A literature review of bullshit receptivity: Perspectives for an informed policy making against misinformation

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Abstract

Since the publication of Pennycook and colleagues' (2015) paper on the reception of pseudo-profound bullshit, the concept of bullshit (BS) receptivity has slowly gained interest as an individual characteristic of people with the tendency to be overly receptive of and sensitive to fake claims. This paper seeks to identify and discuss peer-reviewed literature that applies BS receptivity scales, to better define their role within the bigger picture of the characteristics of those individuals particularly prone to the reception of a whole range of outlandish beliefs. Considering the cross-cutting nature of the issue, we prompt the need for further empirical and applicative research, and underline that – with BS receptivity belonging to the set of determinants contributing to flawed decision-making in terms of spotting genuine from fake content – greater involvement of behavioral economists is desirable. We call for such involvement not only within the BS debate, but also in assisting policymakers in their hard task of developing tailored policy responses and digital literacy interventions to combat misinformation and disinformation at its roots.

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Introduction

It is now thirty-three years since the American philosopher Harry Frankfurt acknowledged that bullshit (BS) is everywhere (Frankfurt 2009) [1]. Unfortunately, three decades later, we are still not well-equipped against the receptivity of this subtle form of misinformation, neither as scientists, nor as citizens. Many domains, such as the business one, are witnessing a fast-paced advancement around BS research – with practitioners and researchers already efficiently joining forces to devote effort to this issue within a framework specifically designed for helping individuals cope with these noxious forms of communication (Bergstrom and West (2021); McCarthy, Hannah, Pitt and McCarthy (2020b)).

In this sense, the study of receptivity to bullshit can be framed as part of the wider research domain investigating the epistemic motives driving individuals to come to terms with outlandish beliefs (Douglas, Sutton, and Cichocka 2017). Specifically, research in economic psychology has framed it within the concept of Homo Ignorans and the potential determinants behind their deliberate choice not to strive for information accuracy, even when the prospective benefits in terms of good decision-making largely outweigh the costs of gaining more information (i.a., Persson and Tinghög, (2020); Gigerenzer and Garcia-Retamero, (2017); Hertwig and Engel (2016)).

There are many touchpoints between BS receptivity research and a wide array of topics already well-established in the behavioral economics literature. From the investigation of a wide set of potentially relevant biases (e.g., confirmation, perceptual and statistical biases) to cost-benefit analysis as a means of responding to misinformation (Sunstein 2014), from the role of the dual-process theory in filtering misinformation to the development of strategies adopted in response to flaws in human decision-making processes – and all of the consequent implications of epistemically-paternalistic approaches such as epistemic nudging (Meehan 2020). Nevertheless, both BS and BS receptivity have so far raised only a mild interest within the field, both in terms of the development of an empirically based conceptual framework and in terms of appropriate acknowledgment of its relevance for the fight against misinformation.

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[1] The first version of Frankfurt's essay *On Bullshit* appeared in 1986. Here we refer to the monograph that Frankfurt re-wrote years later (Frankfurt 2009), and that eventually turned out to be a milestone in BS research.

So, on the one hand, different forms of misrepresentation of reality, ranging from simple lying to bullshitting, from the spread of fake news to the development of broader conspiracy theories are the object of an open and fervent ethical and epistemological debate. On the other hand, although scarce, the existing empirical literature has already revealed that the belief in different forms of misrepresentation of reality is to some extent linked to a general tendency to be overly accepting and receptive of a different sort of BS (i.e. Hart and Graether, (2018); Pennycook and Rand, (2020)).

In this paper, we underline how we can try to tackle the threat BS might pose by summing up work devoted to spotting who falls for it and why they are so receptive to it. As we cannot talk of BS receptivity without properly defining BS, the remainder of this paper is structured as follows: we first provide an overview of the concept and formalization of BS, its relevance within the digital environment, and the reasons behind our focus on its receptivity rather than its productivity. In this vein, we then perform a literature review of BS receptivity, from 2015 to date. Finally, we focus on how behavioral economics might exert more influence over the development and implementation of public policies, so as to accomplish the hard task of inoculating citizens against such mis/disinformation flow.

Defining bullshit

The concept of BS has been defined as a claim or a statement that is constructed without any concern for the truth (Frankfurt, (2009); Pennycook et al. (2015)). The resulting widely agreed-upon definition of a bullshitter is that of someone who "bears no allegiances to conveying the truth" (Bergstrom and West 2021, 40), and who will, thus, engage in utterances that are purposely tailored to "obscure [both] the question of truth or falsity" (Wakeham 2017, 17). On this premise, a first core aspect to take into account when discerning bullshitting from lying should be attributed to the speakers' concern or regard for the truth. Although lingering on such utter carelessness toward the reality that denotes the concept of bullshit, in his seminal essay on the topic, Frankfurt himself does not provide hands-on examples of BS (Frankfurt, 2009).

Providing some instances might help clarify the insidious "regard for truth" aspect of its definition, underlining how BS and lying are both parts of a very similar deceptive phenomenon and can be discerned in terms of positioning along the certainty-uncertainty continuum of truth, depending on the speaker's opinion about the veracity of what (s)he is saying (Marsili 2014).

Along those lines, a famous, archetypal example of bullshitting was provided in 2018 – by his very own admission – by former U.S. President Donald Trump who, during a meeting with the Prime Minister of Canada, Justin Trudeau, was told that Canada had no trade deficit with the U.S. Trump strongly rebutted Trudeau's claims, although later on – in a speech held during a fundraiser in Missouri – he admitted that he had no idea whether the U.S. ran a trade deficit with

Canada or not at the time of speaking and was only stubbornly trying to prove Trudeau wrong (Heer 2018).

Trump's example allows us to underline some core aspects of BS. First, it shows how the focus of a bullshitter is completely careless of the truth of facts. Second, it underlines that a bullshitter will generally pick facts out or make them up on the spot, to suit their purposes – with such purposes mostly being saying whatever is needed to persuade, manipulate and impress an audience (Bergstrom and West 2021) so as to further their agenda and their personal advancements (Foroughi, Fotaki, and Gabriel (2019); McCarthy, Hannah, and McCarthy, (2020a)). Third, it stresses intentionality behind the communicative act framed as bullshitting. These first three remarks lead us to a partial definition of bullshit as a form of communication that involves indifference to the truth or attempts to pursue one's own truth by faulty or even maligned epistemic intentions (Spicer 2020), thus defining BS as intentional, deliberate and strategic (Littrell and Fugelsang, (2021b); Reisch (2006); Mears (2002)).

From a purely linguistic point of view, Meibauer (2018) helps formalize and sum up such aspects, by labeling an utterance as BS if, at the time t, a speaker asserts p if:

(a) the speaker acts as if (s)he asserted that p although
(b) the speaker neither intended to present p as true nor intended to present it as false
(c) and the speaker intended that the addressee did not become aware of (b)

with (b) being the no-regard for the truth *sine qua non* for calling BS, and *(*c) underlining the willful intent behind the reason for flouting of the conversational maxim of quality[2].

From fake content to real behaviors

Although all-encompassing and efficient enough to help us call BS from other forms of deception, the so-far analyzed definitions of BS still lack specific stress on how such maliciousness and complete negligence for truth leads to an almost paradoxical ability to manufacture truth thanks to the role that

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[2]Both the concept and the definition of bullshit are deeply intertwined with rhetoric and communication studies. So, prior knowledge in linguistics and pragmatics can serve as a further compass in the search for a set of unified features of BS. Although going far beyond the purposes of this work, it is worth noting that, during a communicative act, in their pursuit to mutual comprehension, speakers will follow what Grice (1975) defines as cooperative principle. Grice breaks down his cooperative principle into four conversational norms (or maxims): the maxim of Quality (Do not say what you believe to be false or something for which you lack adequate evidence); the maxim of Quantity (Make your contribution as informative as required); the maxim of Relation (Be relevant); and the maxim of Manner (be perspicuous, e.g., by avoiding obscure language). In everyday communication, however, we do not always follow the maxims, and this does not mean that we are nor lying or bullshitting, but simply that we are building our communication on a conversational level, and not on a literal one. We flout maxims because we know that we share with our recipient enough contextual information and linguistic/communicative competence to properly interpret it, for example as sarcasm or irony. Bullshitting occurs when we are not flouting, but actually violating the maxim as to deceive a hearer that we know only possess the ability or knowledge to the surface meaning of our utterances *(ibid.)*

social media plays in spreading bullshit content, sometimes even over genuine, fact-checked ones.

Going back to our example, according to the Office of the United States Trade Representative, Trump was indeed wrong about the trade balance between the U.S. and Canada. However, even after the fact-checking happened, the former U.S. President and his supporters had already been reiterating the initial, fake claims. Rumors had already been given credibility through poorly presented and misinterpreted data, and lies had already been patented enough so that the line between truth and lies got subtler and subtler.

It is indeed crystal clear that BS – as reported in the first set of definitions – is not a recent phenomenon, not in politics nor in everyday life: even Plato in his Socratics dialogues used to criticize Sophists' interest in winning arguments, without concern for reaching an objective truth (Bergstrom and West 2021). What is new is the ability that BS has been gaining in terms of corroding a shared and objective standard for truth (Biesecker 2018), combined with the unprecedented level of real-time spread potential of social media contents (Cinelli, Quattrociocchi, Galeazzi, Valensise, Brugnoli, Schmidt, Zola, Zollo, and Scala 2020). Simply put, although BS has always been easy to create, it has not always been so easy to spread. Once produced and reiterated enough – a BS can now easily make its way to headlines and, aided by viral spread on social media (Bergstrom and West 2021) – it will saunter into public opinion, settling as sediment for further layers of a whole range of misinformation phenomena and irrational beliefs, from fake news to full-bodied conspiracy theories (Iacobucci and Palumbo 2021).

The real-life implications of misinformation have thus been raising growing concerns, capturing the attention of policymakers worldwide. Among others, the European Commission in 2018 started outlining the core overarching principles and objectives aimed at guiding the Commission's actions in its task to raise public awareness about disinformation and tackle the phenomenon (European Commission 2018)). Such need to raise awareness and act promptly against the impact of fake claims on real behaviors dramatically peaked in 2020. Since the COVID-19 outbreak was officially declared a pandemic by the WHO in March of 2020 (World Health Organization 2020), we have witnessed an unprecedented spread of misinformation and fake news and their ill-fated effects on real behaviors. Emblematically, throughout that very same month, while the number of cases and the death rates were growing exponentially all over the world, many citizens were still mostly dismissing it as a hoax (Specia 2020). From simple belittling of the potential effects of the COVID-19 infection to the development of a wide range of conspiracy theories, the impact of such infodemic – or rather disinfodemic – went far beyond a potentially unharmful political polarization, with belief in pandemic conspiracies becoming an actual obstacle to minimizing the spread of COVID-19 (Romer and Jamieson 2020). Furthermore, the proliferation of misinformation quickly transformed political attitudes and increased mistrust toward reliable sources (e.g., governmental health services; scientific communicators, etc.) as well as belief in conspiracy theories, concurrently decreasing readiness to engage in preventive actions. It is estimated that false, incorrect, not fact-checked statements and information still waiting for scientific validation have caused approximately 5,800 COVID-19 misinformation-related hospital admissions and 800 COVID-19 misinformation-related deaths in the US just in the very first months of the pandemic (Islam, Sarkar, Khan, Kamal, Hasan, Kabir, Yeasmin, Islam, Chowdhury, Anwar, et al. 2020) and that lives were lost due to the incorrect consumption of toxic ingredients after being allegedly misled to think that they would prevent or cure COVID-19 infections (Barua, Barua, Aktar, Kabir, and Li 2020).

Although serious enough to justify concerns around the true cost of sensitivity toward fake claims, misinformation on COVID-19 is not the only example worth noting. The very first months of 2021 showed us how a set of unsupported claims, if masterly tailored to result as appealing and be thus successfully piloted through social media, can lead to a whole set of real-life social and economic consequences: from more serious ones, such as rioters vandalizing the seat of the U.S. Congress – leading to five deaths and 140 injuries (Hemsley 2021) – to subtler ones, such as the meme-coin Doge spiking up thanks to the consensus gained through celebrity endorsement on social media (Iacobucci and Palumbo 2021). The bitcoin lacked any significant value proposition (Ometoruwa 2021) and was admittedly created as a joke back in 2013, nevertheless, a series of BS tweets from Elon Musk was enough to lead users to ignore experts' warnings about its potential perils and risks and make the coin spike up (Livni, 2021).

From the bullshitter to the bullshitee: BS and its receptivity

Despite the centuries-old philosophical debate around the concept, BS had not been subject to the empirical investigation until 2015 – probably when it started becoming clearer and clearer that, in such a digital post-truth era, the spreading power of BS and its ability to impact the real world had reached unprecedented levels (Ball (2017); Davis (2017)).

Specifically, it was with the development of the Pseudo-Profound Bullshit Receptivity (PPBSR) scale (Pennycook, Cheyne, Barr, Koehler, Fugelsang, et al. 2015) that BS left the pure philosophical discourse and made it into the scientific psychological literature, rightfully gaining its fair share within the wider picture of epistemic, existential and social motives (Douglas, Sutton, and Cichocka 2017) at the roots of sensitivity to misinformation. Obviously, the study of different forms of individuals' sensitivity to a plethora of unsupported claims (and the related social psychological processes that might promote or inhibit them) is not new within the psychological literature (Forgas and Baumeister (2019); Mayo (2019)).

The coinage of the concept of Bullshit Receptivity, however, moved the attention to a very specific point of the credulity-gullibility continuum. We define gullibility as a

failure of social intelligence that leads a person to be easily tricked into poor decision-making, and credulity as a tendency to believe unlikely statements that are unsupported by evidence (Greenspan 2008). In contrast, Bullshit receptivity is a concept that gives strong agency to the bullshitee, that is not only passively absorbing fake claims that are persuasively presented to them – as gullible or credulous individuals are – but they will actively engage in the search for meaning, even where there is none, as in the PPBSR scale. In this sense, the PPBSR scale marked a turning point in the debate around BS research for three main reasons. First, it highlighted and urged the need for an empirical perspective on the matter, alongside the epistemological one. Second, it showed that even when stretched to the very extremes, i.e., in the form of utterances that are purposely crafted to be complete nonsense, BS content will still be able to gain consensus, especially among the most reckless BS believers. Finally, (or rather consequently) the PPBSR scale allowed to shift the research focus from the bullshitter (*BSer*) to the bullshitee (*BStee*).

This final point, often underestimated, is indeed crucial in the much longed-for crusade against BS.

We now live in a world where algorithms do not care about the message they carry, so inaccurate content will be prioritized as long as it can capture our attention (Bergstrom and West 2021), even at the stake of fact-checked, mainstream news[3]. The almost proverbial belief known as the "BS-asymmetry principle", stating that the amount of energy needed to refute bullshit is an order of magnitude bigger than to produce it (Brandolini 2014), has thus never been so true. With BS spreading more easily in such a massively networked social media world, false rumors are rarely taken down timely enough to stop propagation at its roots (Bergstrom and West 2021). So, theoretically, it should be much more easy to tackle BS at its receptivity rather than at its productivity. In the remainder of this paper, we will, thus, provide an overview of the available literature around BS receptivity, with the three-fold objective of summing up what is so far known about this phenomenon, what are the projective future developments of BS receptivity literature(s), and how we can interpret and incorporate them in behaviorally informed public policies.

A literature review of BS Receptivity

Research question development
We followed the structure suggested by Massaro, Dumay, and Guthrie (2016) and define our research questions as follows. As a first step, we aim at gathering insights from existing literature from which we can build upon to develop a critical comment exploring the current and potential advances in the literature. Finally, we focus on a transformative redefinition, addressing the potential future developments, specifically as far as policy making for the combat of disinformation is concerned.

[3]On the Election Day 2016, fake election news stories outperformed real mainstream ones in terms of Facebook Engagement – views, shares, comments – for a piece of content (Silverman 2016)

Insight
Research Question 1   What is the state of the art of research around the concept of BS receptivity?

Sub-questions 1   Which are the main psychometric tools for the assessment of BS receptivity? Which factors and patterns (i.e., individual, psychological, contextual) are so far been found to correlate with BS receptivity? What evidence has so far been provided around the ability of BS receptivity to predict preferences, attitudes and actual behaviors? Are practical implications for tackling BS receptivity being discussed?

Paper Selection Criteria   Empirical work (including Meta-Analyses): providing a clearer definition and operationalization of BS receptivity as an individual characteristic of those particularly receptive of different forms of misinformation (e.g., fake news; conspiracy theories); and/or contributing to the development of a framework of individual characteristics and psychological patterns of people who tend to be overly receptive of BS statements; and/or applying different types of BS receptivity scales as predictors of tendencies, attitudes and actual behaviors; and/or proposing intervention strategies for tackling and/or diminishing the effects of BS receptivity.

Critique
Research Question 2   How has the research around BS and its receptivity developed, changed, and expanded through the years across different domains?

Sub-questions 2   Is the concept of BS and its receptivity being discussed in other applicative fields as well? If so, are there other specific psychometric tools for its assessment? Are practical implications for tackling BS being discussed in such areas?

Paper Selection Criteria   All papers (including conceptual work) introducing or addressing BS receptivity with an applicative approach; and/or discussing the potentially detrimental effects of BS and/or developing specific tools for its assessment and/or proposing intervention strategies for understanding and diminishing the effects of BS receptivity.

Transformative redefinition
Research Question 3   From a behavioral economics perspective, what is the future of BS receptivity research and how can it be used to inform policy makers?

Sub-questions 3   Can BS receptivity inspire any potential research for the development and evaluation of behavior change interventions in the misinformation domain? How can BS research build on prior behavioral research for an evidence-based policy making against misinformation?

Paper Selection Criteria   N/A
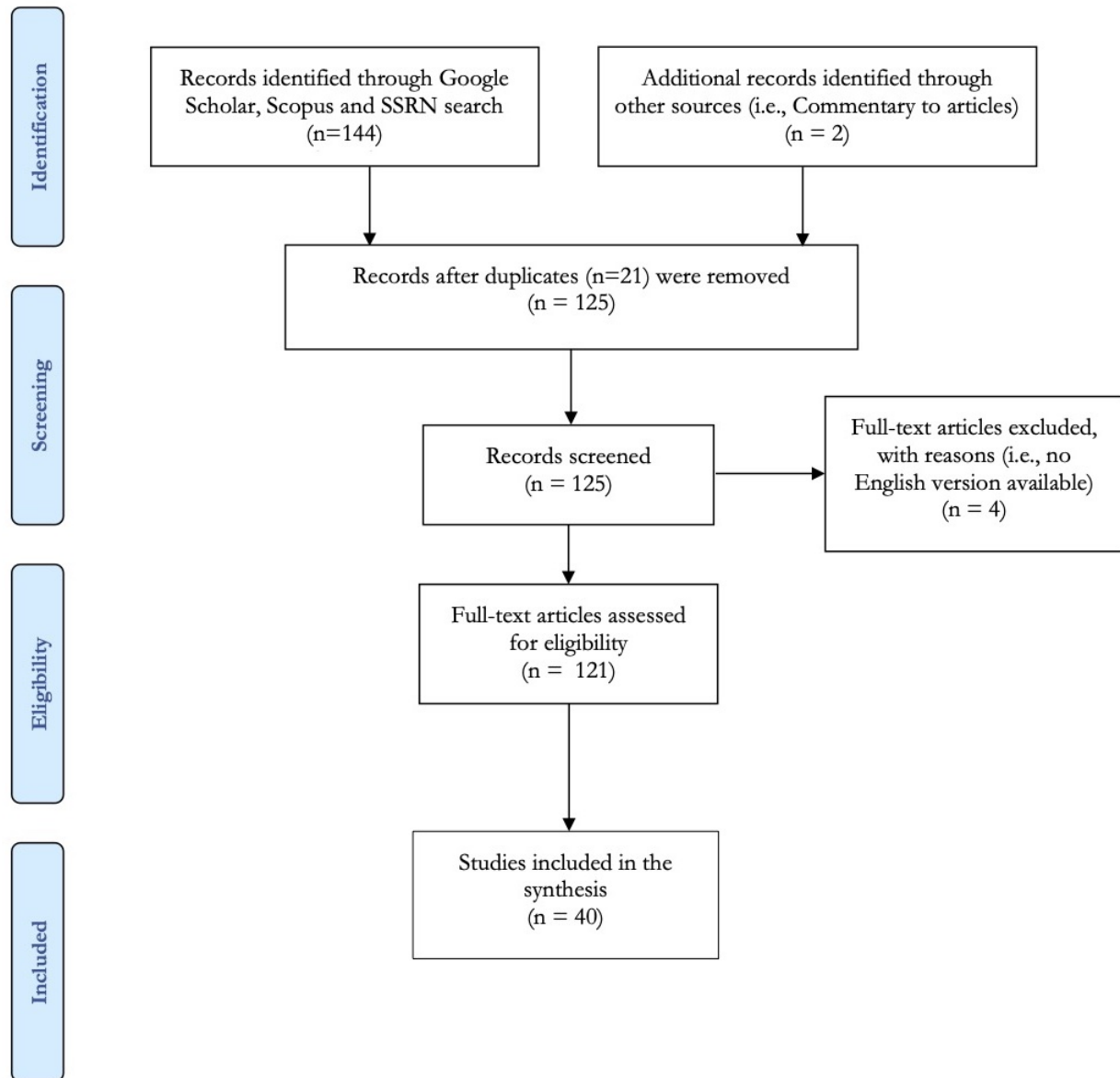
Figure 1. The PRISMA flow diagram (Moher 2009) depicts the flow of information through the different phases of our systematic review

Methods and prisma chart

We report here the criteria adopted for the selection of relevant articles examined in this study that will help us answer the raised research questions. As academic interest around BS receptivity is still emerging and as, little literature exists, key-word searches are paramount (Massaro, Dumay, and Guthrie 2016). We have, thus, built our database by defining a relevant keyword rather than narrowing it in terms of research fields, single journals, or citation classics. All articles mentioning the terms "bullshit receptivity" in the title, abstract, or keywords were collected from Google Scholar, Scopus and SSRN. As Pennycook and colleagues (2015) set out the bedrock of BS receptivity research in November 2015, we have restricted the period of our research between 2015 and June 2021 (included)[4], identifying 144 papers, as reported in the Prisma Chart flow in Figure 1.

Furthermore, to grasp the diachronic development of the construct of BS receptivity, we have followed if and how potential methodological concerns were raised, framed and eventually addressed in the existing literature, through a search for commentaries on the located papers (2 relevant commentary articles were found). After duplicates (21) were removed, two researchers were instructed to independently screen the 125 remaining records. To answer our set of research questions, the final full-text articles assessed for eligibility had to be empirical investigations of BS receptivity, including meta-analysis. Conceptual work was included only if the core aim was either expanding the concept of BS and BS receptivity outside of the psychological domain and/or that of proposing relevant frameworks for the development of counterstrategies. As a complementary search strategy, a series of backward and forward snowballing iterations was performed to make sure that no relevant paper was left out. A further check in the list of excluded papers confirmed that such works were either dealing only tangentially with the concepts of BS and

its receptivity (e.g., only mentioning BS and BSR within the relevant determinants of different constructs of interest) or advancing the broader concept BS from a purely philosophical and/or epistemological perspective, which was outside from our research interest. Also, papers with no full text in English (4) were excluded from this review. A table listing all the final 40 selected papers (and journals in which they were published, SJR, and Journal IF) is provided as Supplemental Material, in the Supplemental Table 1.

Insights In their pioneering work, Pennycook and colleagues (2015) introduced the concept of pseudo-profound BS receptivity, defining it as the individual propensity to ascribe profound meaning in seemingly impressive assertions that are presented as true and meaningful but are actually vacuous. The authors refer to "pseudo-profound bullshit" in order to label all sort of statements that are designed to inspire feelings of profundity without any direct concern for meaning or truth, where profundity is in turn defined as something "of deep meaning; of great and broadly inclusive significance" (Pennycook, Cheyne, Barr, Koehler, Fugelsang, et al. 2015, 6). What the authors are doing with the PPBSR scale is, thus, stretching the no-regard-for-the-truth idea behind the definition of BS to its very extreme – leading to complete disregard for meaning. To develop the scale, the authors derived two sets of ten statements each, aided by two websites[5], that are purposely programmed to construct meaningless new age bullshit (Sterling, Jost, and Pennycook 2016). The process resulted in a list of grammatically correct but semantically nonsensical sentences (e.g. "Wholeness quiets infinite phenomena") and that are thus open to speculation and attempts at meaningful interpretations[6].

Participants were then asked to rate the profoundness of the aforementioned gibberish on a 5-point Likert scale. Across five studies, the authors then validated the two versions of the PPBSR scale – a longer (20-item) and a shorter (10-item) one, both resulting in two very reliable and overall consistent tools for the detection of individual receptivity and sensitivity[7] to pseudo-profound content. Together with the scale validation,

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[4]Nevertheless, we cross-checked the existence of relevant BS receptivity papers before 2015. No records were found on Scopus nor SSRN. Google Scholar reported three results prior to 2015 for the selected keywords. A manual check revealed that such references are either incorrect citations or not-identifiable work:

1. Frederick, S. (2005). Cognitive reflection and decision making. Journal of Economic Perspectives, 19(4), 25-42. The paper reports an appendix reporting a list of citing papers. Google Scholar indexed such papers as cited instead of citing work. The citing papers are all in our database and this further reassures us about the validity of our prior search query.

2. Abelson, H., Anderson, R., and Bellovin, S. M. (1979). Books and Articles. Decision Making. A reverse search reveals that the work in question is Bernal, P. (2018). The Internet, warts and all: free speech, privacy and truth (Vol. 48). Cambridge University Press. The work contains a reference to (Pennycook and Rand, 2020) but is not relevant to the purposes of our review.

3. Campbell, D., and Campbell, A. (2010). Celebration of Quality, 49,19. The search result links directly to the programme of the 2019 "Celebration of Quality" conference held by the Northwest Missouri State University. The programme reports the paper "From the Pseudo Profound to College Campuses: How Bullshit Receptivity Interacts," by Morello et al. No further record of the paper in question is found.

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[5]Wisdom of Chopra (wisdomofchopra.com) and The New-Age Bullshit Generator (sebpearce.com/bullshit/), both last accessed September, 2021

[6]The work builds on a well-established concept in linguistics demonstrating the distinction between syntax and semantics – first raised by Noam Chomsky in his "Models for the description of language". Although no obvious understandable meaning can be derived from some sentences, such as Chomsky's "Colourless green ideas sleep furiously", their grammatical correctness will make them sound as more plausible than sentences that do not follow orthodox syntactical structures, such as "Furiously sleep ideas green colorless" (Chomsky 1956)

[7]Together with the concept of BS receptivity, the authors include the measure of BS sensitivity, which represents the ability to tell apart the pseudo-profound from the actually profound. BS sensitivity is computed by subtracting participants' bullshit-receptivity scores from perceived meaningfulness of genuinely profound sentences (e.g. "A river cuts through rock, not because of its power, but because of its persistence"). The measure allows to control for participants' potential inability to perceive profoundness. Reversely, as to make sure that participants were not overly prone to ascribe profound meaning to all sort of statements, mundane sentences such as "Most people enjoy some sort of music" were also included as control variables.

the authors showed that the individual propensity to ascribe profound meaning to BS statements is associated with an intuitive cognitive style and a tendency to hold supernatural beliefs. As reported in Figure 2, the first work on PPBSR was immediately followed by a rise in research interest around the topic. A core question is now worth raising: who decided what is BS and what is not, if the BS debate has so far been mostly carried out on an academic level? Two of the recorded publications do, indeed, consist in a lively discussion between the developers of the PPBSR scale, Pennycook et al. (2015) and (Dalton 2016), around this core question. In his commentary, the author states that, although randomly generated, such statements can be taken as meaningful by the readers and does indeed find semantical parallels between some PPBS sentences and literary citations of eminent writers (e.g., Kahlil Gibran's "Beauty is eternity gazing at itself in a mirror"). The authors of the scale responded to Dalton's (2016) comments, leveraging the idea that bullshit is defined in terms of how it is produced, and not on how it is interpreted – so that it is not the recipients' understanding of BS that makes something BS, but the a-priori determined lack of concern of the truth of its producer. Moreover, in their commentary to their prior results, Pennycook and colleagues (2016) underline that BS receptive individuals tend to be less analytical, logical and intelligent, so that BS receptivity cannot be apparently ascribed to participants' higher cognitive disposition, as Dalton (2016) observed.

This trend of increasing interest suffered a minor halt in 2017[8] when only one meta-analysis was published (Jost 2017). The authors, building on the prior work of Sterling, Jost, and Pennycook (2016), who showed that individuals who endorsed neoliberal, free-market ideology were more susceptible to pseudo-profound BS, incorporated BS in the bigger picture of the epistemic motives at the roots of ideological asymmetries. Their findings suggest that the endorsement of a free-market ideology is associated with lower levels of cognitive style and cognitive ability, namely, lower verbal intelligence and a failure to correct heuristic processing. The latter are, in turn, considered as predictors of higher levels of bullshit receptivity (Jost 2017). After this apparent drop in 2017, the interest toward BS receptivity kept rising again, peaking in the 31 peer-reviewed works in 2020 reported in our sample, with some of the most recent work dealing with the development of additional psychometric tools for the appropriate assessment of BS in various realms, from domain-specific BS receptivity scales - such as the scientific BSR one (Evans, Sleegers, and Mlakar 2020), to the general BS receptivity scale (Čavojová, Brezina, and Jurkovič 2020).

Further validation work (Littrell, Risko, and Fugelsang 2021a) proposes the construction of a new, reliable scale measuring the frequency with which individuals engage in

different types of bullshitting (persuasive vs. evasive) in everyday situations. The Bullshitting Frequency Scale was found to reliably measure constructs that are (a) distinct from lying and (b) significantly related to performance on overclaiming and social decision tasks *(ibid.)*.

A further work by Littrell, Risko and Fugelsang (2021b) revealed that the frequency of persuasive bullshitting (i.e., bullshitting intended to impress or persuade others) positively predicts susceptibility to various types of misleading information and that this association is robust to individual differences in cognitive ability and analytic cognitive style. So, the concept of BS has been slightly shifting focus on the BSer and its own sensitivity to BS, to the extent that it is now acceptable to consider the idea that not all BS is intentional – as BSers themselves might fail to properly disambiguate what is BS and what is not. Moreover, it is worth underlining that Littrell, Risko and Fugelsang (2021a) (2021b) addressed another issue that was left rather unanswered since the development of the first PPBSR scale. Indeed, participants were asked to rate not only how profound they thought each BS statement was, but also how profound they sounded, thus being able to find evidence that distinguishing superficial profoundness is a different skill than recognizing inherent profoundness. Furthermore, they showed that persuasive BSers are generally unable to properly make such distinction, thus showing that producing BS does not necessarily inoculate a person from falling for it. Contrarily, Turpin and colleagues (2021), recently reported that those perceived as more intelligent on the basis of the bullshit they produced were less likely to judge pseudo-profound bullshit as profound. In light of these early, contrasting results on the intricate relation between BS productivity and BS receptivity, as also underlined by Čavojová and Brezina (2020), it is likely that self-reported measures, despite their satisfactory properties from a psychometric perspective, could be too much of an approximation, as they might not only suffer from social desirability bias and depend on participants' willingness to disclose their own bulshitting activity, but also strongly depend on their metacognitive ability *(ibid.)*.

As expected, further studies published in 2021 focused on the ongoing pandemic. Salvi and colleagues (2021) investigated the influence of fear of COVID-19 on social and cognitive factors including belief in fake news, bullshit receptivity, overclaiming, and problem solving, within two of the countries that have been severely hit by COVID-19: Italy and the US. Their results submit that fear positively correlates with PPBSR, suggesting that the pandemic might have contributed to creating a situation where people were pushed toward pseudo-profound existential beliefs. On a similar vein, Pisl et al. (2021) report that COVID-related conspiracy beliefs were influenced – among other relevant predictors such as health literacy, experience with dissociation, and cognitive reflection – by BS receptivity, except for the belief that coronavirus is a hoax (e.g. "The virus is intentionally presented as dangerous in order to mislead the public" (Imhoff and Lamberty 2020).

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[8]This could be at least partly explained by the fact that Pennycook et al. (2015) were awarded an Ig Nobel prize. Ig Nobel awarded research tends to witness initial veiled criticisms but is later shown to lead to important breakthroughs (Matthews 2009)
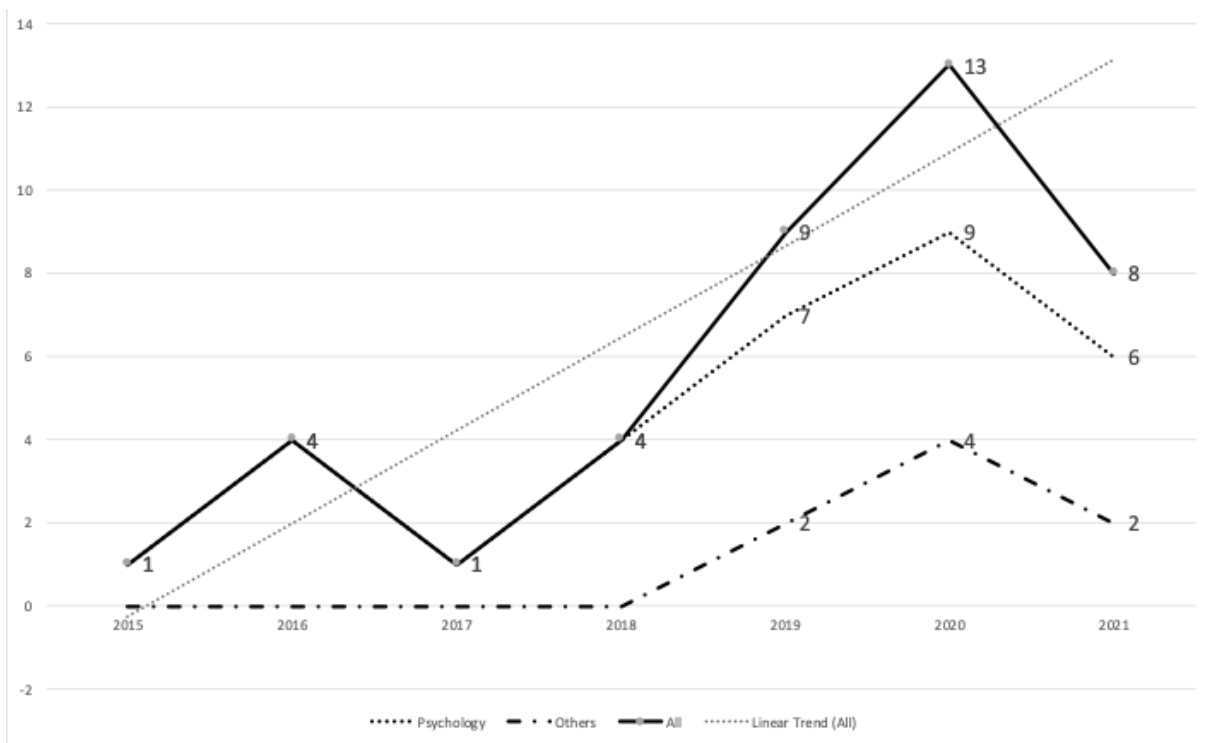
Figure 2. The graph reports the trend of published peer-reviewed work on BS receptivity in the 2015-2021 period.* The dotted line shows the trend in psychology (i.e., Health, Cognitive, Social, and Political psychology). The dash-dot line shows the trend in the other fields (i.e., Business Theory, Management, Organizational Theory, Communication). The latter has no records until 2019. The continuous line is a sum of all fields and the dotted grey line reports the linear trend forecast based on the total number of publications/year based on the 2015-2020 period.
(*) Please note that 2021 includes only peer-reviewed work available when data collection was performed, thus up to June 30, 2021. The number of reported publications should not be interpreted as a downward trend. Indeed, the first half of 2021 records 8 published papers out of the13 publications estimated by the simple trend-line model for the whole year.

To sum up, most of evidence collected so far reports that the tendency to ascribe profound meaning to vacuous content, captured by various BS receptivity scales, has been linked to a plethora of other tendencies such as conspiracy ideation (Hart and Graether 2018), epistemically suspect and religious beliefs (Čavojová, Secară, Jurkovič, and Šrol 2019), credence in the paranormal and belief in the efficacy of complementary and alternative medicine (Pennycook, Cheyne, Barr, Koehler, Fugelsang, et al. 2015), daily spiritual experiences, ontological confusion, and reduced capacity of analytical thinking (Čavojová, Secară, Jurkovič, and Šrol 2019); social conservatism (particularly with moral intuitions pertaining to in-group loyalty) respect for authority and purity (Nilsson, Erlandsson, and Västfjäll 2019), as well as a tendency toward political conservatism (Pfattheicher and Schindler 2016), and economics, along with a belief in the free market and faith in intuition (Evans, Sleegers, and Mlakar 2020).

Critique Our literature overview thus showed that, while much has been said in terms of BSR and its relation to a wide range of unconventional beliefs, the ability of BS receptivity to predict behavioral intentions or actual behavioral outcomes has not been assessed, despite the clear real-life implication of such information, if not in very few studies. Erlandsson and colleagues (2018) reported that people with high bullshit-receptivity are overall less likely to engage in prosocial behavior. BS receptivity was found to be one of the psychological predictors of the use of complementary and alternative medicines (Ackerman and Chopik 2020), fueling concerns about the potential real-life consequences that misinformation could have had on citizens' health-related choices during the COVID-19 pandemic. Indeed, Fuhrer and Cova (2020) report that BS receptivity was associated with trust in Didier Raoult's, hydroxychloroquine-based treatment against COVID-19 – although no clear conclusions were drawn regarding the impact of such trust in Raoult on behavioral intentions (e.g., intention to undergo the hydroxychloroquine-based treatment). Another relevant aspect for our critique is that only a few papers tried to focus on the factors influencing and regulating both BS receptivity, bullshitting, and bullshit detection (Brown, Keefer, and McGrew (2019); Petrocelli, Watson, and Hirt (2020)) and the discussion on the potential opportunities that such findings open for the development of empirically

driven counter strategies remains limited. In this vein, we support the many calls for a further assessment of appropriate education or training techniques, such as those proposed by Pennycook and Rand (2020), aimed at shifting people from reflexive open-mindedness (an intuitive mindset that leads individuals to be overly accepting of information without very much processing and/or critical thinking involved) into reflective open-mindedness, a more active and critical mindset that should thus tackle BS receptivity by encouraging critical analysis and reflection (Baron, Scott, Fincher, and Metz 2015). Furthermore, we report Brown, Keefer and McGrew (2019) concerns about the need to inform individuals about the biases that lead to BS and fake news receptivity, through the development of tailored critical thinking tasks that can heighten one's ability to recognize such information.

As reported in the graph reported in Figure 2, we record that other research fields developed an interest in the topic of BS only starting from 2019. Specifically, authors urged an assessment of BS in Organizational and Management Studies (i.a., Christensen, Kärreman, and Rasche (2019); Spicer (2020); Sułkowski (2019)) where a clear explanation of the concept of "bullshit management" is urged and where even bullshit seems to have different social functions on particular types of managerial practices that play a significant role in commanding and strategizing. The same occurs for Corporate Social Responsibility since Herold, Dietrich, and Breitbarth (Herold, Dietrich, and Breitbarth 2020) report that social responsibility in the banking sector and the associated internal and external communication mostly consist of BS and Marketing (Di Domenico and Visentin 2020) where research investigating how problematic information might seriously affect brand attitude and reputation, source credibility and news credibility, and more generally consumer behavior is welcomed by the authors.

Overall, the aforementioned work underlines the need to fight the detrimental effects that misleading communication and indifference toward truth can have in the business environment, both toward internal and external stakeholders. It is only within the Organizational Behavior (OB) domain, however, that, together with a tailored scale that aims at gauging BS perception in a workplace environment (Ferreira, Hannah, McCarthy, Pitt, and Lord Ferguson 2020), scholars also provided a punctual framework to comprehend, recognize, act against and prevent it (McCarthy, Hannah, Pitt, and McCarthy 2020b), with operative suggestions such as "encourage critical thinking" and "prohibit excessive jargon and statistical trickery" *(ibid.)*.

Transformative redefinition: A twofold path for Behaviorally Informed Public Policy against BS Our review of the literature around BS receptivity thus raises a gap. On the one hand, empirical research is advancing in a fragmented patchwork of findings and with little concern for applicative intervention. On the other, more intervention-oriented designs of behavioral change have so far proposed overly generalized frameworks, that – although extremely valuable and theoret-

ically irreproachable – are not backed up by the appropriate empirical evidence to justify a large-scale adoption.

As Amir et al. (2005) underlined in their call for a more fruitful cooperation among psychology, behavioral economics, and public policy, part of the distinction between a theoretical and an applied science lies in the awareness that the answer to many questions regarding how people behave is: "it depends". Those are, indeed, the areas where we believe this stream of research could benefit most from insights gained from decades of behavioral economics findings and behavioral economist expertise, both in taking such findings out of textbooks and applying into practice (Kanbur and Pirttilä 2014) and also in avoiding the faults of one-size-fits-all approaches, which efficiency has already been widely debunked in the behavioral change domain (Burgermaster, Contento, Koch, and Mamykina 2018).

First of all, as previously underlined, the BS Asymmetry principle nudges us toward a recipient-based approach for the fight against BS, as the online spread of BS runs at such an uncontrolled pace that trying to debunk it from its source could result in a tilting at windmills. While moderators and fact-checkers play a key role in signaling potentially misleading online content, policymakers need to start working on a user level to equip citizens against BS in order to build long-lasting BS spotting abilities that might tackle its spread and viral potential. A source-related interesting perspective was recently adopted by Ilić and Damnjanović (Ilić and Damnjanović), who addressed the role of source credibility in PPBS receptivity and reported that higher (lower) author credibility leads to an increase (decrease) in BS profoundness evaluations, with cognitive reflection playing a key role in participants ability to disambiguate between PPBS and conventionally profound statements[9].

For such purposes, on a long-term perspective, we believe that informative interventions of domain-expertise digital literacy may represent a key to develop the skills required to recognize BS and identify Bullshitting sources, at least in the web environment where such literacy is a significant remedy to fake news detection, to the extent that it now represents one of the seven pillars in the European Commission's Digital Agenda for Europe (European Commission 2021). Whereas education regarding fake news can be generally addressed by media-savvy techniques such as source or fact checking, the BS domain might posit harder challenges: due to the very sophisticated rhetoric strategies and statistical trickery at its roots, and the consequent blurriness between truth and lies, BS might be harder to disprove, even by experiences debunkers. As posited by Bergstrom and West (2021) and McCarthy and collagues (2020b), educating against BS should thus be aimed at covering and encouraging analytical and statistical thought, so as to tackle BSers' techniques that tap into our statistical

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[9]However, recent findings from Petrocelli (2021) suggest that BS receptivity and sensitivity are dependent on the alignment of the source's bullshit content with the direction and extremity of one's political attitudes – so it might be harder to debunk politically oriented BS when aligned with one's political attitudes.

fallacies. In this vein, behavioral economics' undoubtable expertise in developing appropriate statistical literacy techniques (e.g., tools for effective Bayesian Reasoning (Sedlmeier and Gigerenzer 2001) could thus properly inform governmental action to the public.

As posited in work investigating the cross-sectional role of BS in both the scientific and the policy-making domains, "bullshit plays upon the inherent intellectual limitations that keep us from being fully informed and up-to-date on all the important issues of our time" (Douglas, 2006, p. 219). Some possible successful actions policymakers could thus take on a long-term perspective might include improving both people's ability to inhibit the first thought that comes into their minds and the cognitive capacity to think more about the content they encounter when browsing for information (for a systematic review of Critical thinking as a form of information literacy against online fake content, see Machete and Turpin, 2020). From our literature synthesis we know that leveraging critical thinking can prevent bullshit production and proliferation, however, because not all people are willing or able to spend more time contemplating the content they choose to share on social media, behavioral interventions should focus on cueing analytic thinking and highlighting the consequences of spreading untruthful and often harmful information (Čavojová, Secară, Jurkovič, and Šrol 2019). An example to leverage critical thinking and reduce bullshit and its unwanted effects could be that of creating awareness campaigns, as well as introducing information literacy in academic education (Machete and Turpin, 2020), as to highlight how crucial it is to identify and rely on genuine, trustworthy sources of information and thus participate safely and responsibly in a world filled with information that runs on social media and digital technologies, Council of Europe (2018).

Our second line of intervention adopts a short-term perspective, and much more of a libertarian-paternalistic lens (Sunstein and Thaler 2003). We call for evidence about softer approaches such as nudging techniques (Andı and Akesson 2020), inoculation strategies (Iacobucci, De Cicco, Michetti, Palumbo, and Pagliaro (2021); Maertens, Anseel, and van der Linden (2020)), strategies for increasing accuracy salience (Pennycook, Epstein, Mosleh, Arechar, Eckles, and Rand 2021) and for stimulating analytical processes (Pennycook, Cheyne, Barr, Koehler, Fugelsang, et al. 2015), in order to reduce individual sensitivity and reception of BS content by leveraging well-established techniques from the behavioral literature-as repeated exposure to cognitive reflection test (Meyer, Zhou, and Shane 2018). Future research should verify whether such findings, which have been so far successfully employed in a plethora of inattention-driven misinformation contexts (Pennycook and Rand (2020); Pennycook et al.(2020), Lazer et al. (2018)), might apply in the specific BS context as well.

As to clarify what we mean by the faultiness of one-fits-all approaches in this context, let us take recent findings regarding inoculation against fake content. Research shows that, as

in the biomedical analogy from which it is named after, people exposed to weakened doses of persuasive argumentations will be less likely to be persuaded in the future, with such effects being effective in the long term. Recent work by Iacobucci et al. (2021) confirms that simple information priming about the definition of synthetic media such as deepfakes was enough to inoculate social media users against their potentially misleading power, to such an extent that they were more able to recognize it and showed not only more negative attitudes toward the fake content, but also reduced behavioral intents to share it. Such inoculative effect, however, was not equally effective in presence of individuals particularly receptive to BS statements.

Further research should, thus, specifically be aimed at verifying whether such softer strategies for the fight against BS should go further into a broader priming on the concept of misinformation in general, for example, by presenting users with refutational-same/refutational different messages (*ibid.*) purposely tailored at priming them with much more specific characteristics of BS, e.g., it contains excessive jargon, acronyms and statistical trickeries; is abstract and lacks of sources and logic (McCarthy, Hannah, Pitt, and McCarthy 2020b).

We believe the so far presented approaches to have two main non-negligible advantages: first, the proposed scalable lines of intervention can be easily implemented on social media (e.g., through pre-roll informative and educational videos or nudges for increasing analytical thought, as recently adopted by Twitter's "read before you retweet" warning messages (C 2020). Second, as BS receptivity is being increasingly recorded as an accurate predictor of sensitivity to a profusion of outlandish and potentially harmful beliefs (e.g. Čavojová et al. (2019); Pennycook and Rand (2020); Iacobucci et al. (2021); Pisl et al. (2021)), reducing citizens' sensitivity to this specific communication might have a trickle-down impact on misinformation as a whole (and across different domains where bullshitting occurs), thus representing a more feasible strategy also in terms of cost-benefit assessment of the economic efficiency of the proposed public policies.

Conclusions and limitations

The role of behavioral scientists should be that of "ensuring that government decisions are responsive not to temporary fears but to well-informed public judgments" (Sunstein 2014, 149). In this vein, our paper confirms the rising interest toward the topic of BS and its receptivity, with growing literature on the topic mirroring the governmental concern for a proper response to disinformation (Matasick, Alfonsi, and Bellantoni 2020), making it an overarching pressing priority for both academics and policies practitioners.

We have summed up how the literature around BS is currently allowing us to dig deeper into the mind of the most stubborn fake believers. This shows that, whenever we cannot tackle BS on its source, we can still tackle the threat that it poses (Moberger 2020) by understanding who falls for it,

why and how we – as scientists and policymakers – can contribute to the fight against misinformation warfare through a twofold path. First, thanks to an educational framework aimed at equipping citizens against different forms of subtle persuasion, enhancing a lifelong, long-lasting digital and statistical literacy, as to keep pace with the constantly evolving tools of misinformation and misrepresentation of facts and data. Second, a set of softer strategy that includes more scalable accuracy-nudges (Pennycook, Epstein, Mosleh, Arechar, Eckles, and Rand 2021) or digital inoculation strategies (e.g. European Commission, 2021), that may hopefully also lead to long-term effects.

We hope to have properly underlined that research on BS and BSR is no longer a one-off intellectual provocation (Sułkowski et al. 2019), and that both methodological weaknesses around their measurement and the confusion around their definition are currently being addressed and resolved by a growing body of literature, slowly branching throughout different fields.

Although giving an insightful look into the literature around BS receptivity, we would like to acknowledge some limitations of our work. The first one is linked to the year of our data collection. The ongoing pandemic of the coronavirus disease in 2019 has led to the development of many studies incorporating BS receptivity among its variables of interest – as confirmed by a search within non-peer-reviewed pre-prints sharing platforms (i.e., PsyArXiv). However, most of the papers dealing with BS receptivity and misinformation related to COVID still represent grey literature at the time of writing, and only 3 COVID-19 related papers have thus been peer-reviewed and included in our BS-receptivity overview. We hope that the need for timely action against misinformation on health-related issues – most likely accelerated by the pandemics – will be reflected in more applicative work on the topic in the immediate future, specifically in relation to the efficiency of specific forms of intervention (both educational, as informative and scalable, such as nudge-based ones) that will reduce domain specific gullibility. Most of the work should thus focus on COVID and scientific BS, specifically by testing efficient strategies aimed at enhancing intentions to engage in COVID-19 risk-reducing and risk-preventive behaviors (e.g., mask-wearing, social distancing, vaccinating) that suffer, among others, from causation and availability biases.

Regarding the hitherto analyzed literature, we underline that our keyword search included work on BS production when accompanied by work on BS reception. This resulted in the inclusion of one investigating the antecedents and self-regulatory aspects of bullshitting and bullshitting detection (Petrocelli, Watson, and Hirt 2020), but let us disregard works such as Petrocelli's "Antecedents of Bullshitting" (2018). Research on the reception of BS currently outweighs that of BS production, so we believe that a literature review with a sole focus on BS production to be premature. We cannot but share Brandolini's (2014) concerns regarding the belief that the amount of energy needed to refute bullshit is an order

of magnitude bigger than to produce it, so that a focus on the sources of BS is highly desirable, indeed necessary. Arguably, however, understanding only drivers and tackling BS receptivity alone will not solve the problem of the spread of misinformation nor people's acceptance of fake narratives. We recognize such limitations, hoping for a future, more thorough understanding of the *BSer* as much as that of the *BStee*.

Third, epistemically suspect beliefs are strongly entangled with cultural-specific elements. Despite controls for spirituality or religiosity being included in most of the collected literature, it is, thus, worth noting that most of the data collection is rather skewed toward participants from western cultures. Although religious content is never directly labeled as BS, correlations between PPBS are assessed (and found) and it is undeniable that most of the PPBS scale taps into New Age Spirituality and its vocabulary (Čavojová, Brezina, and Jurkovič 2020). It cannot, thus, be completely excluded that those who reported higher profundity in the PPBS statements were simply more Eastern in their cognitive disposition (Dalton 2016). With this regard, we hope that the literature will keep developing into two of the seemingly most viable options: validation of the BS scales across different languages and from a cross-cultural perspective (Čavojová, Brezina, and Jurkovič 2020) and a shift of focus of BS into non-transcendental domains (i.a., Čavojová et al. (2020); Ferreira et al. (2020)).

Finally, we believe that a debate around a concept that is so intertwined with linguistic science and rhetoric will suffer from a paper criteria selection excluding the wider discourse around the linguistic aspects of BS. Although we provide some insight from linguistics, dwelling upon the evolution of the concept of BS from a linguistic perspective was far from the purpose of this study. We believe that more conceptual review papers on this aspect of BS will help shed light on a phenomenon so deeply rooted in the logical structure of linguistic theory (Chomsky 2002, 15).

Acknowledgments

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Supplemental Material

Supplemental Table 1: List of selected paper and journals in which they were published, with SJR, and Journal IF.

N	Author(s)	Title	Year	Journal	SJ	IF
1	Pennycook, G., Cheyne, J. A., Barr, N., Koehler, D. J., and Fugelsang, J. A.	On the reception and detection of pseudo-profound bullshit	2015	Judgment and Decision Making	Q1	2.53
2	Dalton, C.	Bullshit for you; transcendence for me. A commentary on" On the reception and detection of pseudo-profound bullshit"	2016	Judgment and Decision Making	Q1	2.53
3	Pennycook, G., Cheyne, J. A., Barr, N., Koehler, D. J., and Fugelsang, J. A.	It's still bullshit: Reply to Dalton	2016	Judgment and Decision Making	Q1	2.53
4	Pfattheicher, S., and Schindler, S.	Misperceiving bullshit as profound is associated with favorable views of Cruz, Rubio, Trump and conservatism	2016	PloS one	Q1	2.74
5	Sterling, J., Jost, J. T., and Pennycook, G.	Are neoliberals more susceptible to bullshit?	2016	Judgment and Decision Making	Q1	2.53
6	Jost, J. T.	Ideological asymmetries and the essence of political psychology	2017	Political Psychology	Q1	3.27
7	Bialek, M., and Pennycook, G,	The cognitive reflection test is robust to multiple exposures	2018	Behavior Research Methods	Q1	4.43
8	Erlandsson, A., Nilsson, A., Tinghög, G., and Västfjäll, D.	Bullshit-sensitivity predicts prosocial behavior	2018	PloS one	Q1	2.74
9	Hart, J., and Graether, M.	Something's going on here	2018	Journal of Individual Differences	Q2	0.94
10	Mækelæ, M. J., Moritz, S., and Pfuhl, G.	Are psychotic experiences related to poorer reflective reasoning?	2018	Frontiers in Psychology	Q1	2.07
11	Bainbridge, T. F., Quinlan, J. A., Mar, R. A., and Smillie, L. D.	Openness/intellect and susceptibility to Pseudo-Profound bullshit: A replication and extension	2019	European Journal of Personality	Q1	3.49
12	Brown, M., Keefer, L. A., and McGrew, S. J.	Situational Factors Influencing Receptivity to Bullshit	2019	Social Psychological Bulletin	N.D	N.D

N	Author(s)	Title	Year	Journal	SJ	IF
13	Čavojová, V., Secară, E. C., Jurkovič, M., and Šrol, J.	Reception and willingness to share pseudo-profound bullshit and their relation to other epistemically suspect beliefs and cognitive ability in Slovakia and Romania	2019	Applied Cognitive Psychology	Q2	1.59
14	Nilsson, A., Erlandsson, A., and Västfjäll, D.	The complex relation between receptivity to pseudo-profound bullshit and political ideology	2019	Personality and Social Psychology Bulletin	Q1	2.97
15	Turpin, M.H., Walker, A.C., Kara-Yakoubian, M., Gabert, N.N., Fugelsang, J.A., and Stolz, J.A.	Bullshit makes the art grow profounder	2019	Judgment and Decision Making	Q1	2.53
16	Walker, A., Turpin, M. H., Stolz, J. A., Fugelsang, J., and Koehler, D.	Finding meaning in the clouds: Illusory pattern perception predicts receptivity to pseudo-profound bullshit	2019	Judgment and Decision Making	Q1	2.53
17	Christensen, L. T., Kärreman, D., and Rasche, A.	Bullshit and organization studies	2019	Organizational Studies	Q1	3.94
18	Sułkowski, Ł.	On bullshit management–the critical management studies perspective	2019	Economics and Sociology	Q2	9.46
19	Ackerman, L. S., and Chopik, W. J	Individual differences in personality predict the use and perceived effectiveness of essential oils	2019	PloS one	Q1	2.74
20	Blondé, J., Desrichard, O., and Kaiser, B.	Psychological predictors of the use of complementary and alternative medicines during pregnancy within a sample of Swiss women	2020	Health Psychology Research	N.D	N.D
21	Čavojová, V., Brezina, I., and Jurkovič, M.	Expanding the bullshit research out of pseudo-transcendental domain	2020	Current Psychology	Q2	1.91
22	Gligorić, V., and Vilotijević, A.	"Who said it?" How contextual information influences perceived profundity of meaningful quotes and pseudo-profound bullshit	2020	Applied Cognitive Psychology	Q2	1.59
23	Evans, A., Sleegers, W., and Mlakar, Ž.	Individual differences in receptivity to scientific bullshit	2020	Judgment and Decision Making	Q1	2.53
24	Pennycook, G., and Rand, D. G.	Who falls for fake news? The roles of bullshit receptivity, overclaiming, familiarity, and analytic thinking	2020	Journal of Personality	Q1	3.67

N	Author(s)	Title	Year	Journal	SJ	IF
25	Petrocelli, J. V., Watson, H. F., and Hirt, E. R.	Self-regulatory aspects of bullshitting and bullshit detection	2020	Social Psychology	Q1	2.77
26	Ferreira, C., Hannah, D., McCarthy, I., Pitt, L., and Lord Ferguson	This Place Is Full of It: Towards an Organizational Bullshit Perception Scale	2020	Psychological Reports	Q2	1.53
27	McCarthy, I.P., Hannah, D., Pitt, L.F., and McCarthy, J.M.	Confronting indifference toward truth: Dealing with workplace bullshit	2020	Business Horizons	Q1	4.49
28	Herold, D. M., Dietrich, T., and Breitbarth, T	Banking on bullshit: indifferences towards truth in corporate social responsibility	2020	International Journal of Bank Marketing	Q2	2.81
29	Spicer, A.	Playing the Bullshit Game: How Empty and Misleading Communication Takes Over Organizations	2020	Organization Theory	N.D	N.D
30	Di Domenico, G., and Visentin, M.	Fake news or true lies? Reflections about problematic contents in marketing	2020	International Journal of Market Research	Q2	3.35
31	Fuhrer, J., and Cova, F.	Quick and dirty": Intuitive cognitive style predicts trust in Didier Raoult and his hydroxychloroquine-based treatment against COVID-19	2020	Judgment and Decision Making	Q1	2.53
32	Littrell, S., Risko, E. F., and Fugelsang, J. A.	The bullshitting frequency scale: Development and psychometric properties	2020	British Journal of Social Psychology	Q1	2.74
33	Salvi, C., Iannello, P., McClay, M., Rago, S., Dunsmoor, J. E., and Antonietti, A.	Going viral: how fear, socio-cognitive polarization and problem-solving influence fake news detection and proliferation during COVID-19 pandemic	2021	Frontiers in Communication	N.D	N.D
34	Littrell, S., Risko, E.F., Fugelsang, J.A.	'You can't bullshit a bullshitter' (or can you?): Bullshitting frequency predicts receptivity to various types of misleading information.	2021	British Journal of Social Psychology	Q1	2.74
35	Iacobucci, S., De Cicco, R., Michetti, F., Palumbo, R and Pagliaro S.	Deepfakes Unmasked: The Effects of Information Priming and Bullshit Receptivity on Deepfake Recognition and Sharing Intention	2021	Cyberpsychology, Behavior, and Social Networking	Q1	2.35

N	Author(s)	Title	Year	Journal	SJ	IF
36	Ilić, S., and Damnjanović, K.	The Effect of Source Credibility on Bullshit Receptivity	2021	Applied Cognitive Psychology	Q2	1.59
37	Pisl, V., Volavka, J., Chvojkova, E., Cechova, K., Kavalirova, G., and Vevera, J	Dissociation, Cognitive Reflection and Health Literacy Have a Modest Effect on Belief in Conspiracy Theories about COVID-19	2021	International Journal of Environmental Research and Public Health	Q2	2.85
38	Turpin, M. H., Kara-Yakoubian, M., Walker, A. C., Walker, H. E., Fugelsang, J. A., and Stolz, J. A.	Bullshit Ability as an Honest Signal of Intelligence	2021	Evolutionary Psychology	Q1	1.98
39	Čavojová, V., and Brezina, I	Everybody Bullshits Sometimes: Relationships of Bullshitting Frequency, Overconfidence and Myside Bias in the Topic of Migration	2021	Studia Psychologica	Q3	0.54
40	Petrocelli, J.V.	Politically oriented bullshit detection: Attitudinally conditional bullshit receptivity and bullshit sensitivity	2021	Group Processes and Intergroup Relations	Q1	2.64