allegedly came from an attractive source ($M = 1.24$, $SD = 2.72$) than when they came from an unattractive source ($M = 2.06$, $SD = 2.59$).

However, consistent with expectations, these results were qualified by an Argument Quality \times Argument Frame interaction, $F(1, 524) = 9.55$, $p = .002$, $\eta^2_{\text{partial}} = .018$ (see the top panel of Figure 3). When arguments were framed in bullshit, no effect was observed for Argument Quality: weak arguments ($M = 1.87$, $SD = 2.60$), strong arguments ($M = 1.99$, $SD = 2.41$), $t(524) = -.39$, $p = .691$. However, when arguments were framed with concern for evidence, a strong main effect was observed for Argument Quality, such that thoughts were less favourable (in line with the direction of the persuasive message) when arguments were strong ($M = .73$, $SD = 2.97$) than when they were weak ($M = 1.99$, $SD = 2.54$), $t(524) = 3.89$, $p < .001$.

The Source Attractiveness \times Argument Frame interaction failed to reach statistical significance, $F(1, 524) = 1.68$, $p = .196$ (see the bottom panel of Figure 3). However, a follow-up analysis revealed that when arguments were framed in bullshit, a strong effect was observed for Source Attractiveness, such that thoughts were less favourable (in line with the direction of the persuasive message) when the source was attractive ($M = 1.37$, $SD = 2.68$) than when he/she was unattractive ($M = 2.49$, $SD = 2.19$), $t(524) = 3.48$, $p < .001$. However, when arguments were framed with concern for evidence, a marginal (but relatively weaker) effect was observed for Source Attractiveness: unattractive source ($M = 1.62$, $SD = 2.88$), attractive source ($M = 1.11$, $SD = 2.75$), $t(524) = 1.62$, $p = .105$. No other effects emerged as statistically significant.

Attitude

The participants expressed relatively positive attitudes about the policy ($M = 6.47$, $SD = 2.04$). Attitude data were subjected to the same analysis as that employed for the Thought Favorability data. Recall that lower Attitude scores are indicative of more persuasion in Experiment 2. A significant main effect of Argument Quality emerged, $F(1, 524) = 8.85$, $p = .003$, $\eta^2_{\text{partial}} = .017$, such that greater persuasion was observed when the persuasive message was strong ($M = 6.21$, $SD = 2.11$) than when it was weak

⁴ In an initial examination of the data, it was clear that Sex of Source did not affect Thought Favorability directly or in conjunction with the other factors; thus, it was excluded from subsequent analyses.

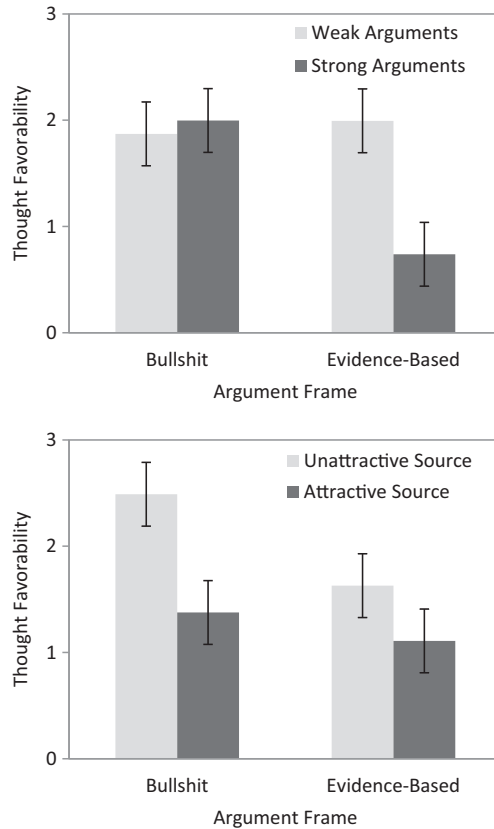


Figure 3. Thought Favorability means by Argument Frame and Argument Quality, and by Argument Frame and Source Attractiveness (Experiment 2); error bars represent ± 1 standard error.

($M = 6.72$, $SD = 1.96$). Argument Frame significantly affected Attitude, $F(1, 524) = 8.20$, $p = .004$, $\eta_{\text{partial}}^2 = .015$, such that greater persuasion was observed when the arguments were framed with concern for evidence ($M = 6.22$, $SD = 2.17$) than when they were framed in bullshit ($M = 6.71$, $SD = 1.90$). Source Attractiveness also significantly affected Attitude, $F(1, 524) = 14.41$, $p < .001$, $\eta_{\text{partial}}^2 = .027$, such that greater persuasion was observed when the arguments were allegedly came from an attractive source ($M = 6.15$, $SD = 2.09$) than when they came from an unattractive source ($M = 6.79$, $SD = 1.95$).

However, consistent with expectations, these results were also qualified by an Argument Quality \times Argument Frame interaction, $F(1, 524) = 15.14$, $p < .001$, $\eta_{\text{partial}}^2 = .028$ (see the top panel of Figure 4). When arguments were framed in bullshit, no effect was observed for Argument Quality: weak arguments ($M = 6.64$, $SD = 2.05$), strong arguments ($M = 6.78$, $SD = 1.72$), $t(524) = -.58$, $p = .557$. However, when arguments were framed with concern for evidence, a strong main effect was observed for Argument Quality, such that greater persuasion was observed when arguments were strong ($M = 5.64$, $SD = 2.30$) than when they were weak ($M = 6.81$, $SD = 1.86$), $t(524) = 4.81$, $p < .001$.

Also consistent with expectations was the emergence of a statistically significant Source Attractiveness \times Argument Frame interaction, $F(1, 524) = 6.02$, $p = .014$,

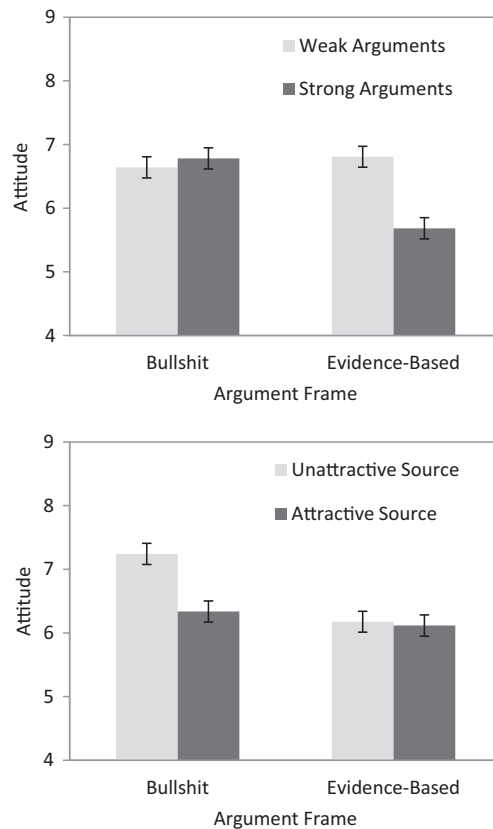


Figure 4. Attitude means by Argument Frame and Argument Quality, and by Argument Frame and Source Attractiveness (Experiment 2); error bars represent ± 1 standard error.

$\eta^2_{\text{partial}} = .011$ (see the bottom panel of Figure 4). When arguments were framed in bullshit, a strong main effect was observed for Source Attractiveness, such that greater persuasion was observed when the source was attractive ($M = 6.33$, $SD = 2.27$) than when he/she was unattractive ($M = 7.24$, $SD = 1.45$), $t(524) = 3.76$, $p < .001$. However, when arguments were framed with concern for evidence, no effect was observed for Source Attractiveness: unattractive source ($M = 6.17$, $SD = 2.13$), attractive source ($M = 6.11$, $SD = 2.05$), $t(524) = .25$, $p = .803$. No other effects emerged as statistically significant.

Mediation analysis. Because significant Argument Quality \times Argument Frame and Source Attractiveness \times Argument Frame interactions on Thought Favorability and Attitude were obtained. A final regression analysis, including the effects of all the distal predictors on the criterion (Attitude) and the mediator (Thought Favorability), was computed (i.e., PROCESS model 10; Hayes, 2013). Thought Favorability and Attitude were positively and significantly correlated, $r(530) = .84$, $p < .001$. The size of the indirect effect leading from the Argument Quality \times Argument Frame interaction was $-.87$ ($SE = .29$), and the confidence interval excluded zero, 95% CI $[-1.45, -.31]$. However,

the size of the indirect effect leading from the Source Attractiveness \times Argument Frame interaction was .36 ($SE = .28$), and the confidence interval excluded zero, 95% CI $[-0.17, 0.92]$. Thus, Thought Favorability significantly mediated the relationship between the Argument Quality \times Argument Frame interaction and Attitude but did not simultaneously mediate the link between the Source Attractiveness \times Argument Frame interaction and Attitude (see Figure 5).

Discussion

Results of Experiment 2 further suggest that bullshit framing leads to attitude change by eliciting peripheral processing whereas evidence-based framing leads to attitude change by eliciting central processing. As with Experiment 1, Thought Favorability mediated the link between Argument Quality and Attitude, but only when Argument Quality was considered in light of the Argument Frame (bullshit vs. evidence-based). The lack of mediation of Thought Favorability starting with the Source Attractiveness \times Argument Frame interaction is consistent with peripheral route processing that does not typically result from differences in the quality of thoughts in response to persuasive attacks (Petty & Cacioppo, 1984).

General discussion

Given that bullshit can be (mis)perceived as something profound (e.g., Pennycook, Cheyne, Barr, Koehler, & Fugelsang, 2015), it is important to understand the conditions under which bullshit poses potential consequences and/or utilities.

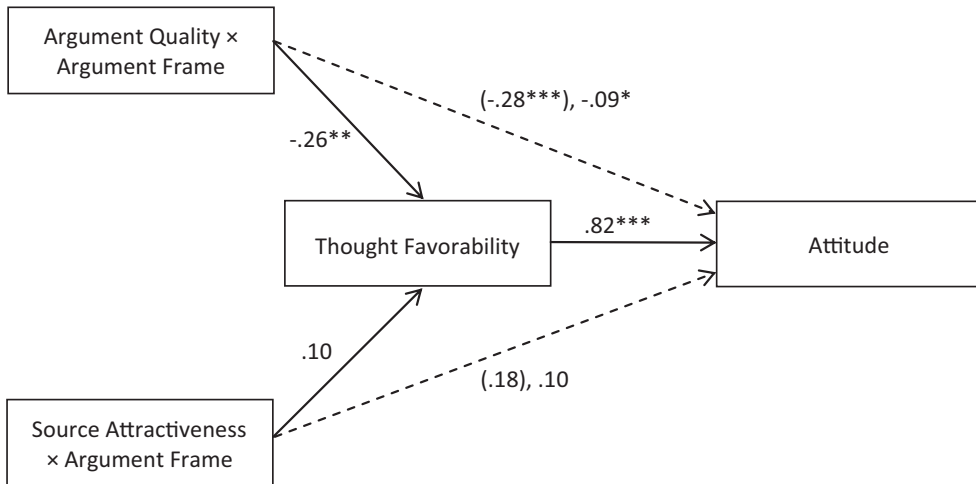


Figure 5. Mediation moderation of the links between the Argument Quality \times Argument Frame interaction, the Source Attractiveness \times Argument Frame and attitude by Thought Favorability (Experiment 2). Note. Argument Quality, Source Attractiveness, and Argument Frame conditions were dummy-coded using 0 for weak arguments, unattractive, and bullshit, respectively, and 1 for strong arguments, attractive, and evidence-based, respectively. Values displayed are standardized regression coefficients. * $p < .05$; ** $p < .01$; *** $p < .001$.

Analyses of both the Thought Favorability data and the Attitude data strongly support the hypothesized persuasiveness of arguments of varying strength and argument frame – arguments framed in either bullshit or evidence-based reasoning. When armed with only weak arguments, bullshitting appears to augment the effectiveness of persuasive attacks relative to evidence-based frames of the same arguments. On the other hand, when armed with strong arguments, bullshitting appears to attenuate the effectiveness of persuasive attacks relative to evidence-based frames of the same arguments. Conceivably, bullshit frames contain cues to lax or superficial argumentation, which may induce participants to process via the peripheral route. Also, one of the aspects of strong arguments that makes them strong is that they are free of bullshit. Apparently, couching strong arguments in a bullshit frame can impede one's persuasiveness relative to an evidence-based frame. However, when persuaders do rely on bullshit, the results suggest that argument quality is irrelevant – they appear to have the same level of potency.

Consistent with the cognitive responses model of persuasion, Thought Favorability also mediated the interactive Argument Quality \times Argument Frame link with Attitude. Thus, conditions that significantly influence cognitive responses also appear to influence attitudes. In line with these mediational results, greater confidence is placed in the conclusion that evidence-based frames of persuasive arguments lead to central route processing whereas bullshit frames of persuasive arguments lead to peripheral route processing. Such conclusions counter prior research suggesting that central route processing is employed when sources of arguments appear to be untrustworthy or biased (Priester & Petty, 1995, 2003). Social perceivers do appear to judge bullshitters as relatively ignorant, simply expressing their opinions, and trying to impress others (Petrocelli et al., 2020). But, if bullshitters are also associated with untrustworthiness and lack of competence, it does not necessarily mean that their bullshit will be processed using the central route. Variables that appear to traditionally elicit central route processing can also elicit peripheral route processing if they prompt social perceivers to subjectively process a message (Petty, 1997; Petty & Wegener, 1999). Statements by a message source that he/she *is* [is not] concerned with how their communication aligns with available evidence are expected to nudge social perceivers to also process the message through the *central* [peripheral] route because *scrutinizing* [ignoring] the available evidence is consistent with this route of processing. As such, bullshitters and evidence-based communicators appear to motivate and model the appropriate and preferred processing route for receivers to also adopt.

As distinct pathways to attitude change, use of the peripheral and central processing route depends greatly on one's motivation and ability to carefully scrutinize the arguments contained by a persuasive message (Petty & Cacioppo, 1984, 1986). If the source of a persuasive message clearly isn't concerned with truth and evidence, and is thereby either unable or unwilling to put forth the needed effort and time towards developing evidence-based reasons for their attitude, why should the immediate audience be any more motivated to do so? Participants in the current experiments would not be reasonably expected to engage in evidence-based reasoning (a high-elaboration activity), any more than the source of the message. Evidence-based reasoning and communication require a depth of cognitive elaboration and are thereby negatively associated with bullshitting. If the source of the persuasive message isn't taking the issue seriously enough to engage in evidence-based reasoning and communication, receivers would not be expected to either, rather 'shrugging off' bullshit just as Frankfurt (1986) conjectured.

The current findings are also suggestive of a potential antecedent of bullshitting, and may thereby shed light on understanding its prevalence. That is, one reason that people

may engage in so much bullshitting is that it happens to be effective. Not every persuasive attempt is going to be armed with strong arguments. If one's only option is to employ weak arguments, 'bullshitting one's way through' to whatever extent the circumstances may require may lead to success in shaping the attitudes of others.

Consistent with the implications of the current findings, bullshitting can be a relatively persuasive mode of communication under specific conditions. Such knowledge is critical to the social influencer as he/she is not always in possession of strong arguments. The results suggest that if one's motive is to persuade and he/she is in possession of strong arguments, any communicative content that appears to be bullshit can have a deleterious effect on persuasion. However, when one is not in possession of strong arguments, it may be to his/her advantage to engage in bullshitting.

Limitations and future directions

These conclusions warrant some caution as perceptions of bullshitting behaviour may depend on whether the perceiver is a participant in the interaction (as is the case in many instances of bullshit exposure) or merely an observer. What appears to be bullshitting from an outsider's perspective may not be considered bullshitting by those actively engaged in the encounter. To the extent that the current studies placed participants in the position of an external or internal observer, but not as an active conversant, the generalizability of the findings to involved participants should be examined.

It is important to note that the current experiments utilized WEIRD (white, educated, industrialized, rich, and democratic) samples. Although bullshitters do not appear to receive as much disdain as liars in such samples, it is quite possible that in non-WEIRD samples the relative disdain expressed towards bullshitters is as great as that of liars. That is, culture and other demographics (e.g., age, generation, and geographic region) may very well moderate the interactive effects of communicative frame and peripheral/central route cues reported here. Future research would do well to investigate the boundaries of antecedents and consequences of bullshitting behaviour among broader and more diverse samples.

The communicative functions of bullshitting would appear to be numerous. To what extent does bullshit satisfy social purposes of opinion expression, social bonding, entertainment, or killing awkward silence? A better understanding of the potential communicative functions of bullshitting would provide important insights into this behaviour.

Greater understanding concerning the consequences of bullshitting is also needed. In their seminal examination of religious beliefs, Festinger's, Riecken, and Schachter (1956) found that the effects of bullshitting can be far-reaching. Judging from more recent cult activity, the consequences of bullshitting can be quite severe. Thus, our understanding of the degree to which people may be influenced by bullshit is critical to the human condition. Understanding how to reduce reliance on bullshitting, or the negative consequences of it, seem imperative. That which Frankfurt (1986) claimed to be the opposite of bullshitting (i.e., thinking and communicating with a concern for truth) is essential to sound judgement, reasoning, and decision-making; sound judgement and decision-making simply cannot do without evidence- or knowledge-based information.

Conflicts of interest

All authors declare no conflict of interest.

Author contribution

John Petrocelli (Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing – original draft; Writing – review & editing).

Data availability statement

The data and materials for all experiments are available at https://osf.io/gezj3/?view_only=52f19f44bbc740ecb8ebda8bd250cd1d and none of the experiments were pre-registered.

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