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Abstract

Bullshit, besides being a pejorative colloquial term, is a research topic that attracted attention from several disciplinary domains including linguistics, philosophy and most recently psychology. A shift in the bullshit-centered approach, which revolved around the study of what can be reliably classified as bullshit, the reasons for producing it and the manner in which it harms society, has recently occurred, the new direction focusing not the source of bullshit but on the characteristics of its receivers, the individual differences that predispose towards bullshit vulnerability. Regardless of the study domain, bullshit was considered harmful to communication and an often-overlooked hazard that threatens society. In the era of information, and therefore also the era of misinformation, bullshit is thriving and the threat has become all too serious. However, tackling the sources is nearly impossible and much too costly, so any worth-while interventions need to address the public and for that two aspects are necessary. First, it is essential to understand the mechanisms of which bullshit vulnerability functions, so that the intervention is efficient. Secondly, a reliable method of assessing vulnerability is needed, facilitating the assessment of the intervention's efficacy.

The first study investigated the effect of investing cognitive effort and of indirect cueing for the need to use analytic thinking on response bias and conflict detection, the presupposed mechanisms of bullshit vulnerability. It also assessed the role of cognitive style as a moderator of the effect. One hundred thirty-two participants completed the measures, the results indicating that cognitive effort significantly decreased bullshit vulnerability by reducing response bias. An opposed effect was observed in the case of indirect cueing, bullshit vulnerability being augmented. Further analysis revealed that this was observed only in the case of participants that presented an intuitive cognitive style. The data was not sufficient to confirm a moderation effect but indicated that cognitive style predicts bullshit vulnerability independently of cognitive effort or expectations.

The second study analysed the psychometric proprieties of a novel measure of vulnerability, targeting health-related bullshit. Seventy-one participants completed four assessments in a repeated measures design, the results indicating good internal consistency and promising evidence for establishing construct validity. Further research directions are discussed, focusing on the need to design a version of the scale that can assess vulnerability in a single session.

Kurzfassung

„Bullshit“ (Schwachsinn, geistloses Gerede, Nonsens) ist abgesehen von seiner abwertenden umgangssprachlichen Bedeutung ein Forschungsthema, welches die Aufmerksamkeit zahlreicher wissenschaftlicher Disziplinen einschließlich der Linguistik, der Philosophie und neuestens auch der Psychologie auf sich zieht. Vor kurzem erfolgte ein Wechsel in der Annäherung zur Auseinandersetzung mit „Bullshit“. Bisher konzentrierten sich die Forschungen auf die Frage, was zulässiger Weise als „Bullshit“ klassifiziert werden kann, die Gründe für derartige Äußerungen und die Art und Weise, wie sie die Gesellschaft beeinträchtigen. Nunmehr wird nicht mehr auf die Herkunft von „Bullshit“ fokussiert, sondern auf die Charakteristika ihrer Empfänger, auf die individuellen Unterschiede, die jene hierfür anfällig und beeinflussbar machen. Unabhängig von der wissenschaftlichen Ausrichtung wurde „Bullshit“ als Beeinträchtigung der Kommunikation und als oft übersehene, gefährvolle Bedrohung einer Gesellschaft beurteilt. „Bullshit“ blüht auf dem Gebiet von Information und daher auch Desinformation und ist zu einer ernstesten Bedrohung geworden. Es ist nahezu unmöglich, die Verursacher zu bekämpfen und wäre auch viel zu aufwendig, sodass jede sinnvolle Einflussnahme an die Öffentlichkeit gerichtet sein muss. Dafür sind zwei Voraussetzungen notwendig: Erstens ist es wesentlich, den Mechanismus der Beeinträchtigung durch „Bullshit“ zu verstehen, damit die Gegenmaßnahme effizient gestaltbar ist; zweitens ist eine verlässliche Methode zur Beurteilung der Beeinträchtigung als solcher erforderlich, um die Beurteilung der Wirksamkeit der Gegenmaßnahmen zu ermöglichen.

Die erste Untersuchung beschäftigte sich mit der Auswirkung von Investitionen in geistig-rationale Anstrengung (cognitive effort) und von indirektem Hinweisen (indirect cueing), zum Zwecke der Analysen unmittelbarer Antworten (response bias) und dem Erkennen inhärenter Diskrepanzen (conflict detection), den vermuteten Mechanismen der Beeinträchtigung durch „Bullshit“. Weiter beurteilt sie auch die Rolle der kognitiven Denkweise als Moderatorvariable der untersuchten Auswirkung. 132 Teilnehmer haben die Tests abgeschlossen, die Ergebnisse legen nahe, dass geistig-rationale Anstrengung die Beeinträchtigung durch „Bullshit“ dadurch signifikant reduziert, dass sozialschichttypische Antworttendenzen reduziert werden. Der gegenteilige Effekt wurde beim indirekten Anweisen festgestellt, hier wird die Beeinträchtigung durch „Bullshit“ vermehrt. Weitergehende Analysen erhellten, dass dieses Phänomen nur bei jenen Teilnehmern beobachtet wurde, die einen intuitiven Denkstil repräsentierten. Die Datenlage war nicht ausreichend, um einen Interaktionseffekt zu bestätigen, jedoch deutete sie darauf hin, dass geistig-rationaler Denkstil „Bullshit“-Beeinträchtigung unabhängig von kognitiver Anstrengung oder Erwartung prognostiziert.

Die zweite Untersuchung analysierte die psychometrische Korrektheit einer neueren Messung der Beeinträchtigung, die sich auf die Gesundheit bezogenen „Bullshit“ abzielte. 71 Teilnehmer führten vier Beurteilungen in einer wiederholten Testreihe durch, deren Resultate gute inhaltliche Konsistenz und vielversprechende Evidenz zur Stichhaltigkeit der Gestaltung nahelegten. Diskutiert werden weitere Forschungsansätze, die auf die Notwendigkeit der Gestaltung einer Version in einem Umfang abzielen, dass die Beeinträchtigung in einem einzigen Test beurteilt werden kann.

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Introduction

This thesis intends to explore and expand the current understanding regarding *bullshit*, a concept that in spite of its omnipresence in the history of human interaction, has only been briefly approached from a scientific point of view. The implicit familiarity of the common person with the subject lends no aid to this endeavour, bullshit is one of those terms that everyone has a functional understanding of, or at least think they do, yet are unable to properly define. While being almost effortlessly capable of listing elements considered to have this attribute or of appraising if something is bullshit, people have a difficult time explaining what makes it so, what is the essential condition for something to be bullshit. The growing necessity for a structured approach to the topic and the even more pressing need for empirical instruments that permit its quantification are emphasized by Barr (2015) when describing the effects of technological progress on the amount of exposure to bullshit. Every invention that brings along the possibility to spread information, also favours the dissemination of misinformation, and while the traditional channels (e.g. television, radio, newspapers, face-to-face communication) are no strangers to bullshit, the internet offers unparalleled access to unreliable information and can be considered to have “ushered in the Age of Bullshit” (Barr, 2015, p. 1). Moreover, consistent with the claim of McLuhan (1973) that media shapes the consumers’ cognitive processes, Wolf (2007) argues that given the primary importance of efficiency and immediacy in the context of online reading and research, the ability to process the information in order to achieve deep understanding and meaningful connections is slowly replaced by a form of superficial leafing through and rapid bouncing between different sources and ideas. In other words, it is likely that the internet not only grants instant access to a plethora of bullshit but also promotes the development of a cognitive style which is vulnerable to it.

The dangers posed by bullshit are not immediately evident, as Frankfurt (2005) suggests, people tend to have a more permissive approach to it than they do towards lying. While trivial misinformation such as celebrity gossip is indeed harmless and can be regarded as noise, other types of bullshit can have serious negative impact. One such type is that concerned with health issues, where complementary treatments which have little to no empiric support are exalted to the rank of absolute truth, targeting desperate people and negatively influencing their condition by discrediting conventional, effective treatment (Schmidt, 2004). Another area where bullshit can prove dangerous is economy, where

misinformation can lead people to financial disasters. And of course, there is politics, in which massive numbers of voters can be persuaded in the desired direction through inexact, impressive reports. Bullshit is particularly dangerous because no one is truly safe from it. Critical thinking, which Sagan (1996) claims to facilitate “baloney detection”, is expensive both energy-wise and time-wise. Coupling this with the tendency to overestimate internal knowledge, in which the internet plays a significant part (Fisher, Goddu, & Keil, 2015) and with motivational factors (e.g. desperation induced by a disease or an economic status), it is easy to see how anyone can suffer from being targeted by bullshit.

The first chapter summarizes the history of the concept in order to illustrate a clear picture of the current state of the literature and how interdisciplinarity is essential in further developing it. Starting from the origins of the study of bullshit, which are rooted in philosophy and have had as their main objectives the clarification of the concept through the elaboration of definitions, the construction of taxonomies based on distinguishing criteria and the investigation of the intentions displayed by its sources (i.e. the bullshitters). The topic is then followed as it transitioned into the field of psychology through a shift in perspective, moving the focal point to the characteristics of the bullshitee. The first step of the transition was the development of the Bullshit Receptivity Scale (Pennycook et al., 2015) as no other empiric measure existed within the literature. The BSR is an instrument designed to evaluate interindividual differences regarding the ability to detect bullshit. While undoubtedly useful, this measure is limited to identifying the degree of sensitivity to what the authors termed “pseudo-profound bullshit”, a conceptual area strongly related to the New Age movement in spirituality, based on vaguely formulated ideas and misinterpreted terms from quantum physics which are constructed to be profound-sounding yet without any easily discernible meaning. Finally, the chapter will cover the need to expand the research into the field of semiotics, based on the discussion-and-reply between Dalton (2016) and Pennycook et al. (2016) regarding whether the nature of bullshit can be objectively established or it is more of a personal issue.

The second chapter aims to clarify the relationship between bullshit vulnerability and cognitive aspects, such as propensity to engage in effortful processing and the cueing of the need for analytic inferences (as performed by System 2 in the dual process theory - Evans & Stanovich, 2013). While Pennycook et al. (2015) have found positive associations between bullshit detection and cognitive style, which have been confirmed by Pennycook (2016) and extended by showing that bullshit detection is increased when the participants

are informed that the statements require additional processing (i.e., some are nonsense and need to be classified accordingly), little is known about the mechanism through which this is achieved. This is examined through an experimental design that disentangles the contribution of the effort invested during the process of justification from that of an indirect cue regarding the need to engage in effortful processing (i.e., expecting to have to justify the responses afterwards), which can be both expected to lower confidence in the intuitive response by making salient the incompatibilities between it and basic assumptions regarding the world. Further analyses are made based on cognitive style, expecting that it provides additional predictive power for bullshit detection beyond the effect of the previously described factors. Understanding the effects of indirect cueing on bullshit vulnerability, as well as how each process influenced by cognitive style (allocation of resources, maintenance until a satisfactory answer is found and verification) contribute to it, is crucial in the further testing of bullshit vulnerability and the development of additional measures as it indicates to what extent, if any, the participants can suspect that a sceptical approach is required without this significantly affecting their observed vulnerability scores. As within this study, a group of participants are tasked with explaining how they understood the items of the Bullshit Receptivity Scale (Pennycook et al., 2015) and what makes them profound, a quantitative analysis of the main themes will also be presented, having the potential to shed light on Dalton's (2016) claim that randomly generated items can represent adequate sources of profundity.

The third chapter is focused on the research question of "how can bullshit vulnerability be more broadly/adequately measured?", given that so far only one scale exists, targeting but one domain of bullshit (i.e., pseudo-profound bullshit as measured by the BSR). Moreover, this instrument entirely circumvents contextual elements by opting for short, randomly generated items, where as Buekens and Boudry (2015) highlight the importance of context both in elaborating games of verbal smoke and mirrors and in perceiving them for what they are. Thus, various strategies that can be used to develop new measures of bullshit are discussed as well as relevant domains in which bullshit vulnerability research could be of considerable impact. To illustrate the strengths and shortcomings of each process, several attempts to generate bullshit items are presented emphasising whether the products can still be reliably classified as bullshit and whether they are able to provide relevant information about the degree of the readers' vulnerability. The analysis culminates with the development of a novel scale, diverging from the already existing measure both in regards

to targeted domain (i.e., medical and health-related bullshit) and to the importance of contextual measures (long paragraphs explicitly describing intervention packages and underlying theories, providing information regarding to the authors and their affiliation, assessing perceived emotional intent). Psychometric proprieties are assessed in the second empirical study of the current thesis, investigating the expected relationships between the scores provided by the scale and conceptually relevant variables.

Chapter 1. Varieties of bullshit

In the brief history of research on the topic of bullshit there are almost as many terms and definitions as the authors that have worked on it. This can be attributed to two main reasons. First, the word “bullshit” has been used in language long before the first scholars decided to submit the concept to a thorough examination and therefore it covers a wide range of similar yet distinct contexts in which its use is admissible, setting the scene for the different varieties which will be presented in this chapter. Secondly, given its pejorative connotation, some authors have preferred milder terms that hint at the same subject. The following structure respects both disciplinary and chronologic criteria, aiming to present the evolution of the concept within the literature and the genesis of its interdisciplinarity.

1.1 Bullshit and the art of crap-detection, as seen by Neil Postman

The paper delivered by Postman (1969) at the National Conventions for the Teachers of English in Washington is the first academic work that targets the concept. Even though the author claims his goal is to contribute to the subject of linguistics and place bullshit alongside the other elements of English instruction (e.g. literary heritage, grammatical theory), the article is clearly of a pronounced philosophical nature, centred around illustrating a taxonomy of what the author considers to be the most relevant kinds of bullshit that children should be taught to distinguish. The only real connection to linguistics is the brief explanation of the origin of the term, supposedly spread if not created by Romani travellers in the 1800s.

While no formal definition is given, Postman claims that children should be taught how to distinguish bullshit from “useful talk”, therefore hinting that it is useless talk.

The presented taxonomy begins with pomposity, a form of bullshit that relies on using titles, obscure words and complicated phrases in order to hide the insufficiencies of the bullshiter and compel the audience to feel less worthy. This is similar to what later on, Buekens and Boudry (2015) would call “obscurantism”, the difference being that pomposity does not intend to seem profound.

Fanaticism is the second presented type of bullshit, considered more harmful than pomposity. It is defined as the lack of tolerance for any data that supports other points of view than one’s own. An obvious branch is that of bigotry yet an even more dangerous branch is Eichmannism, named after the Nazi SS lieutenant colonel who, during his post-

war trial, did not deny his role in organizing the Holocaust and claimed that he was simply following orders. The essence of Eichmannism is that it disregards the particularities of the current situation in favour of the established norms and official definitions. Another important aspect is that it presents a gentle discourse and a seemingly neutral tone, unlike other branches of fanaticism.

The third variety of bullshit is inanity, representing the situations in which people offer their opinions and judgements under the premise of sincerity, even though they are in no way qualified to tackle the subject and their unsolicited exposition does not generate anything of value. It is defined as “ignorance in the cloak of sincerity” (Postman, 1969, p. 4).

Superstition is also described as a class of bullshit, defined as an authoritatively expressed belief that lacks scientific or factual basis.

The taxonomy concludes with earthiness, counterpart of pomposity, based on the idea that one can make more sense through direct speech, using words such as “shit” and “crap”, than through observing proper language customs. The author, admitting to using the latter, makes a critical point, which he then explains a bit further: “For instance, you can’t identify bullshit the way you identify phonemes. That is why I have called crap-detecting an art. Although subjects like semantics, rhetoric, or logic seem to provide techniques for crap-detecting, we are not dealing here, for the most part, with a technical problem. Each man’s crap-detector is embedded in his value system” (Postman, 1969, p. 5). Based on this paragraph, it is obvious how the paper distances itself from linguistics and takes a firm position in the realm of philosophy. Moreover, it makes a strong claim, that there is no objective measure of bullshit as it is highly contextual, and the author’s use of earthiness is delivered as proof.

Postman then proceeds to demonstrating how bullshit is ubiquitous in human communication: as there is always a hidden agenda, the uppermost level can be considered bullshit of some variety. Moreover, given that almost nothing is about what we believe it to be, ourselves included, he suggests we represent the main source of bullshit which requires confrontation at any point in time.

The paper ends by describing the characteristics necessary for crap detection. While sensitivity to phony uses of language, knowledge regarding how to ask questions, validate

answers and assess meanings are deemed to be important, essentially it boils down to a set of attitudes towards the function of human relationships and communication.

Postman's (1969) approach to bullshit covers a wide area of communication that is inexact, either by hiding its true intention, by using deceiving forms of language or refusing to acknowledge and present the whole package of available information. Furthermore, it seems to be essential for him that it is harmful or, at best, brings no value to society. But after exposing what he believes to be bullshit, a warning is issued: all must be interpreted from a subjective perspective for "one man's bullshit is another man's catechism" (Postman, 1969, p. 5). Therefore, the following can be considered the objective definition of bullshit set forth by the paper: "bullshit is what you call language that treats people in ways you do not approve of." (Postman, 1969, p. 5).

1.2 Humbug

Being used for much longer than the term "bullshit", the degree to which humbug differs in meaning to it is debateable. Frankfurt (2005) considers that it is most likely an issue of politeness and intensity, assuming there is no other significant difference. Nevertheless, given the proximity of the two concepts, the study of humbug can at least be regarded as a proto-phase in bullshit research, if not a full-fledged variety of bullshit.

In his endeavour to portray the humbugs that he has encountered, Barnum (1866) finds himself puzzled in regards to the definition of the word. He initially quotes the Webster definition for the noun: "imposition under fair pretences" and the verb: "to deceive, to impose on" (Barnum, 1866, p. 18) and then argues that it is inexact for the manner in which the term is being used. In his opinion, humbug is characterised by putting on an ostentatious outer appearance which is meant to capture public attention. If after being lured in, the customers are cheated, the perpetuator can be better described as an impostor, a swindler. However, the author then proceeds to illustrate not only creative advertisement but also fallacies, delusions and deceptions in areas such as religion, spirituality, politics, medicine and business. Also important is to note that Barnum acknowledges the universality of humbug, especially when desires are involved, similar to the opinion expressed much later by Postman (1969).

The issues regarding the definition of the term are also experienced by Black (1982), who's solution is the adoption of an inductive approach. The first result of this approach is achieved by analysing an interview of Bernard Shawn regarding a forthcoming naval

conference, in which he countered the reporter's remark that the event has brought the English-speaking people together and is therefore an affirmation of their friendship by saying "Do you really believe that? Humbug." (Black, 1982, p. 2). The author, recognizing its potential as an instrument for identifying humbug, generalizes the formula to "Do you really mean that?", thus extending its reach beyond issues of belief, and labels it "the Shavian probe".

The offensive effect of the expression "Humbug!" is identified as being related to a charge of falseness on behalf of the speaker. Yet as it does not necessarily involve lying in the literal sense of the word, the author introduces a distinction between the message and the stance of the speaker. The former includes everything that is said explicitly or implicitly, the latter containing relevant beliefs, attitudes and evaluations. While the charge of humbug can be attributed to both, Black (1982) suggests that it should be reserved for criticizing the stance of the speaker, as there is a substantial number of words that can be used to condemn a speaker's message without referring to the stance behind it. Among the examples are rubbish, nonsense, gibberish and tautology. Similar to Postman's (1969) later analysis on the concept of bullshit, humbug is suggested to insinuate pretentiousness, insincerity, deception and affectation.

On the topic of the word's origins, the original usage is presumed to be related to hoaxes, false alarms and practical jokes. A quote from 1751 in the *Century Dictionary* claims the word to be meaningless outside of its use as make-weight in the conversations of high society, being neither an English word nor a derivate from another language. The first definition being the one cited earlier from the Webster dictionary by Barnum (1866). Later definitions are criticised by the author as adhering to the traditional ones, failing to convey the modern usage of the term.

A striking example of humbug in literature presented by Black (1982) is Mr. Pecksniff, for Dickens' (1871) picaresque novel, *Martin Chuzzlewit*. The character is described as using words that he thinks sound well on their own or in the context of the sentence, without caring for the meaning or adequacy, in such a manner that would make the wisest of men stagger and grasp again. Marketing stories are also presented, focusing on exaggerations and elements that have little to do with the described product and are purposed only to impress customers by favourable associations. Ceremonial occasions are deemed to be

invitations for humbug, as well as political events. Humbug can also be regularly encountered in the products of academia, in the form of prolixity laced with jargon.

Attention is drawn by author to the framework surround usual conversations and its role in the context of humbug. Each verbal transaction relies on framing presuppositions which are of outmost importance to a successful outcome by determining what is to be expected. The given example involves a traveller asking locals if they know where a specific objective is. While the expected result would be a description of the location of the objective or an indication regarding how it might be reached, a simple affirmative answer, although unhelpful, could not be classified as a lie, especially if a negative answer is given to the now puzzled traveller's next question, respectively if the person is willing to share that information. This represents however a wilful violation of the conditions that normally assure the success of such a conversation, alongside pretending not to hear or understand the question, gesturing your inability to speak or outright acting ludicrously. The second element which might lead to a failure in communication is a misfire, resulting not from deliberate deceit but from ignorance or incompetence on the side of the respondent. While problematic in their own way, misfires are much less disruptive than the intentional falsification of the conversation's constitutive framework, formerly illustrated. Black (1982) considers the latter to be predictable and excusable, hinting that only deliberate violations should be considered humbug. Postman's (1969) account of bullshit is more general, including both elements that cause miscommunication.

Having established that it is possible to disrupt the communicative framework without resorting to falsehood, crucial emphasis is placed on distinguishing humbug from lying. Lying is defined as expressing something which is contrary to the speaker's belief and has been highly reprobated by philosophers and linguists as it is detrimental to some of society's core values, the first among which is communication. However, generating false beliefs through indirect means can be more facile and harder to detect as individuals that resort to them can always claim that everything they produced was considered in good faith to be true. This Black (1982) defines as virtual lying, as it is functionally similar to lying without sharing its nature, and states that it includes the use of significant silence and bluffing, like pretending to lie when telling the truth. Humbug is considered to be neighbouring virtual lying on a conceptual level as it involves a difference between the speaker's beliefs and those that are implanted through the what is transmitted. A particular kind of humbug is presented as being closer than any other to lying: falsidical humbug.

Lying, virtual lying and this variety of humbug involve the intention to deceive and a false belief transmitted within the message, however what sets falsidical humbug apart is that the means employed to achieve its goals display a high level of sophistication. In consequence, it should be regarded as more dangerous because lying can be more easily identified and combated.

While lying does harm communication and the foundations of linguistic institutions, humbug muddies the distinction between what is true and what is not, ultimately leading to a society with gravely distorted values.

Although close in terms of conceptual definitions, the author claims it is important to distinguish between lying and humbug in order to avoid situations in which “everything looks like everything else and all intellectual distinctions have vanished in the service of grandiose obfuscation” (Black, 1982, p. 13).

The Shavian probe is useful in communication as it forces the speaker to choose between either admitting to humbug or supplementing it with a lie. There is however a class of humbuggers in the case of which this instrument does not trigger the desired effect: second-order humbug. This represents humbuggers that have first deceived themselves regarding something and are afterwards spreading it. This condition might seem paradoxical given that for humbug to be effective, it is required that the underlying intention to deceive remain hidden from the public and in this case, the public and the humbugger are one and the same. Yet clarity is gained when further investigating the underlying assumptions: that things are categorized exclusively as either believed or disbelieved and that such information is immediately accessible to the person. Black (1982) disproves them by presenting an example of selective attention and wishful distortion: retaining only the positive aspects of the medical check-up. Dissociation is essential in the process and while difficult at first, with practice, it might become second nature to the person. While the Shavian probe might not work in the case of such individuals, that is not to say their humbug, be it first or second order, cannot be detected.

Other ways of dealing with humbug described by Black (1982), besides the Shavian probe, are interpreting the humbug literary in order to portray its absurdity, translating it into plain language, effective against coping with “learned” humbug, which neighbours Postman’s (1968) pomposity-earthiness dyad and obscurantism (Buekens and Boudry, 2015), the use of parody, humour and satire. The author also recommends familiarization with the

characteristics of humbug by studying the excellent examples present in classic literature such as Pecksniff, Uriah Heep, Podsnap from the works of Dickens or Moliere's Tartuffe and Alceste.

A definition of humbug is presented as the result of the analysis: “deceptive misrepresentation, short of lying, especially by pretentious word or deed, of somebody's own thoughts, feelings, or attitudes” (Black, 1982, p. 16-17). While far from being perfect or covering every existing variety, as is the case of second-order humbug, this short formula successfully reflects the essence of humbug.

1.3 Harry Frankfurt's view: On Bullshit

Frankfurt's (2005) philosophical investigation of the concept is by far the most popular work on the subject. The lack of research on the topic is attributed to people's confidence in their bullshit-detecting ability, which diminishes the apparent importance of what would otherwise be considered a dangerously prevalent phenomenon. Having thus disregarded it, little is known about its nature, the function it serves or the reasons for its abundance within our culture. Frankfurt (2005) addresses the lack of a theory regarding bullshit through exploratory philosophical analysis, aiming to develop a theoretical understanding of the concept.

He begins by reflecting on the arbitrary nature of any sufficient and necessary conditions for something to be bullshit, partially because of its use as a pejorative expression which lacks literal meaning, and partially because of the vastness of the phenomenon. Rhetorical aspects do not concern the author, his main focus being set on defining and differentiating the concept from those neighbouring it.

First among the neighbouring concepts is that of humbug, which Frankfurt (2005) investigates solely through Black's (1982) essay on the topic. Although being used differently, Frankfurt (2005) attributes this to rhetorical parameters and issues regarding politeness and not to dissimilarity in meaning, which is his primary concern. Therefore, it is assumed that the concepts are otherwise similar in every relevant area. This assumption is backed-up by the significant degree to which Black's (1982) definition of humbug can be successfully applied to bullshit. The classification as “deceptive misrepresentation” presents an important structural element of bullshit, namely that it depends, at least partially, on the mental state of the perpetrator. In this regard, it is seen as similar to lying, in which central is not actual falsity but a discrepancy between what is uttered and what is

believed to be true, an intention to deceive on behalf of the speaker. Having established that lying, humbug and bullshit are all considered to be on the continuum of misrepresentations, the author turns to their particularities in order to define their boundaries. Frankfurt (2005) extracts two intentions from the fact that Black (1982) states that humbug is realized *especially* by pretentious word or deed, first, that humbug should not be viewed as restricted to linguistic categories, containing actions as well, and secondly, that there is also non-pretentious humbug, which leads him to believe pretentiousness is not an essential characteristic of the concept. Although bullshit and pretentiousness have a high rate of co-occurrence, the author finds no causal relation between the terms and believes pretentiousness should be regarded as a motive rather than a necessary condition for classification. It could seem, at first glance, that there is a significant difference between these rationales and that of Postman (1969), as the latter rather blatantly classifies pomposity as a variety of bullshit. However, by taking into account the section in which Postman (1969) admits to resorting to earthliness, deeming that it adequately portrays the topic, if not enriches it, as well as considering that pomposity as a variety of bullshit is aimed to elicit feelings of inferiority within the audience and hide the bullshitter's insufficiencies, it is facile to observe how pomposity is neither a sufficient nor a necessary condition of bullshit. Frankfurt (2005) analyses the example of a 4th of July oration, consistent with Black's (1982) advice that such occasions invite humbug. While the bombastic nature of both the employed words and the preferred syntax, are evident, they are not considered the main reason for its classification as humbug. The orator cannot be accused of lying, this would be possible only if the underlying intention was to alter the belief of the audience with information that the speaker regards as false. But most orations are far from that, as they do not even plan to engage the audience in a factual conversation about what is being presented as they care little for the opinions of the listeners on the said topics. Their purpose is to create a specific impression about the speaker. Such a successful oration should recommend the speaker as a deep-rooted patriot which bears great respect for the ancestors and their legacy, who is filled with contemplative thoughts regarding his nation's history, humbling himself in comparison to the grand figures of times long past. While Frankfurt (2005) remarks the similarity between humbug and bullshit, both being situated in the vicinity of lying and involving a self-misrepresentation on behalf of the perpetrator, he considers that Black's (1982) definition does not illustrate the essential traits of bullshit and that his examples are off-mark.

Another neighbouring concept investigated is that of “cutting-corners”. Carefully done work, fuelled by rigorous self-discipline, in which every aspect is considered and effort is invested so that everything turns out as planned, even the elements that are least visible, can be considered the opposite of bullshit as nothing is disregarded and there is no intention to hide anything. A carelessly constructed shoddy artefact can be viewed as being analogue to bullshit as it too lacks fine craftsmanship and attention to the finer details, being constructed in a self-indulgent manner. The presence of “shit” within the word tends to suggest this as it cannot be regarded as something designed, having a defined shape but rather as something that one disposes of, dumping it without too much concern. This is of course problematic when considering the complexity displayed by some bullshit saturated domains (e.g. advertising, politics, spirituality). Such domains produce exemplary, state of the art bullshit by employing carefully researched methods and refining the final product until it fulfils every desired criterion. But however well thought over and worked upon is the bullshit, there is always the need to keep something from being revealed, and in this regard, the analogy between the careless worker and the bullshiter is valid. What makes them similar is not the absence of care for the final product, nor the lack of attention to detail, it is the deliberate indulgence coupled with the intention of personal gain.

Frankfurt (2005) extracts the essential characteristic of bullshit from an account of Wittgenstein’s life, who he describes as being devoted in opposing disruptive forms of non-sense. The episode involves a conversation between Wittgenstein and Fania Pascal, an acquaintance of his that had her tonsils removed. When describing her state, she claims to feel like a dog that has been run over, to which Wittgenstein replies with disgust that she has no idea what that feels like. She is not accused of lying, which would be admissible only if she made the same claim while feeling well, but of a different kind of misrepresentation. Also, Fania Pascal cannot be charged of complete non-sense as the expression used made sense to her, even though she never had direct access to that specific feeling, she was well aware that it represented a highly unpleasant and undesirable state. Frankfurt (2005) argues that Wittgenstein was dissatisfied because her statement consciously implies more than just that she was experiencing an unpleasant state. Wittgenstein’s issue was with the excessively specific nature of her comment: she is not experiencing any negative, painful state but the exact one of a dog that has been run over. In approaching the conversation from this perspective, one could consider that Pascal is bullshiting Wittgenstein, and based on his response, Frankfurt (2005) believes that he most

likely considered it himself. As for the reason why it was thus considered, the author proposes that is related to it being “unconnected to a concern with truth” (Frankfurt, 2005, p. 8). The fault for which she is scolded is that her message was careless in its description of reality, as she did not believe to know what a dog that has been run over feels like, outside of a handful of presumptions, her entire description was fabulized. Wittgenstein is not troubled by the error of Pascal’s description but by the lack of effort displayed in getting things right. Given that she is not concerned with truth, she cannot be charged of lying, that would require her to at least believe that she knows the truth and willingly state the opposite. It is this state of disregard for the way things are that Frankfurt (2005) believes to be the essence of bullshit. Thus, the necessary and sufficient condition for something to be categorized as bullshit is that it is made without any concern for its accuracy and truth-value.

In order to further clarify the nature of bullshit, several entries of the Oxford English Dictionary are examined. The definition for *bull session* is deemed incomplete and therefore Frankfurt (2005) supplements it with his own view. The canonical definition implied only an informal conversation between males, focusing on the gender aspect. By drawing parallels with the homologous term *hen session*, it is argued that while gender is an important characteristic, the qualities of the shared information are more relevant in describing the phenomenon. The author considers that in such sessions, no matter how intense they are, the participants do not take themselves too seriously. It is therefore possible to create a context in which sensitive topics are discussed openly and people are invited to try out thoughts and attitudes that they might not fully endorse, so that they gain the subjective experience associated with those stances. Given that no commitment to the promoted ideas is required, it is assumed that the content of one’s message does not necessarily reflect everyday beliefs and attitudes. This overall prescribes an opened, relaxed environment in which participants can freely distance themselves from their usual philosophical positions and experience arguing in favour of things they do not necessarily wholeheartedly believe, as well as trying to rebuke the arguments that they might have elaborated themselves. Diverging from the standard communicational framework, the idea behind a bull session is not to transmit beliefs, but to enlarge the available repertoire of subjective experiences and explore new approaches. It is therefore similar to bullshit as the information is free from constraints related to truthfulness and adequacy, yet different, as it lacks a hidden motive, a pretense. The term *shooting the bull* describes the conversation

that takes place within a bull session. Frankfurt (2005) presumes that in all earthiness, the expression would be *shitting the bull*. The British use of the term *bull* as unnecessary routine tasks or excessive discipline is closely related, although more on the side of nonsense or justification of aspects that are ceremonially prescribed yet have little to do with the purpose of the action. Other, more widespread definitions of the term *bull* imply triviality, insincerity, untruthfulness and nonsense within a conversation or reference “hot air”, which Frankfurt (2005) considers to be more fitting for the described concept. Hot air, he believes, conveys well the idea that the speaker is contributing with nothing but vapour and that the employed linguistic structure stray from their initial purpose, enriching the informational background with the equivalent of an exhalation. It is further discussed how hot air is similar to excrement, the first being the emptied form of a speech act, and the latter is matter devoid of all nutritive elements.

As for its use as a verb, which is described in the OED by referencing a snippet of Pound’s Canto LXXIV: “Hey Snag wots in the bibl’? Wot are the books ov the bible? Name ‘em, don’t bullshit ME.” (Frankfurt, 2005, p. 11), the author deems it a call for facts, as Snag is presumed to have claimed to have knowledge, or at least interest in the bible and the speaker is calling his bluff by demanding evidence.

Given that in terms of conceptual proximity, bullshit tends to be closer to bluffing than lying, Frankfurt (2005) analyses the differences between bluffing and lying in order to better understand the essential characteristics of bullshit. They are both aspects of deception, involving misrepresentations, however, the central element to lying is falsity, as an information that is contrary to the truth is being transmitted, while that of bluffing is fakery. This is relevant as something that is fake does not necessarily imply other faults to the original, aside from the issue of authenticity. The issue with counterfeits is not related to their characteristics but rather their origin and creation. Frankfurt (2005) considers bullshit to be closer to bluffing, as it is not false but phony, and extracts a second important conclusion regarding the essential nature of bullshit, namely that even though no concern for truth was had in its fabrication, it is not necessarily false. The bullshiter is faking but the information could be correct.

The distinction between bullshit and lying is referenced in Ambler’s (1967) *Dirty Story* when the character, Arthur Simpson, recounts the advice received in infancy from his father: never lie when bullshiting your way through is still an option. This does not only

illustrate a clear distinction between the two concepts but also establishes a hierarchy between them. The criterion on which this hierarchy is based must be deducted as it has never been made explicit. Morality is a decent guess, yet there is little indication that the thoughts of Arthur Simpson's father have followed this line of argumentation. Effectiveness is also admissible yet falls short as there is no reason why a well-crafted lie should not be comparable to attentively constructed bullshit. Frankfurt (2005) believes the criteria is either based on how easy it would be to remain undetected, bullshit clearly outshining the lie as it is harder to disprove, or on the consequences one has to suffer in the unfortunate situation of getting caught. Lies are more often replied to with violence and outrage, partly because they are taken as personal affronts, while bullshit tends to elicit irritated avoidance, mainly considering that time has been wasted by the bullshiter. Yet the alternative presented by Simpson's father is not to simply bullshit but to bullshit your way through. This can be understood as a successive production of bullshit in accordance with the requirements of the situation. Frankfurt's (2005) take on the situation is that lying requires a certain kind of precision as one must know the truth and plan accordingly so that it is not revealed, substituting it instead with a different information. The truth imposes its constrain upon the liar, while the bullshiter, being ignorant and unconcerned, is spared such concerns. While the liar is compelled to tailor a response to context, the bullshiter creates the context, time and again, whenever necessary. When attempting to bullshit your way through, there is no single point of interest where all your focus needs to be directed, but rather your attention is solicited by the entire picture, by the credible succession of fabricated contexts. This does not mean that the task of bullshiting one's way through is easier than lying, it just involves different kinds of aptitudes, favouring a more creative approach as opposed to the analytic one required in the case of lying. Improvisation as well as independence are favoured by the process of successive bullshiting, while austerity and rigour are most useful in constructing an elaborate lie. Based on this distinction and the fact that neither confer any advantage other than their compatibility with the person, Frankfurt (2005) believes that reason for Simpson hierarchization is based solely on his own capabilities and preferences.

The target of misrepresentation in bullshit is neither the status quo nor the speaker's belief regarding it. This is the main difference between the liar and the bullshiter: the latter could in fact end up not deceiving the audience, even if that was the initial intention, regarding

what is true or what is regarded as being true. The only deceit which is certain in bullshit is that related to the ultimate goal, the true motive behind all the words and deeds.

In the case of lying, as well as in bullshit, the speakers are falsely recommending themselves as attempting to transmit the truth, yet in lying one tries to conceal that the audience is being led away from an accurate representation of reality, while in bullshitting, what is hidden is the speaker's lack of interest regarding the state of reality, there is no attempt to either reveal it or conceal it, as there is little to no importance actually invested in it. The only importance facts have for the bullshiter is related to the manner in which they can aid in successful completion of the task. Descriptions of reality are selected or fabricated without care for what is accurate, as long as they serve the final goal of the bullshiter.

Another manner in which Frankfurt (2005) assesses the negative impact of bullshit is by referring to what St. Augustine believes to be the most dangerous enemy of truth. Investigating the categories of lies according to intent or justification, St. Augustine develops a taxonomy that contains eight types of lying, out of which seven are deemed to be motivated by other goals than the production of falsity. Being employed in order to reach a goal, St. Augustine does not consider them actual lies, nor the people who resort to using such deceit as truly being liars. As the desire for the underlying goal motivates them and not the fact that they rejoice from spreading deceit, Augustin considers that they are unwillingly resorting to falsity. The eighth variety is considered to be the enemy of truth: lying solely for the pleasure it produces. Individuals which derive pleasure from misinforming their peers are viewed by St. Augustine as the true liars because they love and actively seek deception for no other purpose than itself. Frankfurt (2005) compares St. Augustin's true liars, the common folk and bullshitters in regards to their relation towards suspecting that an information they are about to emit is false. Common folk are described as being deterred from uttering it, sometimes only because they suspect it to be false while on the contrary, the pathological liars presented in St. Augustin's work are considered to be emboldened by the thought of falsity, gaining momentum in distributing the presumed false information. Distancing themselves from the others, the thought of possible falsity does not affect the bullshitters. They are not guided, as honest men and liars alike, by the presumed truth-value of an information. Frankfurt (2005) believes that by making a habit out of disregarding the accuracy of information and assessing only its contribution towards the success of the endeavour, bullshitting makes a person unfit for telling the truth. One's

tendency to seek out what is true alongside the capacity to distinguish it from falsity, in the author's opinion, can be completely reduced by adopting a bullshit-oriented lifestyle. The result is a person that lacks the skilful perception of the actual state of the world and therefore, is no longer able to provide useful information about the real world. Any such attempt would inevitably end as bullshit. Even the pathological liar of St. Augustine, which is highly uncommon if not entirely unfindable within society, by having an interest in determining what is true, if only to enable a deliberate opposition to it, would be able to recognize it and adequately portray it, leaving the position of "greatest enemy of the truth" to bullshit.

Distancing himself from other researchers on the topic, such as Barr (2015) and Postman (1969), Frankfurt (2005) does not support the view that modern society is more saturated in bullshit than previous times, stating that even though communication has certainly increased there is no accurate way to test whether this has also amplified the amount of bullshit. He does however admit that the current levels of bullshit are great and provides a couple of explanations for this phenomenon.

First of all, bullshit is considered to be inevitable in situations that require individuals to speak about subjects that they do not fully understand. Such situations are common in everyday public life, being triggered either by the desires of the individual or the influence of society. The argument is similar to that offered by Postman (1969) when discussing inanity: a large group of people believe that in a democratic system, it is the duty of the citizens to possess opinions on every aspect related to their country, or even more favouring of bullshit, relevant events in the entire world. Postman (1969) further develops the argument, claiming that the diversity of media channels irresponsibly promotes the mass distribution of such unqualified opinions. Based on this, he believes that people living in the modern era are exposed to more bullshit than those that have lived before. While Frankfurt (2005) retreats to a methodologically safe position, as there is indeed no way to actually measure the difference in bullshit, his first argument supports Postman's (1969) rationale.

Secondly, the deeper sources of current bullshit are attributed to the development of philosophical paradigms which claim that objective reality is not accessible, thus disregarding any attempt at establishing the actual state of things. Frankfurt (2005) deems such anti-realist approaches as guilty of diminishing the importance of uninterested

attempts to determine truth-values and deterring people from objective inquiry. Correctness is no longer the desired characteristic of the result, being substituted, in these approaches, by sincerity. This has lead the individuals away from the construction of world models upon which strong consensus can be achieved and towards presenting honest representations of themselves. Guided by their need for truth, which ca no longer by satisfied by examining the external world as it is presumed devoid of inherent meaning, people are overcompensating by trying to be as true as possible to their own nature. Frankfurt (2005) argues that as conscious beings, our existence is determined through our interactions with the environment and therefore, we can only know ourselves to the extent that we understand our responses to the events that surround us. To this he adds that there is no empirical or theoretical aspect that would lead one to believe self-related knowledge is more reliably acquirable than other kinds of information. Having this in mind, the conclusion set forth is that human nature is less stable and even less inherent than that of the environment, and that such philosophical doctrines lack any substantial contribution, besides the fact that they favour the creation of bullshit and help maintain its current levels within society. In this context, Frankfurt (2005) considers having sincerity as the ideal of science, to be bullshit. If we take into consideration that such ideas, while existing in an attenuated form, have both grown radical and gained popularity only in the recent past, it supports the view that the current levels of bullshit are greater than they ever were.

Frankfurt's (2005) analysis of the concept is undoubtedly the most precise while also being the most popular. It compares bullshit to neighbouring concepts, such as lying, bluffing and humbug, and concludes that its essential characteristic is a lack of concern with the truth. It is clearly differentiated from lying, as having access to the truth is a prerequisite for stating anything that diverges from it. Although similar in terms of usage, humbug focuses specifically on the misrepresentations of fact and most importantly, of the states of the speaker and while bullshit usually, yet not necessarily, involves misrepresentation, these are related to the speaker's care for the actual state of things. Dictionary definitions of related constructs, such as *bull* and *bull session*, are presented as evidence for the conclusion, as well as the traits displayed by prototypical characters from classic literature and examples from the life of the anti-nonsense philosopher, Wittgenstein. Bullshit is likened to poorly executed work as both imply the desire of the creator to keep something hidden, which in the case of bullshit is the lack of importance accorded to what could be considered to be true. It is noted that fancy language is not a necessary condition

for something to be bullshit, although the two often co-occur. Moreover, bullshit is presented as the “greatest enemy of truth” as its continued practice desensitizes one to the importance of accuracy and to truth-values in general.

1.4 Obscurantism

Buekens and Boudry (2014) define obscurantism as an intentional deceit on behalf of the speaker which is realised by employing a difficult to understand linguistic structure and aims to create the impression of profoundness. Moreover, they suggest the speaker, failing to understand the intricacies of the topic or simply having nothing meaningful to transmit, resorts to obscurantism in order to suggest depth and complexity, therefore captivating the audience and thus maintaining appearances. The authors suggest that highly technical terms from prestigious disciplines (e.g. mathematics, quantum physics) are sometimes added to the necessarily complicated syntax and pompous words in order to further the impression of profound and elusive meaning. Another defining element is that the obscurantist always presents the message in a serious and intellectual manner, yet there is little to be understood from it, despite the speaker’s claim of profound insights. Any difficulty in understanding is motivated by an exaggeration of the subject’s complexity which warrants the need for indirect approaches and in-depth study. Blame is always directed towards the people that fail to see the genius of the message.

Nietzsche (1986) is particularly critical about obscurantism, stating that it not targeted at clouding an individual’s belief system, but the entire agreed upon world model and therefore darken our view of existence.

Many varieties of bullshit, such as Postman’s (1969) pomposity, the “pseudo-profound” bullshit of Pennycook et al. (2015) and Black’s (1982) “learned” humbug, may seem, at a first glance, similar to obscurantism. Buekens and Boudry (2014) differentiate obscurantism from what Frankfurt (2005) defines as bullshit by saying that the latter does not necessarily resort to complicated linguistic structures as long as the speaker lacks a concern for truth, while in the case of obscurantism, the content of the message is essential. The authors suggest that the accusation against bullshitters is that they invest no interest in the accuracy of the information they are spreading, while against obscurantists, it would be that they do not actually know what they are talking about and are purposely misleading the audience.

Another distinguishing element between the two concepts is considered to be the role of the audience. Buekens and Boudry (2014) claim that the targeted or favoured audience are usually accomplices to the obscurantists, partaking at the creation or promulgation of the phenomenon by offering justifications and even making use of similar stylistic elements in their own interpretative work.

The distinction between understanding and accepting information is essential for understanding the cognitive mechanisms exploited by obscurantists. An information can be properly understood without being internalized as a belief. A voluntary decision is required in order for an information to be accepted, in which among the factors are the credibility of the source, the circumstances of the information's acquisition and other context-related variables which are independent from the targeted information. Acceptance criteria vary based on the nature of the information. An information must first be understood and only then can it be accepted. This does not however apply to hermeneutic investigations, where it is necessary first to infer what might be expected of the speaker to believe and then interpret the transmitted message accordingly. Identifying plausible beliefs, which are, technically speaking, candidates for acceptance, so that meaning can be inferred is termed the *principle of charity* (Grice, 1989). Buekens and Boudry (2014) present three ways in which obscurantism works around this principle in order to assure its success.

First of all, this mechanism is abused as the speaker tacitly promises complete understanding and the revelatory insights should the assertions be accepted. It is crucial for the obscurantists' plans to convince the audience that beneath the seemingly unintelligible statements lie incredibly rich insights and profound knowledge. By presenting the hidden meaning as a wondrous gem of human understanding, obscurantists hope to motivate their audiences to invest significant hermeneutic effort. Thus, the desire to understand is triggered by the result of the interpretative effort, which being of a personal nature reveals elements connected to the individual's relevant beliefs. Buekens and Boudry (2014) illustrate how the psychoanalytic approach of Lacan places so much hermeneutic burden on the interpreters, forcing them to rely almost entirely on their own beliefs, that in the end, no readers can reasonably agree on what the actual meaning is.

A second element on which obscurantism relies is the exploitation of authority through reliance on testimonial knowledge. This is similar to how the charity principle is overapplied

within religious contexts. By placing the entire set of assertions in an area where practical knowledge with the subject is required and presenting themselves as the only authority, the obscurantists secure their exclusive right to expertise. Independent evidence, which would normally be required in the transition from understanding to accepting, is deemed inadmissible as it lacks certification by practically accomplished experts. In the absence of such deceptions, many of the claims set forth by obscurantists would be dismissed by their incompatibility with already existing beliefs.

Lastly, obscurantism relies on signifiers which permit multiple meanings or even lack prescribed meaning. Under normal circumstances, uncertainty related to the meaning of a word is resolved by accepting the overall statement and inferring what is unknown by resorting to context. Employing signifiers which have “open meanings” helps the cause of the obscurantist as they are interpreted according to relevant beliefs, thus assuring that the message will be accepted regardless of the meaning attributed to the new signifiers. Buekens and Boudry (2014) describe how Lacanian concepts can be applied to explain anything, due to their lack of interpretative rules. Moreover, the authors portray how someone who possesses functional understanding of such concepts can claim that through the status of “disciple”, any work issued has authority derived from understanding the works of the master and therefore should count as testimonial knowledge.

While it is over-charity that triggers the initial investment of hermeneutic effort on behalf of the unsuspecting audience, obscurantism relies on another cognitive phenomenon to insure they do not abandon their search for profound meaning within the carefully crafted verbal labyrinth of smoke and mirrors. The research of Kahneman and Tversky (1979) describes the *sunken cost fallacy* as irrational investment behaviours that are motivated by the fear to lose what has already been invested, without considering the overall losses involved in the further investment. Buekens and Boudry (2014) argue that this phenomenon is responsible for keeping people engaged in searching for deep meaning within contexts that clearly lack it. After significant measures of time and effort have been invested in order to discover the marvellous hidden treasures promised by the obscurantist, people refuse to accept that there is no profoundness to be found as this would render their time and effort completely wasted. Motivated by loss aversion, they further the investment, hoping that eventually the insights will be uncovered. Moreover, to justify the investment, people tend to glorify their mundane insights and further evangelize obscurantism.

The analysis of Buekens and Boudry (2014) provides a fine map of the concept and the cognitive mechanisms that underlie its success, without however truly differentiating it from bullshit.

As a starting point, it is clear that obscurantists lacking the understanding of the topic, lack access to truth-values as well, and given that they still emit their message, they do so without having a concern for truth. Excepting the extreme case of Frankfurt's (2005) chronic bullshiter, who lost the natural habit of evaluating truth-values, it is expected that the sources of bullshit do, indeed, purposely mislead the audience. Regarding knowledge on the subject, bullshitters could be divided between those that have knowledge yet decide to ignore it and those that lack it. The difference between the former and the obscurantists is clear, yet in distinguish them from the latter, it is necessary to remember that the goal of obscurantism is to create the illusion of profoundness, of deeper meaning and insight.

In comparing the two concepts, Frankfurt's (2005) example of the 4th of July orator comes to mind. While the orator might be using pompous language, it cannot be classified as an instance of obscurantism because the transmitted message has an easily discernible meaning: the founding fathers ushered in a new age for humanity, under divine guidance etc. Even though the orator seeks to create a phony impression of profoundness, it is not through linguistic means. However, all it takes to transform this particular bullshiter into an obscurantist is a few signifiers with opened meaning, as for example, describing the new age as one of quantic progress and high frequency self-awareness.

It would be therefore more fitting to regard obscurantism as a variety of bullshit rather than an entirely separate concept.

1.5 Pseudo-profound bullshit and its most likely prey. Bullshit receptivity and detection

A new dimension is added to the research of bullshit through the study conducted by Pennycook et al. (2015), which represents the first psychological investigation on the topic. However, before analysing the impact produced by the shift in methodological aspects, it is important to clarify the authors' perspective on the essential characteristics of the topic and the specific variety of bullshit which they investigated.

Pennycook et al. (2015) adhere to Frankfurt's (2005) view on bullshit, considering that its defining element is a lack of concern for the validity of the transmitted information on behalf of the speaker. Admitting that several varieties of bullshit exist, the authors define

their focus to be on *pseudo-profound bullshit*. In describing the particularities of this specific type, Pennycook et al. (2015) credit the Oxford English dictionary by accepting that bullshit can be regarded as nonsense yet argue that there is more to it than simply that. One element they prescribe as necessary for nonsense to be truly bullshit is syntactical correctness. In other words, it should at least seem to try to communicate something. The second element the authors believe to be essential is related to the nature of what is being communicated. They state that it should imply meaning and truthfulness without providing them. While the first aspect is applicable to any form of bullshit, the second is clearly more targeted on the pseudo-profound kind. Given these characteristics, it is evident that little to no distinctions exist between what Pennycook et al. (2015) call *pseudo-profound bullshit* and what Buekens and Boudry (2014) term *obscurantism*, other than the refusal of the latter to classify the phenomenon as *bullshit*. What is described as “buzzwords” in pseudo-profound bullshit is better explained by Buekens and Boudry (2014) as signifiers that have open meanings. Pennycook et al. (2015) motivate this choice based on its extreme position on the spectrum of bullshit. The elements present within this category are more easily discernible as being bullshit because of their lack of meaning. Other varieties are deemed highly contextual and this is considered problematic as their bullshit status can be questionable. Practical reasons, are also invoked as this variety is considered less trivial than the others. The spreading of “woo-woo nonsense” on social media platforms and the high amount of public attention received by related phenomena, such as those described by Shermer (2010), qualify as relevant examples.

Pennycook et al. (2015) argue that the short length and rapid style of communication specific to Twitter may be favourable to the spread of bullshit as it cultivates an attitude of acceptance towards ambiguity. The authors place themselves on the side of the debate which considers highly probable that bullshit has significantly increased with the advent of the modern technology, renouncing Frankfurt’s (2005) view that the matter is unverifiable and therefore no position can be taken.

An important observation is that meaning and vagueness are situated in opposition as increasing vagueness conceals the intended meaning and undermines its profundity. This relation is extrapolated to a general trait of bullshit, namely that it “attempts to impress rather than to inform; to be engaging rather than instructive” (Pennycook et al., 2015, p. 2).

Pennycook et al. (2015) separate from the established paradigm, in which the focus was on correctly defining bullshit and identifying the common characteristics of its sources. Their approach is concerned with the other side of the communicational framework, the audience and the predisposing factors which make it vulnerable to bullshit. Two mechanisms are presumed to underlie the audience's reaction to bullshit: receptivity and detection. The term bullshit vulnerability is used to describe both the phenomenon and the underlying process, having thus the potential to create confusion. To remedy this, different terms should be employed. We suggest replacing general receptivity with the term vulnerability.

The first is based on the results of Gilbert, Tatarodi and Malone (1993), which suggested that information received while under significant cognitive load is harder to disbelieve and explained the effect by resorting to Spinoza's view that information passes through the stage of acceptance in the process of being understood, being eventually re-evaluated. This completes the phenomenon illustrated through Grice's (1989) principle of charity by taking into consideration a general asymmetry towards belief, thus revealing that additional effort is needed to combat it. Pennycook et al. (2015) consider that in the case of pseudo-profound bullshit, the content is initially regarded as meaningful and, should inconsistencies appear while processing it, only afterwards is it contested by resorting to deliberative reasoning. The initial expectation of meaningfulness is considered important as it determines how severe the inconsistencies need to be in order to trigger the reasoning process, and people are expected to vary in regards to this based on established traits and beliefs. High bullshit receptivity would therefore be associated with a state of excessively "open" mind.

The second mechanism is concerned with the processes employed in order to detect if something is indeed bullshit, failure in doing is considered to be the main reason for the confusion between profundity and vagueness. Given that the information is presumed to be initially accepted, the audience needs to be made aware that further reasoning is needed. Inconsistency within the transmitted information or between it and already established beliefs can serve precisely this purpose. Major factors that influence bullshit detection are supposed to be connected to contextual aspects, such as the reputation of the source, the nature of the situation in which bullshit is encountered, the degree to which the bullshitter's interest in the successful outcome of the endeavour can be sensed and aspects which are particular to the specific variety of bullshit that is experienced.

The transition from philosophical analysis of the concept to empirical investigations regarding the interindividual differences that accompany bullshit receptivity and detection cannot be done without adequate assessment instruments. Given the lack of such measures, the development of a valid scale constituted the main research objective for Pennycook et al. (2015). Analytic thinking, ontological confusion and epistemically suspect beliefs were considered the conceptually related variables included in the process of establishing convergent validity.

Analytic thinking is considered, in dual system theories, as being the product of engaging System 2. This system is described as being deliberate, slow and resource costly, as opposed to System 1 which is automatic, fast and effortless (Evans and Stanovich, 2013). Two aspects are considered essential in order to successfully conduct reasoning: having the required cognitive capacities and motivation to maintain said capacities engaged in the reasoning task. Pennycook et al. (2015) presuppose that analytic thinking is involved in bullshit detection as not only does it amplify the attention accorded to finding inconsistencies but also contributes towards identifying if the lack of meaning is a characteristic of the object or a deficiency on behalf of the examiner. Intuitive people are hypothesized to be more vulnerable to bullshit as they rely on first impression and do not thoroughly analyse the available data.

Ontological confusion is defined as any misattribution of proprieties between physical and mental phenomena or between goal-directed and unintentional behaviour (Lindeman, Svedholm-Hakkinen and Lipsanen, 2015). Examples range from childlike ideas such as believing that furniture desires a home and that the sun intends to shine, to more complex issues, such as believing that mental projections directly influence the course of independent events. It was hypothesized that people endorsing such confusions were more likely to be susceptible to bullshit as both involve failure to reflect on and inhibit intuitive responses.

While epistemically suspect beliefs are not necessarily bullshit themselves, Pennycook et al. (2015) believe that the lack of critical thinking required in order to accept such claims might indicate vulnerability to bullshit. As an argument, they present the results of the study conducted by Lobato et al. (2014): endorse religious, spiritual and conspiracy related beliefs are associated with higher levels of ontological confusion. Moreover, the authors

argue that people which hold such beliefs tend to be avoid critical reflection on similar topics.

Ten syntactically correct sentences were generated using two online random sentence generators. These online random sentences generators are available free of charge and form sentences by arranging words randomly extracted from a database according to syntactic rules. The database from which the first generator selects words contains elements from Deepak Chopra's twitter activity, the second employs a list of words that its creator considered to be profound-sounding. The vague nature of the words present in the databases aids in creating the illusion of profundity and deep, hidden meaning. Pennycook et al. (2015) argue that such sentences satisfy the essential condition of bullshit according to Frankfurt's (2005) definition as their randomly generated nature assures that concern for truth is absent in their construction and that they lack any form of intended meaning. These ten sentences represent the initial form of the Bullshit Receptivity Scale. The task associated with it asks the participants to rate the profundity of the statements on a scale from 1 (not at all profound) to 5 (very profound). Scores are obtained by summing the ratings of each item, high scores indicating that the person is receptive towards pseudo-profound bullshit.

The scale was first administered to 280 university undergraduate students ($m_{age} = 20.9$; $sd_{age} = 4.8$) alongside measures of analytic thinking, heuristics and biases, verbal intelligence, numeracy, ontological confusion and religious belief. The results indicated a satisfactory level of the scale's internal consistency (Cronbach $\alpha = .82$) and an above average mean profoundness rating, indicating that it successfully evoked a sense of profoundness. Excepting numeracy, all variables presented significant correlations with the scale: performance variables such as intelligence and analytic thinking presented negative, correlations while positive correlations were observed in the case of ontological confusion and religiosity. Each correlation had a medium effect size.

For the second study, ten vague tweets were selected from Deepak Chopra's twitter history and added to the BSR as possible examples of actual bullshit, in an attempt to cover the entire spectrum of pseudo-profound bullshit and investigate whether participants' profundity ratings differ between these items and the initial ones. The authors motivate their focus on Deepak Chopra based on the criticism he received from other authors that claimed he is spreading nonsense and on the connection between him and one of the

random sentence generator websites. The scale was supplemented with ten randomly generated items constructed using the same websites.

In this updated version, the scale was distributed to 198 participants ($m_{age} = 36$; $sd_{age} = 11.4$) who were recruited using Amazon's Mechanical Turk. Other adjustments to the previous design were the addition of self-report measures of analytic cognitive style, more items that assess numeracy and of Raven's Advanced Progressive Matrices, in order to measure fluid intelligence. Participants were asked if they knew who Deepak Chopra is and in case of a positive answer, they were asked if they follow him on Twitter or have read his books. The 20-item scale presented excellent internal consistency (Cronbach $\alpha = .93$) as well as the Chopra-Twitter scale (Cronbach $\alpha = .89$). Participants that knew who Chopra is presented significantly lower scores in both scales ($t(185) = 2.84$, $SE = .11$, $p = .005$ for the randomly generated items and $t(185) = 2.32$, $SE = .12$, $p = .022$ for the Twitter scale). Chopra-Tweet items were rated as more profound than the randomly generated items ($t(187) = 10.6$, $SE = .03$, $p < .001$) yet the mean ratings of the two scales presented a strong correlation ($r = .88$). Based on these results, the two scales were combined into the 20-item Bullshit Receptivity Scale (Cronbach $\alpha = .96$). The scale was negatively correlated with all the cognitive ability measures, the heuristics and biases battery. Positive correlations were observed between the BSR and ontological confusion, religious belief, paranormal belief and Faith in Intuition. The only correlation which did not prove statistically significant was between the Need for Cognition scale and the BSR. Medium effect sizes were observed in the case of every variable excepting Need for Cognition.

Having established a reliable measure of bullshit receptivity and assessed its validity through results that confirmed hypothesized associations with conceptually relevant variables, the focus of Pennycook et al. (2015) transitioned to distinguishing between bullshit receptivity, conceptualized as a bias towards considering bullshit statements as meaningful, and bullshit sensitivity, representing failure to detect the need for more rigorous analysis. This required the construction of two new scales. Ten motivational quotations were gathered through an internet search and combined into the first scale (MQS). The items of this scale are considered to be conventionally meaningful, lack vagueness and open ended signifiers, and are written in everyday language. By presenting the participants with actually meaningful items, bullshit sensibility can be evaluated by investigating the difference between their ratings and those of the bullshit items. The second scale introduced (Mundane Statements Scale) contained ten common statements,

which cannot be regarded as profound but are undoubtedly meaningful. The lack of an association between analytic thinking and the profundity ratings of this scale would indicate that bullshit detection is the factor that can be credited for the correlation between analytic thinking and profundity scores.

The study involved 114 American residents ($m_{age} = 36.4$; $sd_{age} = 13.3$) which were recruited through Amazon's Mechanical Turk and received monetary compensation for their participation. Satisfying levels of internal consistency were observed for both the motivational quotation scale (Cronbach $\alpha = .82$) and the mundane statement scale (Cronbach $\alpha = .93$). A detailed analysis of the MSS indicated that 80.1% of ratings were "not at all profound (1)" and 46% of participants rated every item of the scale as "not at all profound (1)". This scale was also the only one to register outliers, 22 scores being thus classified. The participants who provided the scores also rated the items of the BSR ($t(112) = 2.50$, $SE = .21$, $p = .014$) as more profound, compared to the rest of the sample. A difference between these participants and the rest was also observed regarding motivational quotations ratings, however it only bordered statistical significance ($t(112) = 1.83$, $SE = .16$, $p = .071$). This could be regarded as either the result of a bias towards considering statements as more profound or an indication that the participants superficially handled the task. Performance ratings on the heuristics and biases measure favour the former, as the outlier group presented significantly lower performance scores ($t(112) = 3.23$, $SE = .13$, $p = .002$) when compared to the rest of the sample. Another argument in this direction was provided by the marginally significant correlation between motivational quotation ratings and those of the mundane statements ($r = .17$; $p = .067$; outliers excluded: $r = .15$; $p = .170$) as it could indicate a disproportion towards higher profundity ratings in some participants. Furthermore, the loss of statistical significance and dramatic decrease in effect size of the correlation between participants' performance on the heuristics and bias task and mundane statements rating ($r = -.24$; $p = .009$) which occurs when excluding outliers from the analysis ($r = -.08$; $p = .476$) suggests that response bias can partly explain the relation between bullshit receptivity and analytic thinking. The internal consistency of the mundane statement scale dropped considerably when the outliers were omitted (Cronbach $\alpha = .35$), this was however expected due to the low variability of the remaining scores. Results indicated that the motivational statement scale was rated as significantly more profound than the BSR on item level ($t(28) = 3.44$, $SE = .10$, $p = .002$) and participant level ($t(113) = 3.90$, $SE = .08$, $p < .001$), which were received higher ratings than the unprocessed

mundane statement scale ($t(113) = 13.24$, $SE = .10$, $p < .001$, for the participant level and $t(28) = 14.60$, $SE = .09$, $p < .001$ for item level). The statistically significant negative correlation between BSR scores and heuristics and biases performance ($r = -.33$) was consistent with previous analysis yet the association between the latter and the newly added motivational quotation scale did not achieve statistical significance ($r = -.12$, $p = .192$).

A measure of bullshit detection was introduced by subtracting the participants' BSR mean score from their MQS means and named "bullshit sensitivity". Heuristics and bias performance was correlated with this measure ($r = .23$, $p = .013$), even more so when controlling for knowing who Deepak Chopra is ($r = .31$, $p = .012$). This suggested that spontaneous detection of bullshit is connected to analytic thinking.

The fourth and final study conducted by Pennycook et al. (2015) provided participants with an equal number of pseudo-profound bullshit items and motivational quotations, no longer including the mundane statements as to control for their effect. Besides the heuristics and biases measure, the following epistemically suspect beliefs were assessed: paranormal belief, endorsement of complementary and alternative medicine and conspiracy ideation.

The study analysed the responses of 217 American residents ($m_{age} = 33.9$; $sd_{age} = 10.6$) recruited by using Amazon's Mechanical Turk. The 10-item version of the BSR and the MQS were employed as bullshit related measures and demonstrated high internal consistency (Cronbach $\alpha = .89$ and Cronbach $\alpha = .80$ respectively). The items of the MSQ received higher ratings than the pseudo-profound bullshit items on both participant level ($t(231) = 15.93$, $SE = .05$, $p < .001$) and item level ($t(18) = 9.45$, $SE = .09$, $p < .001$). A statistically significant correlation was observed between the two scales ($r = .43$; $p < .001$). No difference in profundity ratings were observed between the participants which had knowledge of Deepak Chopra and those who did not ($t(230) = 1.34$, $SE = .10$, $p = .182$). BSR scores were positively associated with conspiracy ideation ($r = .17$; $p < .01$), trust in alternative medicine ($r = .24$; $p < .001$) and paranormal belief ($r = .30$; $p < .001$). Negative associations were found between the BSR ratings and the heuristics and biases scores ($r = -.21$; $p < .01$). Motivational quotation ratings were, unlike previously assessed, significantly correlated with the heuristics and biases performance ($r = -.14$; $p = .035$).

Bullshit sensitivity was computed as in the previous study but did not correlate with heuristics and biases scores ($r = .10$, $p = .121$), not did it correlate with any epistemically suspect beliefs, excepting paranormal belief ($r = -.21$, $p = .002$). After excluding the

participants who had knowledge about Deepak Chopra, bullshit sensitivity was significantly associated with heuristics and biases performance ($r = .19$, $p = .032$). The authors argue that this could be explained due to Chopra's distinct style, which could have aided some participants in discovering that the BSR items are meaningless, as well as inflated profundity ratings in cases where participants hold favourable opinions of him.

The results of the four studies offer evidence that people present different propensities to rate sentences which are syntactically correct, randomly generated and contain open signifiers (i.e. vague buzzwords) as being profound. Moreover, similar results have been obtained when testing participants with actual profound-sounding bullshit, illustrating that the phenomenon is consistent on every level of the spectrum. Pennycook et al. (2015) term this "*bullshit receptivity*" and conclude that higher levels tend to be associated with lower performance in cognitive abilities such as intelligence and numeracy, more pronounced religious or paranormal beliefs, higher endorsement of conspiracy theories, augmented levels of trust in complementary and alternative medicine, and more ontological confusion. The second investigated aspect, the ability to detect bullshit, was assessed through *bullshit sensitivity*, a variable obtained by subtracting the profundity ratings of meaningless bullshit items from those of conventionally meaningful motivational quotes. Participants that achieved high scores also presented a preference for analytic thinking and a lack of paranormal beliefs. In the context of the lack of correlations between bullshit sensitivity and the other types of epistemically suspect beliefs, such as religious belief, conspiracy ideation and endorsement of complementary forms of therapy, the negative association between bullshit sensitivity and paranormal belief is unexpected. The authors argue that it is due to specific characteristics of paranormal beliefs as a category of epistemically suspect belief. It is suggested that these beliefs introduce claims that are evidently in conflict with intuitive folk concepts, thus predisposing to receptivity and hindering detection simultaneously. As both variables showed consistent interactions with the proposed conceptually related variables, Pennycook et al. (2015) concluded that susceptibility to bullshit represents a valid psychological phenomenon.

Bullshit receptivity is seen as the result of uncritical open-mindedness, having generally high expectations of profoundness in whatever is encountered and accepting information without too much processing. This is opposed to reflective open-mindedness, which is characterized by a search for information that facilitates a critical approach. Such an

approach favours the detection of inconsistencies and conflicts within the information, leading to scepticism and bullshit sensitivity.

An aspect that is missing from the research of Pennycook et al. (2015) is the analysis of the cues employed in bullshit detection. While the results indicate that analytic thinking is essential in the process and that highly developed vocabulary skills can assist it, supposedly through granting information about the vague terms' meanings which aid in conflict detection, what exactly influences a person in deciding profundity ratings is left unexplored.

The context of a psychological experiment could be argued to hinder bullshit detection as participants trust the genuine intentions of the researchers and presume there is no reason for bullshit involved. Moreover, given the expert status of the researchers, bullshit receptivity might be increased on account of trusting that all the selected content is highly meaningful (Sperber, 2010).

Buekens and Boudry (2014) illustrate the importance of context as the interpretation of vague terms is done based on relevant contextual information. Having single sentence items for the BSR which lack context-related cues, such as their sources, can therefore be regarded as an excellent choice because it provides participants with little such information, allowing for over-charitable interpretations based on already accepted beliefs. Yet while this is beneficial for assessing bullshit receptivity, it could interfere with the individual's capacity to detect bullshit by offering insufficient information that might trigger conflict detection, thus providing inaccurate results.

Pfattheicher and Schindler (2016) researched the relationship between pseudo-profound bullshit receptivity, political liberalism/conservatism and US2016 presidency candidate preference. The sample was composed of 196 American citizens ($m_{age} = 36.4$), recruited by using Amazon Mechanical Turk. Bullshit receptivity was assessed using the 10-item version of the BSR and the 10-items mundane sentences scale. Participants were asked to provide favourableness ratings for three Democratic candidates (Hillary Clinton, Martin O'Malley, and Bernie Sanders) and three Republican candidates (Ted Cruz, Marco Rubio, and Donald Trump) in the US election. Information regarding the participants' political orientation was collected using a single self-report item: "Where would you put yourself on a continuum from liberal to conservative?", answers being given on a 7-point Likert scale ranging from political liberalism to political conservatism. A medium sized direct

correlation was observed between BSR and MSS ratings ($r = .52$; $p < .001$), suggesting that participants presented a bias towards accepting statements as profound. Favourable views of all Republican candidates were associated with higher bullshit receptivity score, the strongest correlation being observed in the case of Ted Cruz. Effect sizes were small to medium. Associations between BSR score and favourable views of Democratic candidates were not statistically significant. However, with the exception of the participant that favoured Bernie Sanders, significant correlations were observed between favourable views of Democratic candidates and considering mundane statements as being profound. Political conservatism was also positively associated with high ratings of BSR items.

The study hypothesized that a preference for the conservative side of the political spectrum might be associated with finding meaning in pseudo-profound bullshit based on the results of Onraet et al. (2015), a meta-analysis which suggested that right-wing ideological attitudes are associated with lower levels of analytic thinking. Besides this, Pfattheicher and Schindler (2016) consider that the well-established religious affiliation of Ted Cruz supporters might also contribute to the obtained results. However, they argue that conservatives do not necessarily display an overall receptivity to bullshit, being vulnerable mostly to the pseudo-profound variety.

Pfattheicher and Schindler (2016) do not discuss the relevance of the correlation between favouring Democratic candidates and considering mundane statements as profound. This seems a bit puzzling as it would suggest high levels of bullshit receptivity which are not observed in the case of pseudo-profound bullshit. A possible interpretation would be that the participants which favoured Democratic candidates presented high levels of general bullshit receptivity but also the ability to detect pseudo-profound bullshit. Unfortunately, the research did not include the motivational quotation scale to control for their perception of generally accepted profound statements and pseudo-profound bullshit sensitivity. This also highlights the need for measures that test the receptivity and detection towards other varieties of bullshit.

Pennycook (2016), referring to Trump's claim that he has seen a video of American Muslims cheering after the fall of the Twin Towers, suggests that it would be more accurate to classify him as a bullshiter instead of a liar. The author argues that the situation follows Frankfurt's (2005) description as Trump clearly did not care about the truth value of his

statements, being concerned more with appearances than reality. The context in which said statements were professed, the presidential campaign, support this interpretation.

The focus of Pennycook's (2016) research was on the efficiency of bullshit detection and its relation to individual differences in cognitive reflection. In testing this, five items from the original BSR were retained and five more syntactically correct randomly generated sentences were created using the website based on Deepak Chopra's tweeter history. The ten Deepak Chopra tweet scale and the motivational quotation scale developed by Pennycook et al. (2015) were also employed.

Two hundred undergraduate university students ($m_{age} = 20.1$; $sd_{age} = 3.1$) were recruited and rewarded with course credit in exchange for participation. The instructions clearly stated that some items were designed to be profound while others were specifically crafted so that they give the impression of profundity through their vagueness, and asked the participants to decide which are nonsense and which are meaningful. The author acknowledges that *bullshit* is distinct from *nonsense*, motivating his use of the latter due to a concern for the nature of the language within University context. The efficiency of bullshit detection was assessed by comparing the proportion of bullshit items that were deemed as nonsense to that of the motivational quotes categorized as meaningful.

Cognitive reflection tasks were also included as it was hypothesized that high performances in terms of analytic thinking would be more likely to adequately categorize bullshit items as nonsense. These tasks were the heuristics and biases scale and the Cognitive Reflection Test, both also used in Pennycook et al. (2015). These were considered relevant as they did not only require certain levels of cognitive abilities but also suggest an incorrect intuitive response that needs to be overridden, thus testing for the predisposition towards engaging in analytic thinking.

The collected data indicated that meaningful ratings of pseudo-profound bullshit items occurred 39% of the time, the Chopra items were rated as meaningful 40.7% of the time and motivational quotations, 83.2% of the time. A significant effect was obtained through repeated measures ANOVA ($F(2, 338) = 291.15$, $MSE = .037$, $p < .001$, $\eta^2 = .63$). Post-hoc analysis suggested that randomly generated items were undistinguishable from Chopra Tweet items ($t(169) = 0.96$, $SE = .02$, $p = .339$, $d = .07$) and that significant differences could be observed between the classification of both scales and those of the motivational quotations ($p < .001$ in both cases). Pennycook (2016) argues that given the low

percentages (under 50%) of classifying both bullshit items and Chopra Tweet items as meaningful, participants were overall able to adequately discern between them.

Regarding the efficacy of bullshit detection, correct classification of bullshit items as nonsense was significantly lower than correct classification of motivational quotations ($t(169) = 9.70$, $SE = .02$, $p < .001$, $d = 1.03$), suggesting that individual differences play an important role in the bullshit detection.

Bullshit receptivity was computed by summing the proportions of the randomly generated items and those of the Deepak Chopra Tweets which were classified as “meaningful”, bullshit detection being obtained by subtracting the proportion of “meaningful” choices for the motivational quotations from bullshit receptivity. Heuristics and biases performance was correlated negatively with bullshit receptivity ($r = -.33$; $p < .001$) and positively with bullshit detection ($r = .27$; $p < .001$). CRT scores were positively associated with bullshit detection ($r = .23$; $p < .01$) but not with bullshit receptivity ($r = -.13$; $p = .081$). The association between the proportion of correctly classified motivational statements and cognitive performance measures was unexpected, significant correlations being observed in the case of CRT scores ($r = .20$; $p = .01$) but not in the case of the heuristics and biases measure ($r < .01$; $p = .965$). Pennycook (2016) suggests that initially facile task of identifying motivational quotations as meaningful has been complicated by the inclusion of bullshit.

The results indicated that people are capable of identifying bullshit when made aware of the possibility of its presence. However, classifying clearly formulated motivational quotations as meaningful was observed to be easier than the classification of bullshit items as nonsense. Pennycook (2016) considers that the difficulty of recognizing bullshit, even when explicitly cued regarding about it, might explain the popularity of bullshit.

The association between analytic cognitive style and bullshit detection presented in Pennycook et al. (2015) was confirmed as participants that presented a preference for analytic thinking correctly classified item more frequently.

Although bullshit research has gained considerable popularity (Bolton, 2015), pseudo-profound bullshit remains the only variety that has been empirically investigated.

1.6 Bullshit or Transcendence? Paradigmatic approaches to bullshit

In a reply to Pennycook et al. (2015), Dalton (2016) inquires if the items of the BSR truly represent examples of bullshit. His perspective focuses on the subjective impact of the sentences on the participants, acknowledging that they are randomly generated yet considering that this is of secondary importance. He claims that the items might be regarded as bullshit by Pennycook et al. (2015) but as long as the people who read them gained insight and wisdom, classifying them as bullshit would be unwarranted.

In support of his view, the author illustrates his conversation regarding an item of the scale with person that has studied Tibetan Buddhism for several years. The item in question was “wholeness quiets infinite phenomena” and the person found it thought provoking, even when the author mentioned that it was generated by a computer. The transitory appearances of thoughts and emotions within the mind are termed “phenomena” in Buddhism. Thus, the expression “infinite phenomena” refers to continuous flow of elements within the mind, responsible for creating distinctions, such as pleasant-unpleasant, which eventually lead to attachments, states that are not only experienced but continually desired. Such states are the source of confusion, as every aspect of reality is marked with impermanence. By contemplating “wholeness”, viewing the Universe as a singular process to which we adhere, the illusory nature of attachment is realised and the effects of the infinite phenomena are removed, or “quieted”.

Dalton (2016) argues that such a sentence requires thorough and lengthy contemplation as its transcendental qualities cannot be immediately understood. By observing one’s own mind in the process of this contemplation, one gains access to a plethora of first person subject experience. This experience represents the appropriate outcome of interest.

The source of the subjective experience is considered of little relevance for Dalton (2016), regardless of it being a renowned sage or a computer, as long as the wisdom derived from it transcends psycho-social constructs.

Transcendence and profound reflection are not incompatible with apparent nonsense (Tremmel, 1993). Both western and eastern philosophical traditions rely on paradoxes that focus on creating cognitive gaps and in doing so disregard the requirement of immediate meaningfulness. Dalton (2016) cites the famous Zen koan “what is the sound of one hand clapping” as an example of sentences that are considered truly profound yet might be regarded initially as nonsense. The knowledge imparted by such elements comes not from

a sequential reasoning process but through a cognitive shock. Lewis (2000) describes three ways in which individuals can react to a paradox: it can be accepted, confronted or transcended. Acceptance involves learning to live with it, confrontation leads to accommodation and transcendence results in a shift of perception, a modification of one's worldview that solves the issue proposed by the paradox. Interaction with a paradox can be seen to have a polarizing effect, most people either discarding it as nonsense or, understanding the newly proposed point of view and modify their assumptions accordingly.

Dalton (2016) demonstrates other possible profound interpretations for items of the BSR that have received high profundity ratings, concluding that he finds it unsurprising that people have rated such items as being profound. Furthermore, he believes that the participants might have even benefited from the experience. However, not all items are considered to be profound and the claim of bullshit is considered valid, as this is not the main point of the author.

Stating that “beauty, like bullshit, may be in the eyes of the beholder” (Dalton, 2016, p. 2), the author questions whether Frankfurt's (2005) definition of bullshit can be applied to profoundness. The true target of his reply to Pennycook et al. (2015) is the dangerously pervasive belief encountered in Western society that classifies any elements that lack immediate meaning as bullshit. Sources of transcendental wisdom are not invalidated by the lack of intentionality, a possible example is that of Watts' (2010) observation of maple tree leaves falling which lead to a deeper understanding of the interaction between individuals and their environments. Dalton (2016) adds waterfall sounds, the scattering of autumn leaves and willow trees playing in the breeze to the collection of things that lack any intention for profundity yet can lead to transcendence, concluding that he can find no reason to exclude randomly generated sentences from this category.

Pennycook et al. (2016) reply by stating that even if it is considered profound by some people, bullshit remains just bullshit. They reiterate the reasons for which the BSR items are considered to be classified as bullshit: by using a random sentence generator, the statements fulfil the essential condition of bullshit that was identified by Frankfurt (2005), being designed with a lack of concern for truth and having unambiguous meaning; the statements do not consistently present unambiguous, although some people can interpret them as profound. The philosophical position in which Dalton's (2016) reply is based, radical reader-response theory, always offers the reader the final say in constructing the

meaning of a text. This is not viewed by Pennycook et al. (2016) as incompatible with their previous research, considering that it actually supports the premises of their work, the starting point of their investigation being the expectation that people differ in attributing profundity to bullshit sentences.

The authors present a comparison between the average profundity ratings of the BSR scale and those of the motivational quotation scale as proof that the two sets do not have the probability of being interpreted with the same level of meaningfulness. A plausible hypothesis is extracted from Dalton's (2016) argument, that participants who demonstrate higher cognitive ability may be more apt to construct relevant meaning for the bullshit items. Empirical evidence from Pennycook et al. (2015) does not confirm it, the authors arguing that even if meaning is constructed, participants realize that it was created through their own interpretational efforts and thus refrain from rating the statement itself as profound.

A second hypothesis that was inferred from Dalton's (2016) reply is that only some bullshit items profundity ratings could be based on the capacity to construct profound meaning for randomly generated sentences. This would imply that the profundity ratings for some items are associated with higher performance on cognitive ability tasks. Pennycook et al. (2016) tested this by grouping the higher rated half of the BSR items into the "more profound" scale and the rest into the "less profound scale". Both scales contained 5 items and displayed acceptable levels of internal consistency (Cronbach $\alpha = .81$ and respectively $.75$). The two scales presented similar correlations to the variables analysed in Pennycook et al. (2015), slightly differing in their association with the heuristics and biases measure. The direction of this difference did not support the hypothesis as higher rated items presented a stronger negative correlation with the cognitive ability measure ($r = -.36$; $p < .001$) than lower rated BSR items ($r = -.23$; $p < .01$). The results of William's test indicated that the two correlations were significantly different from each other ($t(187) = 2.08$, $p = .038$). In order to confirm the hypothesis, Pennycook et al. (2016) claim a lower negative association would have been needed, if not an entirely positive. Based on these results, the authors concluded bullshit is classified according to the intention of the source and not how it is perceived, and that the fact that some people might find profound meaning in bullshit does not affect its classification.

It could be argued that Dalton's (2016) approach is exactly the kind of philosophical position that Frankfurt (2005) considers to be favourable to the spreading of bullshit, obscuring the importance of truth by focusing on sincere subjective experience. However, it reveals an important aspect about bullshit research which has not been attended: the justification produced by the bullshitee in the process of accepting bullshit as meaningful. From this perspective, if bullshit is regarded as a form of art, which could be the case when focusing solely on pseudo-profound bullshit, profoundness could have a different valence.

Chapter 2. Understanding Bullshit Vulnerability

2.1 Dual process tradition. Direct and indirect cues of system 2 and conflict detection

The dual process paradigm (Evans, 1984) has gained considerable attention in the recent years, being applied successfully not only to decision-making (Kahneman, 2011), but also to other various cognitive processes such as attention (Eysenck, 2010) and moral judgement (Haidt, 2001). The paradigm's common factor is the distinction between intuitive automatic processes and analytic effortful ones, the former being based on heuristics constructed through previous experience and applied trans-situationally, while the latter is situation specific, being triggered when the need for additional processing is detected.

Evans and Stanovich (2013) discuss two essential aspects that are required in order to reason adequately: cognitive capacity and motivation. Having solely the resources necessary for the task does not guarantee success, unless when mastery is involved and the developed heuristics are sufficiently well honed regarding the nature of the task. Motivation is usually required in order to inhibit intuitive responses, mobilize cognitive resources towards the task and keep them engaged until the issues are resolved. Moreover, supplementary motivation is required to double-check the results of the process, adding to the overall effort cost. As there are stable individual patterns of disposition to engage in the effortful processing of tasks, this dimension has been termed cognitive style and is depicted on a continuum ranging from intuitive (preference for heuristic based responses) to analytic (tendency to engage in effortful cognition).

De Neys (2014) highlights an important component that cues deliberative thought processes, namely conflict detection. If the participants detect conflicts between their intuitions, which are grounded in beliefs created based on previous experiences, and the logical principles present in the task, they will be more prone to question their heuristic based response and direct cognitive resources towards the task. Even though sensitivity to conflict can be seen through increased response times, increased autonomic activation, increased inspection of the logically critical parts of the problem, decreased accessibility to semantic knowledge related to the intuitive response and less confidence in the response, it does not guarantee an unbiased response.

Pennycook et al. (2014) offered evidence of a relationship between the presence of an analytic cognitive style and the ability to detect conflicts, showing that people, who prefer intuitive cognitive styles, are less efficient at detecting or reacting to conflicts.

In the context of bullshit vulnerability, Pennycook et al. (2015) observed the hypothesised relationship between analytic style and ability to detect bullshit, concluding that participants which professed an analytic thinking disposition were either more sensitive to the inconsistencies between the statements and previously acquired logical principles or less inclined to believe that failure to detect meaning is due to their incapacity rather than to the characteristics of the statements or deficiencies on behalf of the researcher that proposed them, the supposed working mechanism of Postman's (1969) pompous category of bullshit.

To eliminate the expectations about task demands and trust in the researcher, Pennycook (2016) asked participants to decide whether the presented items are meaningful or senseless, being previously informed about the presence of 'nonsense' sentences, which were defined as consisting of randomly selected words which were deliberately vague so that they offer the impression of profoundness. This study was intended to extend previous findings using a different type of task, examining the efficiency of bullshit detection and if it can be adequately predicted by cognitive reflection. While the results (detailed in chapter 1.5) indicated that bullshit can be reliably detected and that the correlation between detection and cognitive style observed in Pennycook et al. (2015) was consistent, not being based on some isomorphic features of the initial profundity task, aspects related to prediction were not explicitly assessed.

Pennycook et al. (2015) went to considerable lengths to avoid cueing detection, resulting in a somewhat naturalistic study of bullshit vulnerability, while Pennycook (2016) directly cued detection by stating that some of the sentences are meaningless. As profoundness is a rather personal dimension, an indirect form cueing of system 2 would be to ask participants to explain what do the statements mean for them, what do they think that the statement is trying to convey. While this approach does not directly trigger conflict detection, it requires the investment of additional processing resources in order to translate the result of the intuitive reasoning process into a coherent narrative, which might highlight the discrepancies between what the statement is conveying and previously acquired logical

principles. Thus, explaining the meaning of the statement would aid detection without effectively triggering it.

In this model, it would be expected that cognitive style moderates the relationship between the amount of cognitive effort required by the task and bullshit vulnerability as a person which professes an intuitive cognitive style could fail to detect conflicts even when the representations of the differences were highly activated yet for someone who is situated more towards the analytic end of the spectrum, clearer discrepancies would result in less confidence in the intuitive response and therefore less bullshit vulnerability. Results have the potential to clarify the degree to which each aspect of the cognitive style contribute to bullshit detection.

Moreover, no study has examined how the pseudo-profound quotes are subjectively interpreted and Dalton (2016) suggested that they might be genuinely meaningful for some people through the example of the Tibetan Buddhist student (see chapter 1.6). Therefore, a semiotic analysis of the themes reflected in the perceived meaning of the BSR items would be a welcomed addition to the literature.

2.2 Method

2.2.1 Participants

The sample consisted of 132 participants (89 female) with ages between 18 and 65 ($M = 29.29$; $SD = 10.40$). Fifty participants took part in the control condition (38 female; $M_{age} = 25.78$; $SD_{age} = 8.90$), another fifty took part in the expected justification condition (36 female; $M_{age} = 32.82$; $SD_{age} = 10.56$) and thirty-two completed the justification condition (15 female; $M_{age} = 29.25$; $SD_{age} = 10.74$). Participants were randomly assigned to one of the three groups after they manifested their intention to take part in the study, when the link to the online questionnaire was sent. The justification condition averagely required almost twice as long to complete, justifying the low response rate.

2.2.2 Materials

In testing the mechanisms behind bullshit vulnerability, the main criteria were pseudo-profound bullshit receptivity, assessed using 15 randomly selected items (10 randomly generated and 5 Deepak Chopra tweets) of the 20-item scale designed by Pennycook et al. (2015) and pseudo-profound bullshit sensitivity, computed by subtracting receptivity score from the Motivational Quotations Scale (MQS). Therefore, participants were asked to rate

the profundity of forty statements. Using the definition from Pennycook et al. (2015), profundity was described as “of deep meaning; of great and broadly inclusive significance.”

Cognitive style was measured using the seven-item version of the Cognitive Reflection Task (Toplak, West, & Stanovich, 2014), an extension of the three-item The Cognitive Reflection Task (Frederick, 2005). The seven-item version retains the basic structure of the previous version, presenting mathematical world problems that cue an incorrect intuitive response which needs to be examined and disregarded in order to reach the correct answer.

In order to distinguish between the effects of system 2 cueing and those of the actual effort invested in expressing the perceived meaning of the statements, three levels of the independent variable were created. In the first condition, participants were asked to first briefly explain the perceived meaning and reason for its profoundness and then rate each item, assessing how the effort required by written justifications affects bullshit vulnerability. An example was provided for the quote “Whether you think you can or you think you can’t, you’re right” in the form of “Your attitude towards things determines how you will behave and how well you will perform, motivation is important in anything you do and starting with a negative mindset will never be helpful”. In the second condition, participants were informed that they should think about the perceived meaning and the reason for its profoundness before rating as they will be asked for to write it later, evaluating the effect of the cue (i.e., being aware that they will have to justify their ratings). Participants in the second condition were not asked to write their reasoning afterwards. The third was the control condition (i.e., no cueing), simply presenting the statements as in Pennycook et al. (2015).

2.2.3 Procedure

To recruit participants, a message describing the study was posted on the social media groups related to each study year of five psychology departments, belonging to five separate Romanian Universities. The message presented essential information related to the study (e.g., average time required to complete, enrolment period, types of items which will be encountered), stating that the goal is to study the perception of profundity and relate it to interindividual differences in cognitive style. The announcement asked those interested in participating to send an email and also notify other interested people about the study. Each email was randomly assigned to one of the three study groups. No exclusion criteria were set. Three reminder emails were sent to those who opted in, providing them with the

link to the study. Participants first completed the pseudo-profound bullshit related items and then the cognitive reflection task.

2.3.4 Hypotheses

Our hypothesis was that bullshit vulnerability will differ among the three conditions, participants showing more detection in the two cue conditions than in the control condition. Observed difference between the written justification condition and the expected justification condition have the potential to indicate which types of interaction with pseudo-profound bullshit are more important in order to trigger detection, an aspect important both in the further assessment of bullshit, the development of new scales and in devising intervention protocols to combat bullshit vulnerability. Cognitive style was expected to moderate the relationship between justification (real or expected) and detection as it reflects more than the disposition to invest effort and keep resources engaged, contributing to the process of conflict detection through decreasing confidence in the intuitive response.

2.3 Results

2.3.1 Quantitative results

Table 1. *Descriptive Statistics*

group		Min	Max	Mean	Std. Dev	Skewness	Std.E	Kurtosis	Std.E
Control	Receptivity	15.00	68.00	42.5600	12.57818	-.289	.337	.055	.662
	RG items	10.00	46.00	27.2800	8.57390	-.138	.337	-.069	.662
	Chopra items	5.00	25.00	15.2800	4.69928	-.209	.337	-.266	.662
	Motivational	10.00	48.00	36.1400	8.68264	-.931	.337	.762	.662
	Quotes								
	Sensitivity	-1.30	2.40	.7767	.85785	-.238	.337	-.601	.662
	CRT	.00	7.00	3.6600	2.30890	.020	.337	-1.416	.662
Expected justification	Receptivity	15.00	74.00	46.3800	14.85287	-.069	.337	-.731	.662
	RG items	10.00	49.00	29.6400	10.23152	.046	.337	-.772	.662
	Chopra items	5.00	25.00	16.7400	5.14210	-.251	.337	-.617	.662
	Motivational	20.00	50.00	37.2200	7.16935	-.230	.337	-.122	.662
	Quotes								
	Sensitivity	-.90	2.47	.6300	.73093	.145	.337	.064	.662
	CRT	.00	7.00	3.0200	2.37753	.213	.337	-1.277	.662
Justification	Receptivity	17.00	75.00	35.3750	16.01360	.779	.414	-.255	.809
	RG items	10.00	50.00	22.8438	10.52833	.768	.414	.070	.809
	Chopra items	5.00	25.00	12.5313	6.07472	.668	.414	-.645	.809
	Motivational	12.00	50.00	33.5625	8.87526	-.646	.414	.106	.809
	Quotes								

Sensitivity	-.107	2.80	.9979	.88232	.164	.414	.049	.809
CRT	.00	7.00	3.6875	2.36149	-.149	.414	-1.361	.809

Note. RG = Randomly Generated; CRT = Cognitive Reflection Test.

Table 2. *Shapiro-Wilk normality test*

	group	Statistic	Sig.
Bullshit Receptivity	Control	.975	.356
	Expected justification	.975	.372
	Justification	.899	.006
Randomly Generated items	Control	.975	.353
	Expected justification	.974	.328
	Justification	.923	.025
Chopra items	Control	.978	.482
	Expected justification	.962	.105
	Justification	.912	.013
Motivational Quotes	Control	.933	.007
	Expected justification	.980	.540
	Justification	.961	.289
Bullshit Sensitivity	Control	.980	.559
	Expected justification	.984	.732
	Justification	.981	.827
Cognitive Reflection Test	Control	.903	.001
	Expected justification	.907	.001
	Justification	.901	.007

The results of the Shapiro-Wilk normality test suggest that bullshit receptivity scores (on both randomly generated items and Chopra tweets) do not approximate the normal distribution in the case of the justification group. However, given that skewness and kurtosis values are in the normal range, as seen in table 2, that the stem-and-leaf plots (addendum 4) do not show large deviations from the normal shape of the distribution and that no extreme values have been identified, it is safe to assume that the variables are normally distributed and to apply parametric tests in order to verify the hypotheses.

To test for differences in bullshit receptivity and bullshit sensitivity between the three groups, a one-way ANOVA was conducted. Homogeneity of variances, as assessed by Levene's test of homogeneity of variances, was assumed in the case of bullshit sensitivity ($p = .352$), randomly generated items ($p = .087$) and Chopra items ($p = .118$), being however violated in the case of bullshit receptivity ($p = .047$). The result of the analysis suggested that the groups differ significantly with respect to bullshit receptivity (Welch's $F(2, 74.31) = 4.83, p = .011, \omega^2 = .06$), randomly generated items ($F(2, 129) = 4.79, p = .010, \omega^2 = .05$)

and Chopra items ($F(2, 129) = 6.34, p = .002, \omega^2 = 0.75$), having found no significant difference regarding bullshit sensitivity ($F(2, 129) = .129, p = .143, \omega^2 = .01$).

Post-hoc analysis revealed that the justification group and the expected justification group differed significantly in terms of bullshit receptivity (Tamhane mean difference = 11.00, 95% CI [2.35, 19.65], $p = .008$), on both randomly generated items (Bonferroni mean difference = 6.79, 95% CI [1.46, 12.12], $p = .007$) and Chopra items (Bonferroni mean difference = 4.20, 95% CI [1.33, 7.07], $p = .002$). However, the differences between the two experimental groups and the control group were not statistically significant (Tamhane mean difference = -3.82, 95%CI [-10.50, 2.86], $p = .555$ for the expected justification group and Tamhane mean difference = 7.18, 95% CI [-1.04, 15.41], $p = .104$ for the justification group).

A Kruskal-Wallis test was conducted to determine if there were differences in the profundity ratings of motivational quotes between the groups. While a similar pattern was identified, the justification group presenting the smallest profundity ratings (mean rank = 56.31), followed by the control group (mean rank = 68.89) while the expected justification group awarded the highest profundity ratings (mean rank = 70.63), the differences were not statistically significant ($\chi^2(2) = 3.055, p = .217$). These results will be more broadly explained in the context of the following analysis.

A hierarchical multiple regression was run to assess the increase in variation explained by the addition of an interaction term between cognitive style and group to a main effects model. Linearity was established by visual inspection of a scatterplot. There was no evidence of multicollinearity, as evidenced by no tolerance values less than .246. There was homoscedasticity, as assessed by visual inspection of the studentized residuals plotted against the predicted values for the three groups. The studentized residuals were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$). Cognitive style did not moderate the effect of the group on bullshit receptivity, ($F(1, 128) = .002, p = .967$). As such, the interaction term was dropped from the model. This new model revealed that there was a statistically significant negative linear relationship ($b = -2.275, SE = .520, p < .001$) between having an analytic cognitive style and bullshit receptivity. Moreover, knowing that profundity ratings will have to be justified at a later time significantly predicted an increase in bullshit receptivity ($b = 5.253, SE = 2.489, p = .037$) while having to explain

the meaning of the items and the source of their profundity significantly predicted a decrease in bullshit receptivity ($b = -8.346$; $SE = 2.748$; $p = .003$).

A second hierarchical multiple regression was run to assess the increase in variation explained in bullshit sensitivity by cognitive style, indications given to each group and their interaction. Linearity was established by visual inspection of a scatterplot. There was no evidence of multicollinearity, as evidenced by no tolerance values less than .246. There was homoscedasticity, as assessed by visual inspection of the studentized residuals plotted against the predicted values for the three groups. The studentized residuals were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$). Cognitive style did not moderate the effect of the group on bullshit sensitivity, ($F(1, 128) = 1.429$, $p = .234$) and therefore the interaction term was dropped from the model. A non-significant positive linear relationship ($b = .049$, $SE = .031$, $p = .113$) was observed between bullshit sensitivity and cognitive style. Other non-significant relationships with bullshit sensitivity were observed in the case of the two experimental groups (expected justification group: $b = -.205$, $SE = .148$, $p = .168$ and justification group: $b = .279$, $SE = .166$, $p = .095$).

To better understand the paradoxical effect observed in the case of the expected justification group, bullshit vulnerability scores were compared within each group between participants that presented an analytic cognitive style (i.e., CRT score above median value) and those that presented an intuitive cognitive style. Results of the Mann-Whitney tests indicated that within the control group there was no difference in either receptivity ($U = 232.50$, $p = .120$) or sensitivity ($U = 302.50$, $p = .846$). A significant difference was found within the expected justification group in terms of bullshit receptivity ($U = 142$, $p = .001$) but not sensitivity ($U = 221.50$, $p = .091$), and within the justification group in terms of sensitivity ($U = 74$, $p = .043$) but not receptivity ($U = 83.50$, $p = .094$).

The hypothesised relation was confirmed only in the case of the justification group, the other experimental group presenting an opposite yet non-significant effect. Collected data was not sufficient to confirm the proposed moderation effect, however, the model containing the two investigated variables explained 17% of the variance of bullshit receptivity scores.

2.3.2 Qualitative results

Table 3. *Main themes and relevant examples provided by the justification group*

Items	Main themes	Relevant examples and singular items
Only those who will risk going too far can possibly find out how far one can go.	Doing things yourself	Do not be limited by what others say, try it yourself
	Enduring hardship	It refers to the universal force of will-power, to the importance of taking responsibility for our choices, to empathy and tenacity. It is profound because it reminds us of our limitations.
	Taking risks	The lack of fear can aid us in experiencing new states of consciousness
		One must push boundaries to see where the boundaries are.
We are not an emergent property of a mechanical universe but the seasonal activity of a living cosmos	Consciousness as a primitive element of the universe	We make up an entire cosmos of both positive and negative actions. We take action within a cosmos that is itself completely contained within us. The cosmos gives us the opportunity to manifest ourselves, and in return we bring it to life, we give it depth, and though we fill it up, we leave it unblemished.
	Ephemeral nature of life	The technical, mechanical and automatic versus the living, dynamic and unpredictable
	Mechanic versus living	We are not mere objects, we are the manifestation of the life force that nurtures and moves the universe.
	Importance of our actions	This quote encourages us to have a positive outlook on death.
Your teacher can open the door, but you must enter by yourself.	Acting on opportunity	Even though we might seem insignificant, we too contribute to the continuous transformation of the universe. Anything we do might somehow affect another being in this universe, in ways that might be beyond our comprehension.
	Knowledge requires personal effort	It is profound because it makes us appreciate our teachers
Wholeness quiets infinite phenomena.		It is profound because the individual is made responsible
		The goal is to be reunited with what we were in the beginning
	Circular metaphor – birth and death, beginning and end	An infinite phenomenon can be defined as the birth or emergence of a new generation of objects. Wholeness, as well as significance, can be compared to the founding of a family or the finalization of a physical or psychological phenomenon. Music brings peace to a chaotic mind.
	Control, anxiety	
	Returning to the self	What is concrete brings a state of control when you are facing abstract things
		Incompleteness breeds anxiety

		The moment you realize that infinity lies within, you befriend good and evil, the sky and the earth, love and fear. From now on, only silence shall reign in your temple. The profundity of this affirmation seems obvious.
		It is profound because it advises us to take Nature as a model
A river cuts through a rock, not because of its power but its persistence.	Many ways to success Persistence	Patience allows you to access your true potential. If your intentions are clear and you don't break down under time's illusory pressure, you can achieve anything. Intention and focus will surely lead you to success.
		<u>Tenacity trumps whizz-bang shows</u>
		It is profound by indicating that forgiveness is a form of freedom
Forgiveness means letting go of the hope for a better past.	Let bygones be bygones Forgiving yourself Accepting the past leads to a better future	It is profound by showing us the futility of refusing to forgive Forgiveness is the only act of the present that can change the past
		It is profound because it reflects the fact that we can <u>control how we perceive life</u>
Nature is a self-regulating ecosystem of awareness	Interconnectedness Nature nourishes us Nature is the ultimate reality	Nature is a muse for our mind and our body Consciousness is manifested through anything that exists Nature regulates its own reality The impact we have on nature is revealed by the impact nature has on our lives. Understanding this circularity/interconnectedness is a proof of profundity.
We are being called to explore the totality itself as an interface between serenity and intuition	Balance Having a calm and intuitive state of mind	We are capable of bringing the completeness of things into a state of balance that benefits us. We can intuitively understand this balance and decide upon it. Serenity favours insight. We have descended in the realm of time to avidly contemplate order. It is necessary for us to be both human and divine. This quote is profound and I simply rejoice in the choice of words.
Attention and intention are the mechanics of manifestation	Consideration and will can cause creations	Whenever our attention is drawn to something, we become motivated to either obtain or do that specific thing. Any manifestation emerges as a response to a certain stimulus: for the stimulus to be perceived, it needs to be attended to, but in order to have an intention, we also need to direct our consciousness towards it. Thus, <u>manifestation is the product of consciousness.</u>
Our minds extend across space and time as waves in the ocean of the one mind	Humankind as eternal explorers Our minds are interconnected	Thoughts manifest themselves upon the surrounding world, and thus they influence both time and space. Our minds are huge, larger than the Universe, and filled with information

		The human brain can create multidimensional geometric structures Time and space are not objective for the mind All ephemeral identities are manifestations of an undivided unity that contains all of us.
The future will be an astral unveiling of inseparability	Future and present are connected	Our lives are intertwined with an uncertain future that can be unravelled only through decisions and choices. We're indeed part of the cosmos, but opposite ends are pretty far apart - surely that's separation? I understand the quote as a definition of the Future through the lens of astrology but also that of our belongingness to the Universe that covers all things. It is profound through the idea of the Whole.
		the pleasant idea of immortality
I wonder how many people I've looked at all my life and never seen.	It's difficult to get below the surface of most people you encounter in life. degree of attention	This quote refers to our ignorance. Only the truth that we have experienced can give meaning and depth to these quotes. What makes it profound is its simple rhetoric Profound because after you know someone, you forever see them in a different light
Throughout history, humans have been interacting with the dreamscape via bio-electricity	Manifesting emotions in dreams Dreaming is now understood to have neuro chemical factors	the subconscious registers all This cannot be a valid explanation, for I know that the bioelectrical activity of the nervous system is actually decreased during dreaming. History has proven that world-changing ideas appear in dreams
All endings are also beginnings. We just don't know it at the time.	Rebirth Opportunity is everywhere	It relativizes our notions of endings and beginnings, suggesting that the ending of one thing can be seen as a chance for another to begin It is a profound definition of rebirth through death or of the closing of a cycle to make room for another. Our perspective influences how we make sense of a phenomenon. It suggests reframing the notion of an ending, giving it a completely opposite sense
		Bound by their routines, adults forget how to dream and create, and as a result they only pursue goals that have some sort of financial value.
The creative adult is the child who survived.	Most adults lose curiosity; the creative one doesn't. Innocence is the source of creativity	It is profound because it defines creativity in terms of our fundamental inclination towards playfulness. Profoundness comes from illustrating the difficulties of being an adult Well if a child has survived its obviously went through a rather troublesome and problematic past, therefore will be quite the creative thinker as he has been subjected to rather difficult challenging situations and decisions.

A wet person does not fear the rain.	Experience reassures us.	The courage to embrace every experience, regardless of its negative or positive appearance, helps you find balance when your tightrope walking. If I treat fear as my friendly companion, it will empower me.
	First time is the hardest	
Hidden meaning transforms unparalleled abstract beauty.	beauty is a matter of mind	Subtlety and mystery are the result of beauty.
	One can be moved by beauty without understanding it.	Behind the beauty that is perceived without being understood lies a profound mechanism. In this case, profundity stems from the capacity to find meaning through beauty.
	The mind creates perception	A story can transform a photograph.
	Similar emotions	
Art and love are the same thing: It's the process of seeing yourself in things that are not you.	Both are essential	This is a poetic definition of the act of self-discovery through Loving and Creating. It is profound because it encourages us to rediscover ourselves through Love and Art.
	Dialogue between internal and external	
Perceptual reality transcends subtle truth	Reality is subjective	Tangible perception can go beyond some knowledge
	Understanding the world through the senses	A refined affirmation that contrasts the superiority of subtle truths with the vulgar perception of reality. It is profound because it elegantly advises us to search for the Truth.
Today, science tells us that the essence of nature is joy		Nature is the most valuable place where we can be ourselves, where we can think, compare, gain and relax. Through nature we are alive.
	Importance of nature	Given science's objective to generate knowledge and understand the universe, the finding related to joy could be the most soothing of them all.
	Importance of happiness	No, science tells us that energy is the essence of nature. Joy is a form of energy. In this sense, yes. An almost Zen quote (a bit forced though).
		bullshit, its bacteria, quarks and LOVE
Every material particle is a relationship of probability waves in a field of infinite possibilities. You are that		Nicely said. Each being is a context provided by its own manifestation. Quantic profundity.
	You are the outcome of infinite possibilities created by physics.	In a material body, yes, but I do not believe it explains the spiritual part, which attributes even more complexity to Being. Therefore, we are more than that. Moreover, given the field of infinite possibilities we can bravely state that we don't really know who we are in fact. A definition of Being as Potentiality. Profound by defining Being through quantic laws.
	We are all unique	
	Everything is a probability	
Good health imparts reality to subtle creativity.		Health helps us be creative. It is profound because it signals that we need a specific energy to be creative
	Health helps us create, become, act, wish and achieve.	I believe it refers to the health of the whole, to the intention of the being to extend and explore, to the freedom of the soul. This frees the spring of the internal source and calls down divine inspiration. The

		quote refers to the importance of the protagonist's health, first of all, making peace with it and then enjoying the freedom of being.
At the centre of your being you have the answer; you know who you are and you know what you want.	Look within yourself to guide your actions	There is that part of us in which things are already clear. But society blocks us from getting there. It is profound as that place is actually our "center"
	Everybody already knows what they want and are	I have no clue where the center of my being is, let alone what can be found there... It tries to create profundity by using the word `center` (good things are in the center, right?) but it does not persuade me
The unexplainable undertakes intrinsic experiences	Inexplainable things lead to interior questioning.	An experience must not necessarily be understood from an intellectual perspective. Profundity is given by the fact that an experience can have other dimensions, the most profound of them being those that we understand with our whole being.
		Experiencing Mystery and Being within yourself. Profound through optimism and the advice towards life on the inside, believe and do not question.
		This quote tells us that we can live unique experiences when mystery is involved.
The future explains irrational facts.	Many decisions are irrationally taken, based on instincts, without thinking too much about their future effects. the future is full of probabilities	The more we search for an event's explanation, it grinds our psyche so much that we start living intrinsic experiences.
		The future explains the wrongdoings done by the past
		We have faith that evidence which is now only a hunch can be demonstrated in the future
		With time, truths that before seemed impossible are revealed. It is profound because it mentions that change is constant, alongside evolution.
		This explains the flow of time. We are in a rush to find out how the world works, much like children who are curious about the inside of toys, tearing them apart in the process. I believe it is not mandatory to explain everything as everything does not exist at a conceptual level, the truth is a subtle object of knowledge and it cannot be rationalized, otherwise it loses its infinity.

2.4 Discussion

The present study investigated the effect of indirect cues which activate System 2 on how pseudo-profound bullshit is perceived. Two forms of cueing were tested, explaining the items and expecting that the given ratings will have to be justified afterwards, when the items will be explained. Neither of the two conditions should theoretically suggest that some of the items are meaningless, therefore cueing System 2 without augmenting conflict

detection. In the first condition, cognitive effort is required in the process of explaining the meaning of the statements, leading to a clearer representation of information present within it. It was expected that at this point, it would be easier to compare it with already existing beliefs and previously acquired logical principles and therefore conflict detection would be facilitated. People accustomed to detecting conflicts, i.e. those who prefer analytic reasoning as opposed to intuitive reasoning, were expected to perform only slightly better, on the basis of their continuous exercise of comparing novel information to that previously invested with sufficient certainty. In the second condition, the expectation of being asked to justify the given profundity ratings by explaining the perceived meaning of the quotes and the reasons for their profundity did not require cognitive effort but hinted that it will be required subsequently, therefore increasing motivation to invest said effort. Here differences in cognitive style were expected to have a bigger role, but not to the extent that they normally do, as some degree of motivation to invest cognitive effort is provided. The two conditions were implemented as modifications in the indications given to participants regarding fifteen randomly selected bullshit items from Pennycook et al. (2015), of which five were actual Chopra tweets, and the ten motivational items of the Motivational Quotation Scale. The third condition, functioning as a control group, maintained the initial set of indications for the participants.

The collected data indicated that the group which was instructed to first explain the meaning of the quotes and then rate their profundity had lower bullshit receptivity scores than the control condition, while the group that expected to subsequently explain how they understood the quotes, unexpectedly, registered higher bullshit receptivity scores than the control group. While there was a significant difference between the two experimental groups, no significant difference was observed between them and the control group. Differences were significant both in case of the randomly generated items and of the Deepak Chopra tweets, but not in that of the actual motivational items, although the pattern of scores was similar. As a result of the lack of difference in profundity scores of motivational quotes, no differences in bullshit sensitivity were observed.

A possible explanation for the surprising results of the expected justification group, is that the instructions received did not increase motivation to analyse the items but augmented certainty that the items, being presented in a study about profundity, must be indeed profound, therefore decreasing the motivation to invest cognitive effort in the task. Another

explanation is that the participants, knowing that they will have to work through the items again later, conserved resources by not engaging in effortful processing.

As the justification condition required significantly more time to complete, the observed effect could be partially explained by the fact that only highly motivated participants or those accustomed to investing high amounts of cognitive effort completed it. Evidence to support this is found in the reduced number of people who completed this condition. However, the lack of a significant difference between groups in terms of results on the Cognitive Reflection Task rules it out as unlikely, favouring the initially proposed explanation regarding explicit cognitive representations and conflict detection.

A more encompassing explanation of the observed effects takes into consideration the distinction made by Pennycook et al. (2015) between response bias, as the mechanism underlying receptivity, and conflict detection, the proposed mechanism of sensitivity. As sensitivity is computed based on the ratings of the conventionally profound motivational items, it was highly unlikely that the modified instructions would produce significant differences at the level of this variable, changes in both mechanisms being reflected in the receptivity variable. As such, it is possible that the justification instruction boosted conflict detection while the expected justification instruction increased response bias, both being registered as alterations of the receptivity scores, although in opposing directions.

Cognitive style was expected to moderate the relationship between the kind of instruction received and bullshit vulnerability as it is connected to all of the proposed mechanisms introduced by the modified instructions and it also indicates the degree of efficiency in detecting conflict. The analysis revealed that no interaction effect was present, however both factors independently predicted bullshit receptivity. An increase of one unit on the cognitive reflection task is expected to reduce bullshit receptivity by 2.275 points. Requirement of immediate justification is expected to decrease bullshit receptivity by 8.346 points, while postponed justification is expected to increase bullshit receptivity by 5.253 points. The model based on both variables explains 17% of the variance of bullshit receptivity.

To better understand the relationship between cognitive style and bullshit vulnerability, the results of the cognitive reflection task were dichotomised using a median split.

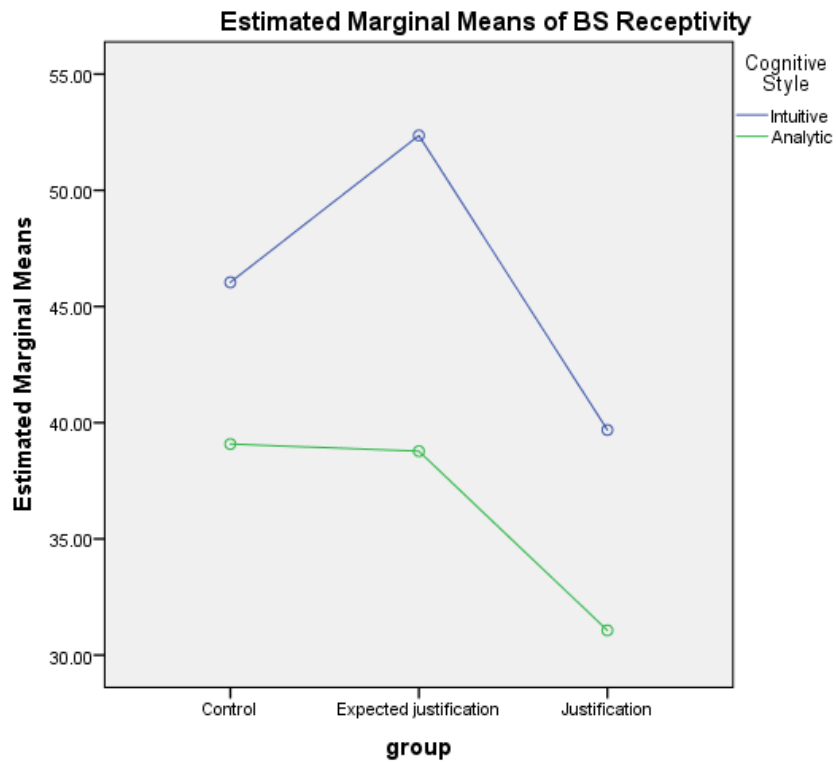


Figure 1. Group differences in pseudo-profound bullshit receptivity separated by cognitive style

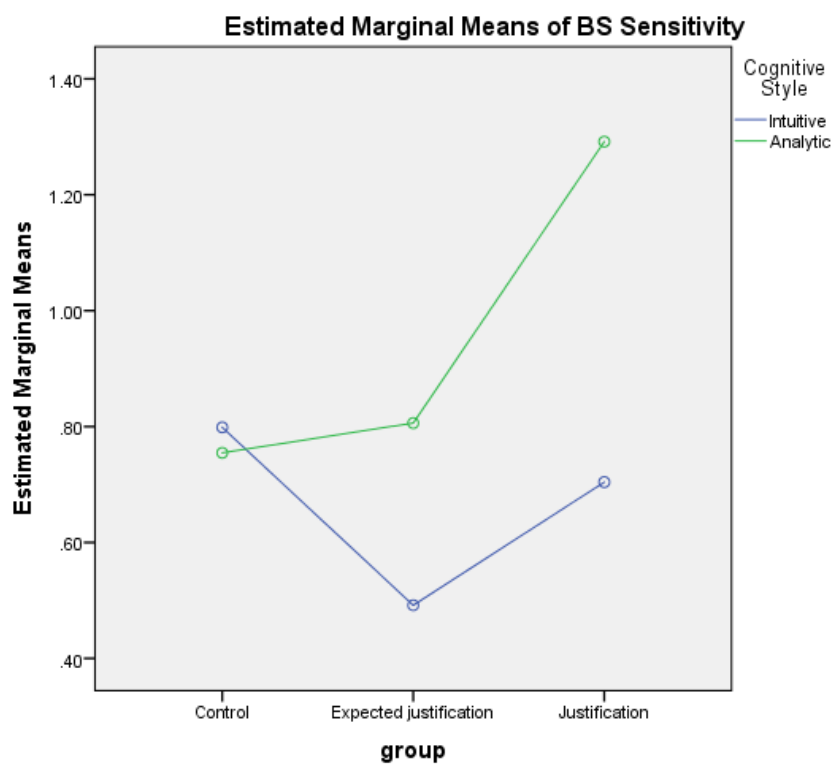


Figure 2. Group differences in pseudo-profound bullshit sensitivity separated by cognitive style

The two figures as well as the associated non-parametric tests provide evidence for the last explanation of how the different instructions produced effects in bullshit receptivity. As can be seen in the first figure, a statistically significant increase in bullshit receptivity can be seen within the expected justification group only in the case of participants with intuitive cognitive style. Similarly, in the second figure, only the intuitive participants show a lowering of bullshit detection scores in the expected justification group. However, this result was not statistically significant. It is therefore most likely that their response bias was strengthened by the expectation. The difference in sensitivity within the justification group was statistically significant, indicating that in the presence of effort (i.e., a stronger activation of the representation of the target stimulus) having an analytic cognitive style increases conflict detection. This could be explained by the presence of a more active representation of beliefs to which the stimuli are compared, thus aiding in conflict detection.

The inability to find a significant interaction effect might either be a result of low statistic power, due to the small sample size, or an indication that other elements pertaining to cognitive style, such as the disposition to double-check or experience with conflict detection through numerous previous exposures, might be more relevant in the context of bullshit vulnerability.

An important aspect that can be generalized to further tests of bullshit vulnerability or attempts to reduce it is that the effect of indirect cues for the need of analytic processing might not be sufficient if cognitive effort is not invested. Investing effort in constructing an explicit representation of the target seems to be a valid strategy for the reduction of bullshit vulnerability. The participants with an analytic cognitive style will probably be more sceptical and double check regardless of the cues while it is more difficult to coerce more intuitive participants into investing cognitive effort and suppressing their intuitive response.

The qualitative analysis presented the main themes and notable explanations that either represented the themes or could not be included within them. Its main purpose is to serve as a starting point for further topics investigating the subjective interpretation of the BRS items. No judgement regarding their profundity or benefit obtained by those contemplating them can be emitted. However, according to Black (1982) and Pennycook et al. (2016), they represent second-order bullshit.

Further research should include different forms of indirect cueing, such as translating the items or grouping them by topic or similarities before deciding on the profundity ratings. It would also be informative to modify the expected justification procedure, asking the participants to actually explain the items and the re-rate them, thus testing the proposed explanation of increased response bias.

Other fertile areas of further studies involve investigating second-order bullshit (as illustrated by Black, 1982) and differences in vulnerability between first-order and second-order as the current study is the first to produce this form of bullshit through the explanations of high-rated bullshit items.

The limits of the study include disproportionate time and effort required between the three groups, the size of the employed sample and inability to clearly distinguish between effects upon response bias and conflict detection, due to how bullshit sensitivity is operationalized.

Chapter 3. Assessing Bullshit Vulnerability

The scale developed by Pennycook et al. (2015) is without any doubt a crucial development in the field of bullshit research, opening up the topic to interdisciplinary work and setting a rigorous example. Given the novelty of the approach, it is necessary to investigate in which other manner bullshit vulnerability can be assessed. One direction is to change the type of bullshit which is evaluated as clearly “pseudo-profound” bullshit does not cover the entire spectrum, some people that present elevated bullshit vulnerability being unreceptive to this particular variety. Another direction is to vary the length of the items in the scale. Opting for longer items allows for the addition of contextual elements, which are emphasized by Buekens and Boudry (2015) as being significant in the process of bullshit detection. Our aim is to examine these possibilities and, while doing so, develop a novel instrument that assesses bullshit vulnerability.

3.1 Defining the type of bullshit under investigation

Taking into consideration that the conceptual delimitation of *bullshit* differs between authors, people and even situations, the idea of producing an instrument that measures a person’s vulnerability to every kind of bullshit is swiftly abandoned. Following the observation made by Pennycook et al. (2015), it is necessary to clarify the variety of bullshit that is targeted for investigation. Pennycook et al. (2015) opted for “pseudo-profound bullshit”, motivating their choice based on its extreme position on the bullshit spectrum and the methodological implications that ensue from it.

While bullshit in general is dangerous to some degree (Frankfurt, 2005), the negative impact of bullshit is unevenly distributed among the several types. Artistic as well as pseudo-profound bullshit are amidst the varieties which pose the least threat, corrupting communication and distorting the truth in ways that cause little damage to the individual or to society. Other varieties of bullshit that could be viewed as high-risk are economic bullshit, leading to a possible financial disaster through the misinformation of the masses (Spicer, 2017), and politic bullshit, in which impressive yet highly inexact reports are used to sway public opinion (see Trump example in Pennycook, 2016).

The present study aims to develop an instrument that assesses vulnerability to one of the most dangerous kinds of bullshit: *medical and health-related bullshit*. The study conducted by Schmidt (2004) portrays the factors that contribute to the danger level of health-related

bullshit: the high number of people that search for and get their medical information on the Internet, the low reliability coupled with constantly increasing popularity of websites offering information related to complementary and alternative medicine and the lack of guidelines and regulations that apply to such websites. Given the status quo, it could prove more viable to educate people than to regulate the content of the Internet.

3.2 Is it really bullshit? Criteria for classification

In transitioning from the extreme point which pseudo-profound bullshit occupies, the issue of whether the content can truly be classified as bullshit becomes increasingly pressing. Pennycook et al. (2015) offer two solutions for this problem, proposed during Study 2, in the context of elaborating their 20-item scale. First of all, they claim that the first 20 items, which were created using a random sentence generator, respect Frankfurt's (2005) definition of bullshit as the method of their construction assures a lack of concern for truth-values and of intended meaning. Secondly, regarding the 10 items extracted from Deepak Chopra's twitter posts, the authors justify their target based on Shermer's (2010) accusations and based on the strong empirical correlations between these items and the randomly generated ones, conclude that the tweets can be reliably classified as instances of pseudo-profound bullshit. In short, their main argument for bullshit classification is the lack of meaning embedded in the process of randomly generating sentences.

There are, however, a few inconveniences to working with randomly generated sentences. One would be the constrain to have short items, as in the case of longer items, consistency is hard to maintain and, based on the complexity of the employed algorithm, syntax can become obviously repetitive. Both of these outcomes represent strong cues that might trigger facile detection and thus distort the results. Also inconvenient is that in order to be able to differentiate bullshit from meaningful phrases, the receiver often requires domain-specific knowledge. To illustrate this, we have compiled a set of randomly generated sentences using different algorithms and databases pertaining to various domains and a collection of actual sentences extracted from either the documents used in compiling the databases or domain relevant documents. The following table presents samples of the two sets, containing both randomly generated sentences and control items.

Table 4. *A comparison of different randomly generated sentences and control items from various domains*

Medical domain	
1. Gastrointestinal side effects are common in patients receiving metformin.	2. Lesions of the cortex are observed alongside comorbidity in fibromyalgia dementia.
3. After receiving immunization, the patient's paraesthesia got better	4. Visible necrosis is preferable to the start of hyperplasia symptoms
Landscape urbanism projects	
1. micro landscape installation	2. enhance ubiquitous peripheries
3. transform fluid communities	4. redefine heterogeneous users
Corporate domain	
1. The Staff has also determined that there has been a substantial change in circumstances since the Commission's certification justifying these changes and that the proposed changes would be beneficial by enabling D-Center to support resource planning for the summer of the following year.	2. The information-age customer experience culturally leverages a knowledge transfer, while the standard-setters achieve a transitional portfolio shaping by expanding boundaries. The team players significantly deploy a working methodology.
3. The thought leader proactively leverages the ingenious evolutions by thinking and acting beyond boundaries; nevertheless, a high-margin, intra-organisational, corporate identity motivates the Chief Operations Officer. A goal motivates the market thinker	4. Our better-than-planned flow charting drives the key representatives, whilst the sales manager consistently addresses our soft cycle issues on-the-fly. Brand images prioritize the innovators. A task-oriented, state-of-the-art and organizational enterprise content management boosts the correlations.
Contemporary classical composers describing their work	
1. Rather than set up small engines of motivic materials and let them run free in a kind of random play of counterpoint, I used the fabric of continually repeating cells to forge large architectonic shapes, creating a web of activity that, even within the course of a single movement, was more detailed, more varied, and knew both light and dark, serenity and turbulence. I was never a composer to play by the rules my predecessors had mapped out for me – even if those rules were all about opening up musical freedoms	2. One of my most melodic influences is the concept of challenging passive movements, which deconstructs my vision and causes my tone-row to become somewhat Wagnerian. The pursuit of flowing study-illusions to superimpose the mostly-progressive paradigm is a key focus of my monophonic study. I build upon the so-called 'unities of experimental processes', and transform them into what I term 'modernistic-post-unified oscillation-resonances', which I see as a distinct improvement

Note: Control – Item 1; Randomly generated – Items 2-4

With the exception of the first item in every category, these are all results of random sentence generators. The full collection and information regarding its generation can be found in the first addendum. A person that has some specialized knowledge in the field can correctly classify some if not most of the items, yet the man on the Clapham omnibus¹ stands no actual chance. An instrument composed of such items could, at best, be used to test people that are supposed to have a certain degree of familiarity with the topic.

The items used by Pennycook et al. (2015) avoid this problem by focusing on a general topic that requires no specialized knowledge (i.e. profundity), which allows for vaguer “buzzwords”, open-ended signifiers that permit multiple meanings or do not have a clearly defined meaning (e.g. Consciousness, quantum).

Within the clinical domain, such terms are mostly encountered in the areas related to complementary and alternative medicine (Ernst & Singh, 2008). Common buzzwords include “traditional”, “ancient”, “natural”, “holistic approach”, “emergent system”, “integrative”, “cutting-edge treatments”, “nontoxic”, “cleansing”, “dietary supplements”, “herbal”, alongside terms suggestive of an East-West dichotomy and terms rooted in vitalism (e.g. vital energy in homeopathy, prana in Ayurvedic medicine, vis medicatrix naturae in naturopathy, chi or ki in Traditional Chinese Medicine and acupuncture).

These buzzwords, unlike those found in Pennycook et al. (2015), do not intend to create vagueness in terms of semantic meaning, their referent tending to be usually easily identifiable. Their employment aids in establishing confusion regarding etiopathogenic elements, suggesting competing explanations for the cause of the targeted condition and different models regarding its development, culminating with the suggestion of a radically different method of treatment or even the lack of need for an intervention.

Inquiring separately about treatments, causes or alternative development models of diseases, offers little promise for bullshit vulnerability assessment, even when the items are saturated with buzzwords. A person’s position towards the item “Liver cancer cells are naturally destroyed by the integrative panchakarma treatments based on the ancient practice

¹ The man on the Clapham omnibus is a hypothetical ordinary and reasonable person, used by the courts in English law where it is necessary to decide whether a party has acted as a reasonable person would – for example, in a civil action for negligence. The man on the Clapham omnibus is a reasonably educated, intelligent but nondescript person, against whom the defendant's conduct can be measured.

of Ayurvedic medicine” signals little more than what previous knowledge is available on the topic. It offers minimal information about the bullshit vulnerability of the participants that are uncertain about the principles or have never encountered Ayurvedic medicine, signalling only the extremes of the spectrum. Such an approach would lack any increment in validity in comparison to Lindeman’s (2011) belief in complementary and alternative medicine scale, which directly assesses trust in eleven forms of CAM. It is therefore essential, especially when investigating the dimension of bullshit detection, to include sufficient information regarding both the therapeutic package and its underlying theory, specifying what factors are deemed responsible for the outset of the condition and the mechanisms through which the intervention addresses these factors.

Given these considerations, the items of the proposed medical and health-related bullshit scale should be designed to be three to four paragraphs long, aiming to include sufficient contextual information in order to facilitate the adequate assessment of bullshit vulnerability, rather than previous encounters with terms or topics.

As previously stated, lengthy items demonstrate reduced compatibility with the process of random generation. A fine point is made by the “official inspiration generator for alternative medicine” (Denayer, n.d.). It is an online tool that generates multi-paragraph, syntactically correct text using complementary and alternative medicine buzzwords. Its structure includes opening statements, usually describing where the therapy originated, its age and the targeted ailments; middle statements that provide proof of validity, involving fictional, pompous-sounding personalities, universities or research labs; elements describing the approach, this being similar to what was previously defined as underlying theories (assumptions and principles); and information regarding application and duration, congruent with our objective of describing the therapeutic package. The results produced by the generator are initially satisfying but its reliance on pre-defined lists of sentences prevents it from being sufficient as regularities become apparent when exposed to a larger sample of such generated text. Another issue is the limited information provided about the actual intervention and how it is integrated within the proposed theoretical approach. However, this tool supplies a foundation that can be used to assess whether other items can be classified *bullshit*.

A starting point in collecting information on which to construct the items is given by Berezow (2017). It features a classification of science and health news outlets based on

fundamental trustworthiness, a measure portraying tendency to deliver information that is evidence-based and ideology-free, and story quality, rating both sensationalism and scope of interest. Elements that are scored lowest in both dimensions satisfy the criteria of bullshit as the reports are unconcerned with the truth-value of the presented information (evidence plays little to no role) and aim to impress rather than inform (i.e. high degrees of sensationalism). Novella (2010) describes one of sources as an alternative medicine website that “promotes every sort of medical nonsense imaginable”. Given the massive amount of such claims issued for each of the four outlets present in the “pure garbage” category of Berezow (2017), they qualify as sources for medical and health-related bullshit item.

3.3 The essence of health-related bullshit. Clarifications regarding complementary and alternative medicine

Complementary and alternative medicine is currently used as an umbrella term that reunites a diverse array of therapeutic packages and diagnostic techniques which are non-mainstream. Such interventions emphasise a holistic approach towards healthcare and are not included in standard healthcare, not figuring in the curriculum of medical universities (Ernst et al., 2008).

It is important to distinguish between complementary treatments, which are used together with conventional medicine, and alternative treatments, designed to be used instead of mainstream medicine. The US National Centre for Complementary and Alternative Medicine (NCCAM) classifies CAM in five categories: Alternative medical systems, which are complete systems of theory and practice (e.g. homeopathy, naturopathic medicine, Ayurveda); Mind-body interventions, based on the idea that the mind can affect bodily functions and symptoms (e.g. meditation, prayer, mental healing); Biologically-based therapies, using substances found in nature (e.g. food, herbs, vitamins); Manipulative and body based methods (e.g. osteopathic manipulation, massage); and Energy therapies, involving the use of energy fields that surround and penetrate living bodies (e.g. Reiki, Qigong).

The main myth associated with CAM is that it is non-scientific. While it is true that negative results have been observed for some approaches, as long as an intervention has not been tested, no claim regarding its effectiveness can be made. In this regard, it could be considered that CAM is struggling, much like conventional medicine, to be scientific. The

topic becomes more problematic when examining the theories that explain how various CAM interventions are supposed to work. Associated issues include failure to make use of the principle of parsimony and contradictions of well-established principles (e.g. water memory and the ephemeral nature of water ultrastructure, Cowan et al., 2005).

Our interest in CAM is not related to its scientific status, but rather to the amount of *bullshit* associated with it. Complementary and alternative medicines are not per se *bullshit*, but they represent a copious source for it. In order to understand the relationship between the two and thus gain precious insight regarding how to develop items that assess vulnerability to medical and health-related bullshit, it is mandatory to examine the reasons for which people are attracted towards CAM.

The Oxford handbook of complementary medicine (Ernst et al., 2008) separates reasons for using CAM in push and pull factors. Dissatisfaction with conventional medicine and desperation are included in the ‘push’ category. Many reasons can be elicited for dissatisfaction: treatment lack of efficiency, presence of adverse effects, low quality of communication with the doctor. These do not, however, justify uncritical reception of alternatives, if anything, it should indicate preoccupation towards the truth. Regardless, it is important to control for dissatisfaction with the medical system in our analysis and observe whether it also explains health-related bullshit vulnerability. The relationship between desperation and bullshit vulnerability deserves a separate research project and will not be addressed at the moment, given that the selected sample is formed of healthy participants. Moreover, Ernst and his collaborators (2008) suggest that patients that turn to CAM as a last resort differ significantly from other users, mainly because the former maintain faith in the principles of conventional medicine. The factors from the ‘pull’ category are directly connected to our research topic as these are exploited in the context of *bullshit*, constituting the targets of the previously presented buzzwords. One factor is philosophical congruence with the fundamental principles of CAM. The main elements of congruence are: the existence of spiritual dimensions, preference of natural treatments, emphasis on holism and intuitively acceptable concepts. It is such aspects, that naturally fall within the realm of personal belief and preference, which serve as starting points for the exploitation of bullshit vulnerability, representing targets for the bullshiter’s overapplication of the charity principle. As many forms of CAM complement intuitively acceptable principles (e.g. existence of vital energy) with sophisticated philosophies and complex systems that rely on long traditions (e.g. numerous meridians which transport the

vital energy, which when blocked constitute the cause for all manners of diseases), there are plenty of resources to apply the rest of the obscurantist algorithm described by Buekens and Boudry (2014): appeal to authority, use vague signifiers, eventually trigger sunk cost fallacy. The buzzwords are employed to twist existing beliefs, from preference of natural treatments to the idea that anything which is natural is safe and that which is not natural must be dangerous, and therefore justify alternative models of health and healing in the absence of evidence, promoting disregard towards concern for truth. This model implies that bullshit vulnerability interacts with CAM philosophical congruence and in order to test it, it is necessary to assess both congruent elements and distorted beliefs based on them, which are targeted by the introduction of buzzwords. Another factor from the ‘pull’ category is locus of control. Individuals that opt for CAM treatments show increased responsibility for their own health and recovery, and desire to be actively involved in the treatment process (Schützler & Witt, 2014). Locus of control is, therefore, the last variable that needs to be controlled for in our attempt of discriminating between preference for CAM and medical bullshit vulnerability.

Having clarified that CAM is not (necessarily) *bullshit* but that widespread *health-related bullshit* mostly occurs in connection to CAM, the only remaining aspect is to specify the characteristics of health-related bullshit.

Based on the potential for harm, two types of health-related bullshit vulnerability are proposed: complementary bullshit vulnerability and alternative bullshit vulnerability. Common to both is Frankfurt’s (2005) idea regarding a lack of concern for connection to truth. An operationalization of this principle is reflected in the lack or disregard of actual evidence and its substitution by less logical justifications of knowledge (e.g. anecdotal evidence, invoking “secret” evidence). As Pennycook et al. (2015) put it, the set goal is to impress rather than inform, and therefore the value and importance of specific, particular cases that confirm the bullshiter’s position are overestimated, especially through emotionally loaded arguments. As the objective is not to inform, presented data is far from being neutral, solely depicting the bullshiter’s opinions and intolerantly rejecting, if mentioning at all, anything else (as exemplified by Postman (1969) in the case of bigotry). The justifications employed are based on eminence, vehemence or providence, corresponding to the remaining three categories of bullshit described by Postman (1969): pomposity, inanity and superstition. The least harmful category of medical bullshit, termed complementary bullshit, advocates therapeutic packages without specifying different

ethiopatogenic elements, implicitly or explicitly admitting to symptomatic treatments that do not contradict the existing models proposed by conventional medicine. The essence of alternative health-related bullshit is that it encourages individuals to disregard or discontinue conventional treatment either by cultivating distrust and alienation of the medical system or the established authorities or by presenting competing hypothesis regarding the cause of the targeted disease (e.g. cancer is caused by negative emotions) with unwarranted certainty. The manner in which distrust in conventional treatments is achieved is another possible variable in our proposed model. Buzzwords are present in both forms of bullshit, playing however different roles. In the case of the former, buzzwords target congruence with philosophical ideas or preferences (e.g. certain intervention is natural) while in the case of the latter, buzzwords are employed in order to introduce distorted beliefs which originate from philosophical ideas related to CAM (e.g. certain intervention is natural and therefore safe).

3.4 The health-related bullshit vulnerability scale [HBVS]. Method

3.4.1 Participants

Participants were recruited in two Romanian high schools, targeting eleventh and twelfth grade pupils, and one Romanian university, addressing first year students. A short oral presentation was organized for each class to inform them about the (cover-up) goal and procedures, collecting the email addresses of those interested in participating. The 222 collected email addresses were randomly distributed within 3 groups and were sent the corresponding link required to take part in the study. Ninety-one participants (31 in the first group, 28 in the second, 32 in the third) responded to the initial email, seventy-six (25 in the first two groups and 26 in the third) completed the second session, seventy-three (24 in the first two groups and 25 in the third) completed the third session and 71 participants (48 female, $m_{age} = 19.56$; $sd_{age} = 7.17$) completed the fourth session, taking part in the entire study (24 in the first and third groups and 23 in the second).

3.4.2 Materials

Summing the elements previously described, the instrument designed to measure vulnerability to medical and health-related bullshit contains 10 articles, each focusing a different affliction, presented in one of three forms (Addendum 2). Reliable articles collected from trustworthy medical outlets are presented in the first form (no bullshit – NB). Randomly generated articles and those recovered from outlets ranked ‘pure garbage’

in Berezow (2017) are presented in the second (complementary bullshit – CB) and third forms (alternative bullshit – AB), being minimally modified as to reflect the characteristics described earlier. Most information retrieved from these sources fit one of the two categories of bullshit and were initially placed in the corresponding form, being then modified to accommodate the other form. Articles that were initially deemed to respect the criteria for alternative bullshit were converted to fit the complementary bullshit form by removing elements that encouraged disregard of conventional treatments and alternative etiopathogenic models, while similar elements were added from relevant sources to the articles that were classified as containing complementary bullshit in order to generate the alternative bullshit form. Four of the ten items are randomly generated using Denayer's (n.d.) website, while the other six are evenly split between alternative medical systems and biologically based therapies. Mind-body interventions as well as energy therapies were not included as bullshit vulnerability in these cases might significantly overlap with other types of bullshit (e.g. pseudo-profound bullshit). The first and last paragraphs of the randomly generated items were selected from source relevant to the topic or created to fit the context of the randomly-generated intervention.

Respondents were asked to rate two dimensions, trustworthiness (how reliable and accurate the participants deem the presented information) and impressiveness (the degree to which the information is intended to produce powerful emotional responses).

The items were pretested on a sample composed of 15 psychology bachelor and master students (9 female) with ages between 19 and 24 ($m = 21.73$; $sd = 1.79$). The three subscales presented adequate internal consistency (Cronbach's Alpha = .811 for the Non-BS subscale, Cronbach's Alpha = .842 for the Complementary BS scale and Cronbach's Alpha = .833 for the Alternative BS scale). Two randomly generated items and two items collected from relevant websites were selected for the current study as answering ten items within a session required a significant amount of effort on behalf of the participants. Items were selected based on the highest observed detectability (differences in ratings between non-bullshit forms and bullshit forms). This was intended to decrease the chance of a false positive, increasing however the chance of a false negative (portraying a person that actually has a high health bullshit vulnerability as having lower scores). Thus, the results of the following study will address rather extreme points of the health-related bullshit spectrum.

Complementary health related bullshit receptivity (CBR) score was computed by summing trustworthiness and impressiveness ratings on CB forms. Alternative health related bullshit receptivity (ABR) score was similarly computed based on the ratings of AB forms.

Health related bullshit sensitivity scores were computed for both complementary (CBD) and alternative (ABD) bullshit by subtracting receptivity scores from the sum of trustworthiness and impressiveness ratings of NB forms. This variable measures the dimension of bullshit detection, as proposed by Pennycook et al. (2015).

Representing a conceptually proximal variable, pseudo-profound bullshit receptivity (BSR) is assessed using the 20-item scale designed by Pennycook et al. (2015). Pseudo-profound bullshit sensitivity (BDS) is computed by subtracting receptivity score from the Motivational Quotations Scale (MSQ).

Cognitive style was measured using the seven-item version of the Cognitive Reflection Task (CRT - Toplak, West, & Stanovich, 2014), an extension of the three-item The Cognitive Reflection Task (Frederick, 2005). The seven-item version retains the basic structure of the previous version, presenting mathematical word problems that cue an incorrect intuitive response which needs to be examined and disregarded in order to reach the correct answer.

Several CAM related measures were assessed. The scale designed by Lindeman (2011) was used to measure belief in CAM and CAM use. The scale presents twelve methods (e.g. homeopathy, spiritual healing, oriental medicine) and asks the participants to rate how much they believe in them on a 5-point scale, ranging from 1 – do not believe at all; to 5 – fully believe, with the option of 0 – cannot say (B CAM). Participants are also asked to specify how often they resorted to each of the twelve methods during the course of the last year, thus evaluating CAM use (U CAM). Attitude towards CAM was assessed using 12 items (Addendum 3), nine items evaluated convergence with CAM philosophy (belief in the existence of spiritual dimensions/life force, preference for natural treatments, emphasis on holism and preference for intuitively acceptable concepts) while the other twelve tested for the presence of dysfunctional beliefs related to CAM. The measure presents excellent internal consistency (Cronbach's Alpha = .924 for the entire scale). The twelve items are based on misrepresentations which are usually targeted by buzzwords. Each item was scored on a scale ranging from 1 – do not believe at all to 5 – believe fully. The “attitude towards CAM” (A CAM) variable was computed by subtracting the summed ratings for

the distorted belief items (D CAM, Cronbach's Alpha = .866) from the summed ratings of the convergence with CAM philosophy items (P CAM, Cronbach's Alpha = .795). Higher values indicate a critical openness towards CAM, lower values suggesting an uncritical attitude towards CAM. Conspiracy ideation was assessed using the Generic Conspiracist Beliefs scale (Brotherton, French, & Pickering, 2013), a 15-item measure to which responses were given on the following 5-point scale: 1 - Definitely not true, 2 - Probably not true, 3 - Not sure/cannot decide, 4 - Probably true, 5 - Definitely true. Conspiracy ideation is hypothesised to correlate with alternative health-related bullshit vulnerability.

Internal health locus of control was measured using the Multidimensional Health Locus of Control (HLC) scale (Wallston, Strudler Wallston, & DeVellis, 1978). The scale is formed of 18 items that examine beliefs regarding what influences health. Three independent dimensions are evaluated: Internal Belief (Behaviours and choices influence health); Chance Belief (Fate or chance influence health); and Powerful Others Belief (Health is influenced by physicians or family members). Items are scored on a 1 to 6 Likert scale, ranging from Strongly Disagree to Strongly Agree.

Distrust of conventional medicine (DIS) was assessed using the following two questions: (1) "How much do you trust the medical system?"; (2) "How much do you trust conventional medicine?". The questions were rated on a 4-point scale ranging from 1 – Complete distrust to 4 – Complete trust. A general score was computed by summing the ratings of the two questions.

Table 5. *Conceptually relevant variables*

Variable	Measurement	Abbreviation
Pseudo-profound bullshit receptivity	20-item Bullshit Receptivity Scale (Pennycook et al., 2015)	BRS
Pseudo-profound bullshit sensitivity	Motivational Quotation Scale score – BRS (Pennycook et al., 2015)	BDS
Cognitive Style	7-item Cognitive Reflection Task (Toplak, West, & Stanovich, 2014)	CRT
Belief in CAM	Complementary and Alternative Medicine Scale (Lindeman, 2011)	B CAM

CAM use	Complementary and Alternative Medicine Scale (Lindeman, 2011)	U CAM
Presence of dysfunctional CAM beliefs	12 items (Addendum 3)	D CAM
Attitude towards CAM	Convergence with CAM philosophy score (9 items, addendum 3) – DCAM	A CAM
Conspiracy Beliefs	Generic Conspiracist Beliefs scale (Brotherton, French, & Pickering, 2013)	GCB
Internal health locus of control	Multidimensional Health Locus of Control scale (Wallston, Strudler Wallston, & DeVellis, 1978)	HLC
Distrust of conventional medicine	2 questions (Chapter 2.4)	DIS

3.4.3 Procedure

A coverup story was considered necessary as informing the participants about the topic of the research might cue detection (Pennycook, 2016). Participants were informed that the objective of the study is to assess the effect of reader feedback on the information contained within medical and health-related articles and that the articles were written by journalism undergraduates, which will weekly rewrite them based on the received feedback.

In order to expose participants to all forms of every item and assess differences between ratings, a within-subject research design was selected. The interval between assessments was set at one week, under consideration that this period will prove sufficient to prevent influences of previous information on participant ratings. In the first three weeks participants rated different forms of the articles included in the health-related bullshit scale and short additional scales, selected so that the purpose of the study will not become transparent to the participants, while on the fourth week participants completed all remaining measures of the conceptually relevant variables. Participants were separated into

three groups, each having the forms presented in different sequence to control for order effects.

Table 6. *Experimental design*

	Group 1			Group 2			Group 3			All groups
Week	1	2	3	1	2	3	1	2	3	4
Item 1 – Asthma	NB	AB	CB	CB	NB	AB	AB	CB	NB	BRS
Item 2 – Stress	CB	NB	AB	CB	AB	NB	AB	NB	CB	MQS
Item 3 – Gout	CB	NB	AB	AB	NB	CB	CB	AB	NB	B CAM
Item 4 – HIV/AIDS	AB	CB	NB	AB	NB	CB	CB	NB	AB	U CAM
	CRT			HLC			D CAM			GCB
							P CAM			
							DIS			

Note. NB – no bullshit form; CB – complementary bullshit form; AB – alternative bullshit form; BRS – Bullshit Receptivity Scale; MQS – Motivational Quotation Scale; CRT – Cognitive Reflection Test; GCB – General Conspiracy Belief scale; HLC – Multidimensional Health Locus of Control scale; DIS – Distrust of conventional medicine questions; B CAM – Belief in CAM; U CAM – Use of CAM; D CAM – Dysfunctional attitudes towards CAM; P CAM – Philosophical convergence with CAM beliefs

3.4.4 Hypotheses

The main hypothesis is that NB forms will have higher trustworthiness and lower impressiveness scores than both CB and AB forms. This is an indicator of construct validity as bullshit is expected to be distinguishable on both dimensions. A second hypothesis is that AB forms will have higher impressiveness scores than CB forms. As AB forms actively discourage the use of actual medical treatments and propose competing etiopathogenetic mechanisms, which are mostly done by discrediting conventional medicine through emotionally salient language and metaphors, this result would indicate that the impressiveness dimension corresponds to actual ability to detect emotional intent.

Positive correlations between the two forms of bullshit (i.e., pseudo-profound and health-related) are expected, sensitivity variables being hypothesised to have a stronger association than receptivity variables. This offers information towards establishing if the construct measured by the HBVS can be considered as part of the bullshit spectrum.

Cognitive style is expected to present negative correlations with bullshit receptivity and positive correlations with bullshit sensitivity, as proposed and observed by Pennycook et al. (2015).

CAM belief and CAM use are hypothesised to be positively associated with health-related bullshit receptivity. Attitude towards CAM is expected to correlate with health-related

bullshit detection but not with receptivity as it suggests a high presence of functional attitudes which act as established beliefs, providing sources for the conflict detection process on which bullshit sensitivity is based. More dysfunctional CAM beliefs are hypothesized to be encountered in the case of high health-related bullshit receptivity and low health-related bullshit sensitivity.

Internal health locus of control is expected to be associated with both forms of health-related bullshit receptivity. However, this correlation is expected to disappear when controlling for CAM variables, as these are the only reasonable explanation for the association between the two variables.

Distrust in medicine is expected to be associated with alternative bullshit receptivity and, less powerfully, with complementary bullshit receptivity. Although when controlling for the presence of dysfunctional CAM beliefs, these correlations are expected to be significantly reduced.

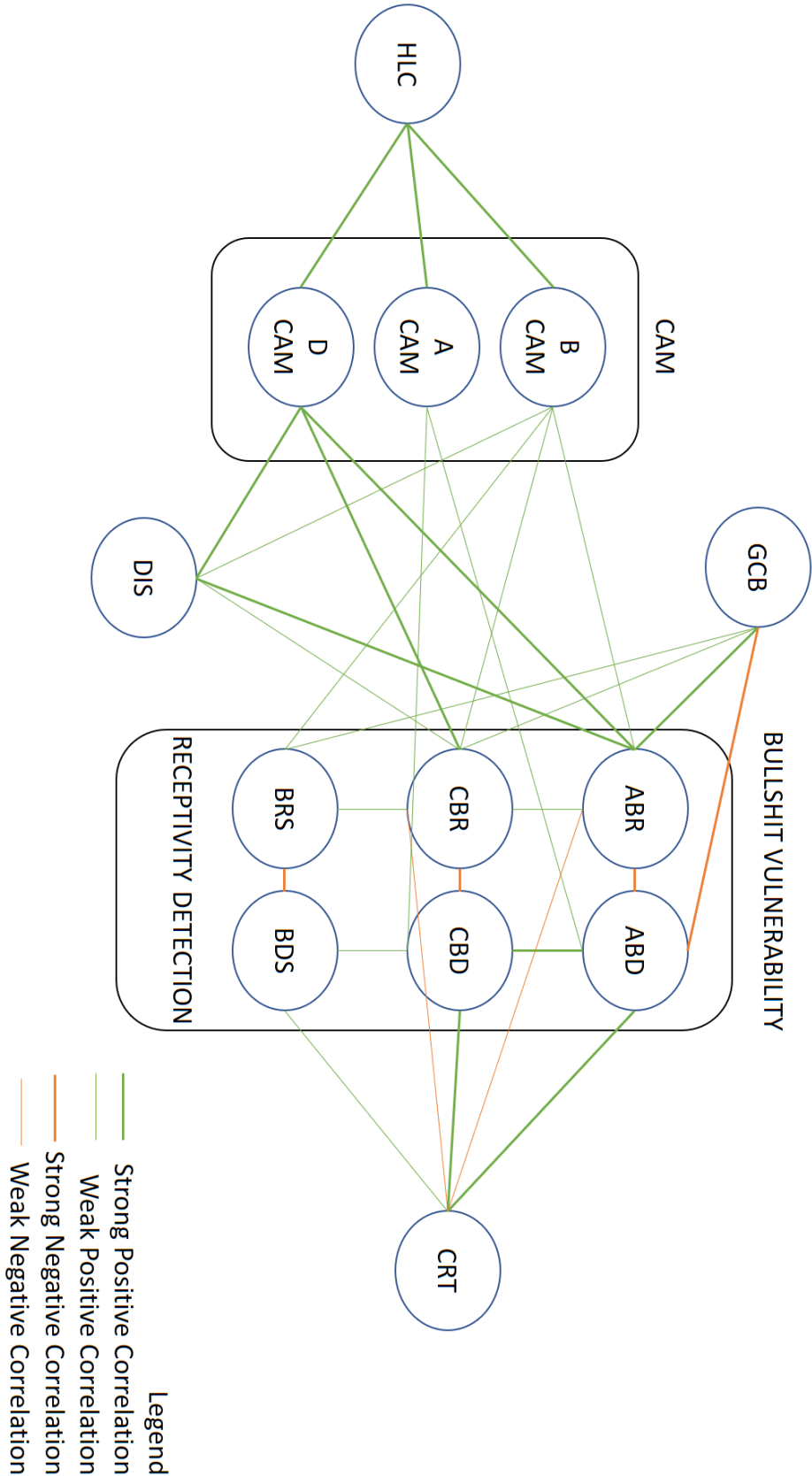


Figure 1. Expected correlations between variables

3.5 Results

Table 7. *Rotated Component Matrix*

Component	Impressiveness items			Trustworthiness items	
	1	2		1	2
Gout NB	.868	-.024	AIDS AB	.836	-.003
Asthma NB	.850	.072	Asthma AB	.753	.177
AIDS NB	.833	.174	Gout CB	.751	-.082
Stress NB	.736	.136	Stress CB	.723	.146
Asthma CB	.671	.440	Asthma CB	.680	.444
Gout AB	-.626	.596	Gout AB	.670	-.008
Stress CB	.487	.484	AIDS CB	.644	.320
Stress AB	.260	.219	AIDS NB	-.030	.814
AIDS AB	-.341	.745	Gout NB	.062	.777
AIDS CB	.423	.716	Stress NB	.033	.611
Asthma AB	.111	.684	Asthma NB	.116	.562
Gout CB	.196	.404	Stress AB	.215	.300

Note. major loadings for each item are bolded

Two principal components analysis (PCA) were applied on the 24 items measuring health-related bullshit vulnerability, the first on trustworthiness items and the second on emotional intention (i.e., impressiveness) items. The suitability of each PCA was assessed prior to analysis. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0.3 in both cases. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.82 with individual KMO measures all greater than 0.61 in the case of trustworthiness items and 0.80 with individual KMO measures all greater than 0.53 in the case of emotional intent items, both having classifications of 'meritorious' to 'marvellous' according to Kaiser (1974). Bartlett's Test of Sphericity was statistically significant ($p < .0005$), indicating that the data was likely factorizable.

PCA revealed two components that had eigenvalues greater than one and which explained 34.65% and 16.59% of the total variance when examining trustworthiness and three components which explained 37.23%, 19.34% and 9.23% of the total variance in the case of emotional intent. However, visual inspection of the scree plots indicated that two components should be retained in both cases (Cattell, 1966). Therefore, two components were retained for both trustworthiness items and emotional intent items.

The two-component solution explained 51.24% of the total variance of trustworthiness and 56.57% of the total variance of emotional intent. A Varimax orthogonal rotation was employed to aid interpretability. The rotated solutions exhibited 'simple structure' only in the case of trustworthiness (Thurstone, 1947). The interpretation of the data was partially

consistent with the dimensions the scales were designed to measure with strong loadings of non-bullshit forms on Component 1, and bullshit forms, not differentiated between alternative or complementary, on Component 2. Component loadings and communalities of the rotated solution are presented in Table 7.

The 24-item Health-Related Bullshit Vulnerability scale presents an acceptable level of internal consistency as indicated by a Cronbach's Alpha of .765. The internal consistency of both the trustworthiness scale and the emotional intent scale is high, demonstrated by a Cronbach's Alpha of .824, and respectively one of .782.

Table 8. *Descriptive statistics*

	N	Min	Max	Mean	Std. Dev	Skewness	Std. Error	Kurtosis	Std. Error
NB	73	9.00	20.00	16.2466	2.62351	-.523	.281	-.273	.555
NB_em	73	4.00	20.00	10.4521	4.73474	.502	.281	-.753	.555
CBR	74	4.00	19.00	13.0946	3.43299	-.569	.279	-.274	.552
CBR_em	74	4.00	19.00	10.3649	3.65114	.113	.279	-.879	.552
ABR	73	4.00	19.00	11.9178	3.37784	-.232	.281	-.347	.555
ABR_em	73	7.00	20.00	12.9178	3.32814	-.117	.281	-1.051	.555
CBD	73	-4.00	13.00	3.1781	3.72806	.566	.281	-.005	.555
CBD_em	73	-10.00	9.00	.0411	3.87814	.021	.281	-.020	.555
ABD	73	-3.00	13.00	4.3288	3.85521	.399	.281	-.482	.555
ABD_em	73	-14.00	13.00	-2.4658	6.19382	.411	.281	-.260	.555
CBR_total	74	14.00	36.00	23.4595	4.69389	.276	.279	.019	.552
ABR_total	73	12.00	34.00	24.8356	4.98891	-.129	.281	-.403	.555
CBD_total	73	-6.00	22.00	3.2192	5.52833	1.075	.281	1.752	.555
ABD_total	73	-10.00	26.00	1.8630	7.57062	1.284	.281	1.943	.555
CRT	91	.00	7.00	3.4176	2.39010	.034	.253	-1.293	.500
IHLC	76	14.00	29.00	22.8553	3.52403	-.605	.276	-.048	.545
CHLC	76	6.00	19.00	12.5658	3.02582	-.031	.276	-.619	.545
PHLC	76	6.00	27.00	16.6842	4.26837	-.234	.276	-.243	.545
HLC	76	32.00	68.00	52.1053	6.82853	-.646	.276	.882	.545
PCAM	73	11.00	42.00	28.5479	6.55964	-.373	.281	.265	.555
DCAM	73	16.00	49.00	33.6164	8.42389	-.040	.281	-.744	.555
ACAM	73	-.69	1.67	.3706	.49975	.245	.281	-.038	.555
BRS	71	30.00	137.00	86.0141	21.74297	-.307	.285	.177	.563
GCB	71	16.00	71.00	43.5493	12.57184	-.285	.285	-.504	.563
BDS	71	-1.73	2.80	.7230	.92838	-.469	.285	.092	.563
BCAM	71	.00	52.00	23.6197	10.89740	.346	.285	-.130	.563
UCAM	71	11.00	47.00	18.6056	7.51090	1.720	.285	3.341	.563
DIS	73	1.00	4.00	2.4452	.61555	.122	.281	.269	.555

Note. NB = Non-bullshit items trustworthiness score; NB_em = Non-bullshit items emotional intent score; CBR = Complementary Bullshit Receptivity; CBR_em = Complementary Bullshit Emotional Receptivity; CBR_total = General Complementary Bullshit Receptivity (CBR + CBR_em); ABR = Complementary Bullshit Receptivity; ABR_em = Complementary Bullshit Emotional Receptivity; ABR_total = General Alternative Bullshit Receptivity (ABR + ABR_em); CBD = Complementary Bullshit Detection (N – CBR); CBD_em = Complementary Bullshit Emotional Detection (N_em – CBR_em); CBD_total = General Complementary Bullshit Detection (CBD + CBD_em); ABD = Alternative Bullshit Detection (N – ABR);

ABD_em = Alternative Bullshit Emotional Detection (N_em – ABR_em); ABD_total = General Alternative Bullshit Detection (ABD + ABD_em); CRT = Cognitive Reflection Test; IHLC = Internal Health Locus of Control; CHLC = Chance Health Locus of Control; PHLC = Powerful others Locus of Control; HLC = Health Locus of Control (IHLC + CHLC + PHLC); PCAM = Philosophical convergence with the principles of CAM; DCAM = Dysfunctional CAM beliefs; ACAM = Attitude towards CAM; BRS = Pseudo-profound bullshit receptivity; GCB = General Conspiracy Beliefs; BDS = Pseudo-profound bullshit sensitivity; BCAM = Belief in CAM; UCAM = CAM use; DIS = Distrust in Medicine

Table 9. *Shapiro-Wilk test of normality*

	Shapiro-Wilk		
	Statistic	df	Sig.
CRT	.903	71	.000
IHLC	.953	71	.009
CHLC	.977	71	.208
PHLC	.980	71	.335
HLC	.969	71	.073
PCAM	.979	71	.288
DCAM	.975	71	.178
ACAM	.989	71	.775
BRS	.985	71	.534
GCB	.977	71	.212
BDS	.978	71	.242
BCAM	.986	71	.633
UCAM	.831	71	.000
DIS	.943	71	.003
NB	.945	71	.004
NB_em	.939	71	.002
CBR	.958	71	.018
CBR_em	.969	71	.079
ABR	.978	71	.235
ABR_em	.949	71	.006
CBD	.964	71	.041
CBD_em	.986	71	.632
ABD	.964	71	.041
ABD_em	.977	71	.226
CBR_total	.977	71	.203
ABR_total	.968	71	.062
CBD_total	.982	71	.393
ABD_total	.972	71	.107

The results of the Shapiro-Wilk normality test suggest that the following variables do not approximate the normal distribution: CRT, IHLC, UCAM, DIS, CBR, CBD and ABD. However, in the case of IHLC, DIS, CBR, CBD and ABD, skewness and kurtosis values are in the normal range, as can be seen in table 8 and the stem-and-leaf plots (addendum 4)

do not indicate significant deviations from the normal shape of the distribution. Given that these variables are also extreme values free, it is safe to assume that they are normally distributed. Nonparametric tests will be applied in analysis that include CRT or UCAM. Because of the small size of the groups, nonparametric tests will also be run to determine if presentation order has an effect on item ratings.

Eight one-way repeated measures ANOVAs were conducted to test the differences in trustworthiness and emotional intent ratings between each form of each of the four items of the scale. There were no outliers and the data were normally distributed at each time point, as assessed by stem-and-leaf plot and Shapiro-Wilk test ($p > .05$). Sphericity as assessed by Mauchly's test was met for all cases with the exception of item 1 (asthma) - emotional intent, item 3 (gout) - emotional intent and item 4 (AIDS), both trustworthiness and emotional intent. In all cases the Huynh-Feldt correction was applied ($\varepsilon = .868$, $\varepsilon = .778$, $\varepsilon = .859$ and $\varepsilon = .779$, respectively). Significant differences were observed in the case of each item, on both dimensions, between all forms.

The non-bullshit ($M = 4.19$, $SD = .65$) form of item 1 (asthma) was rated as more trustworthy than the complementary bullshit form ($M = 3.55$, $SD = .98$) which in turn was rated as more trustworthy than the alternative bullshit form ($M = 3.15$, $SD = 1.10$), $F(2, 71) = 28.50$, $p < .001$, *partial eta squared* = .445 while the non-bullshit form was rated as less impressive ($M = 2.33$, $SD = 1.30$) than the complementary bullshit form ($M = 2.51$, $SD = 1.28$) and the alternative bullshit form ($M = 2.85$, $SD = 1.12$), $F(2, 71) = 3.57$, $p = .033$, *partial eta squared* = .091.

The non-bullshit ($M = 3.89$, $SD = 1.02$) form of item 2 (stress) was rated as more trustworthy than the complementary bullshit form ($M = 3.16$, $SD = 1.16$) which was rated as less trustworthy than the alternative bullshit form ($M = 3.40$, $SD = 1.13$), $F(2, 71) = 9.13$, $p < .001$, *partial eta squared* = .205. In the case of item 2, the impressiveness score of the non-bullshit form was rated as more impressive ($M = 2.73$, $SD = 1.35$) than the complementary bullshit form ($M = 2.58$, $SD = 1.26$), the alternative bullshit form ($M = 3.04$, $SD = 1.12$) having the highest impressiveness ratings of the three, $F(2, 71) = 3.49$, $p = .038$, *partial eta squared* = .088.

The non-bullshit ($M = 4.05$, $SD = .98$) form of item 3 (gout) was rated as more trustworthy than the complementary bullshit form ($M = 3.00$, $SD = 1.22$) which in turn was rated as more trustworthy than the alternative bullshit form ($M = 2.45$, $SD = 1.12$), $F(2, 71) = 44.11$,

$p < .001$, *partial eta squared* = .554. The impressiveness score of the non-bullshit form ($M = 2.56$, $SD = 1.50$) was higher than the score of the complementary bullshit form ($M = 2.29$, $SD = 1.14$), the alternative bullshit form's score being the highest ($M = 3.55$, $SD = 1.49$), $F(2, 71) = 20.50$, $p < .001$, *partial eta squared* = .366.

The non-bullshit ($M = 4.11$, $SD = .98$) form of item 4 (AIDS) was rated as more trustworthy than the complementary bullshit form ($M = 3.36$, $SD = 1.05$) which in turn was rated as more trustworthy than the alternative bullshit form ($M = 2.92$, $SD = 1.28$), $F(2, 71) = 25.50$, $p < .001$, *partial eta squared* = .445. The non-bullshit form was rated as less impressive ($M = 2.84$, $SD = 1.36$) than the complementary bullshit form ($M = 3.04$, $SD = 1.28$) and the alternative bullshit form ($M = 3.48$, $SD = 1.34$), $F(2, 71) = 3.83$, $p = .026$, *partial eta squared*

In most cases, trustworthiness scores follow the hypothesized pattern of NB > CB > AB and impressiveness scores mirror the relation, suggesting that the ratings reflect the expected general ability to detect bullshit, both in terms of trustworthiness and of detecting emotional intent (i.e., impressiveness). Having confirmed that the scores are based on the intrinsic characteristics of the scale, it is necessary to establish if there is a difference between randomly generated items and collected items, enabling us to determine if the content of the scale can be adequately classified as bullshit on the basis of the method proposed and defended by Pennycook et al. (2015, 2016).

Table 10. *Ranks associated to different forms of random and collected items*

		N	Mean Rank	Sum of Ranks
Trustworthiness collected items complementary - Trustworthiness random items complementary	Negative Ranks	33 ^a	29.32	967.50
	Positive Ranks	21 ^b	24.64	517.50
	Ties	20 ^c		
	Total	74		
Trustworthiness collected items alternative - Trustworthiness random items alternative	Negative Ranks	51 ^d	33.51	1709.00
	Positive Ranks	14 ^e	31.14	436.00
	Ties	8 ^f		
	Total	73		

Impressiveness collected items alternative - Impressiveness random items alternative	Negative Ranks	19 ^g	27.89	530.00
	Positive Ranks	43 ^h	33.09	1423.00
	Ties	11 ⁱ		
	Total	73		
Impressiveness collected items complementary - Impressiveness random items complementary	Negative Ranks	24 ^j	30.00	720.00
	Positive Ranks	35 ^k	30.00	1050.00
	Ties	15 ^l		
	Total	74		

- a. Trustworthiness collected items complementary < Trustworthiness random items complementary
- b. Trustworthiness collected items complementary > Trustworthiness random items complementary
- c. Trustworthiness collected items complementary = Trustworthiness random items complementary
- d. Trustworthiness collected items alternative < Trustworthiness random items alternative
- e. Trustworthiness collected items alternative > Trustworthiness random items alternative
- f. Trustworthiness collected items alternative = Trustworthiness random items alternative
- g. Impressiveness collected items alternative < Impressiveness random items alternative
- h. Impressiveness collected items alternative > Impressiveness random items alternative
- i. Impressiveness collected items alternative = Impressiveness random items alternative
- j. Impressiveness collected items complementary < Impressiveness random items complementary
- k. Impressiveness collected items complementary > Impressiveness random items complementary

The results of the Wilcoxon nonparametric test for the difference between two dependent samples indicated significant differences between randomly generated items and collected items in terms of complementary form trustworthiness ($Z = -1.97$, $p = .048$), alternative form trustworthiness ($Z = -4.20$, $p < .001$) and alternative form impressiveness ($Z = -3.140$, $p < .001$). However, as it can be seen in table 10, randomly generated items were considered more trustworthy and less intended to impress than the items collected from the sources proposed by Berezow, 2017). Thus, in the context of the previously described relation between NB, CB and AB forms, it could be argued that the randomly generated items are better at bullshiting than the collected items, which can also be considered bullshit (as they present significant medium correlations with the randomly generated items, r 's between .42 and .60 for trustworthiness, and between .26 and .53 for impressiveness), albeit of lower quality.

Pearson correlations were applied to test the association between trustworthiness and impressiveness of each individual item form. The only significant results indicated a

positive, small to medium association in case of the AB form of item 2 (stress), $r = .32$, $p = .003$.

Table 11. *Pearson correlation between Health-related bullshit vulnerability variables*

	CBR	CBR_e	ABR	ABR_e	CBD	CBD_e	ABD	ABD_e
CBR	1	-.123	.695**	.095	-.735**	-.119	-.426**	-.194
p		.296	.000	.425	.000	.318	.000	.100
CBR_e	-.123	1	-.066	.327**	.227	-.211	.173	.282*
p	.296		.580	.005	.053	.073	.144	.016
ABR	.695**	-.066	1	.107	-.507**	.064	-.744**	-.056
p	.000	.580		.368	.000	.591	.000	.636
ABR_e	.095	.327**	.107	1	-.089	-.497**	-.095	-.655**
p	.425	.005	.368		.452	.000	.423	.000
CBD	-.735**	.227	-.507**	-.089	1	.056	.753**	.217
p	.000	.053	.000	.452		.637	.000	.065
CBD_e	-.119	-.211	.064	-.497**	.056	1	-.108	.769**
p	.318	.073	.591	.000	.637		.364	.000
ABD	-.426**	.173	-.744**	-.095	.753**	-.108	1	.086
p	.000	.144	.000	.423	.000	.364		.471
ABD_e	-.194	.282*	-.056	-.655**	.217	.769**	.086	1
p	.100	.016	.636	.000	.065	.000	.471	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 12. *Pearson correlation for general health-related bullshit variables*

	CBR_t	ABR_t	CBD_t	ABD_t	CBR_e	ABR_e	CBD_e	ABD_e
CBR_t	1	.496**	-.503**	.066	.731*	.767**	.497*	.163
					*	*		
							.634*	.395*
							*	*
P		.000	.000	.581	.000	.000	.167	.000
ABR_t	.496**	1	-.535**	-.662**	.454*	.293*	.674*	.662**
					*	*		
							.316*	.490*
							*	*
P	.000		.000	.000	.000	.012	.000	.000
CBD_t	-.503**	-.535**	1	.707**	-	-.318**	.409*	-.305**
							*	*
					.437*	*		*
					*			
P	.000	.000		.000	.000	.006	.000	.000
ABD_t	.066	-.662**	.707**	1	-.063	.154	.360*	-.527**
							*	*
t								
P	.581	.000	.000		.599	.192	.002	.000

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

As can be seen in tables 11 and 12, the two proposed categories of health-related bullshit vulnerability correlate strongly (i.e., AB and CB forms correlate, receptivity and detection are significantly associated in the case of each form) but the two proposed dimensions do not (i.e., trustworthiness is not associated with impressiveness).

Detection scores were expected to be more strongly associated than receptivity scores, which was true in case of impressiveness ($z = -.396$, $p < .001$), and general scores ($z = -1.97$, $p = .024$) but not trustworthiness ($z = -.71$, $p = .23$).

Table 13. *Correlations between items trustworthiness scores and pseudo-profound bullshit receptivity*

		Asthma	Asthma	Asthma	Stress	Stress	Stress	Gout	Gout	Gout	AIDS	AIDS	AIDS
		NB	CB	AB	NB	CB	AB	NB	CB	AB	NB	CB	AB
BRS	Pearson	.240*	.357**	.472**	.177	.373**	.074	-.007	.335**	.415**	-.012	.334**	.456**
	Correlation												
	p	.044	.002	.000	.140	.001	.542	.956	.004	.000	.918	.004	.000
	N	71	71	71	71	71	71	71	71	71	71	71	71

Pseudo-profound bullshit receptivity scores presented small significant correlations with trustworthiness CB forms scores (r 's between .33 and .37, p 's $< .004$) and medium size significant correlations with AB forms scores (with the exception of item 2 – Stress AB, which had $r = .07$, $p = .542$, all r 's were between .41 and .47, p 's $< .001$). NB forms trustworthiness were not associated with pseudo-profound bullshit receptivity scores, with the exception of item 1 – asthma, which presented a small significant correlation ($r = .24$, $p = .044$). The only emotional intent scores associated with bullshit receptivity were identified in the case of item 4 – AIDS AB form ($r = -.31$, $p = .008$). Pseudo-profound bullshit detection (i.e., sensitivity) was significantly correlated only with the trustworthiness scores of item 3 – Gout CB form ($r = -.23$, $p = .050$).

Given that the expected pattern was of the associations between the individual items of the scale and the variables reflecting pseudo-profound bullshit vulnerability was observed, the next step is to assess the scale's convergent validity by testing the associations between overall health-related bullshit scores and pseudo-profound bullshit scores. Pseudo-profound bullshit receptivity was significantly correlated with complementary bullshit trustworthiness receptivity ($r = .44$, $p < .001$), alternative bullshit trustworthiness receptivity ($r = .50$, $p < .001$), general complementary bullshit receptivity ($r = .29$, $p = .014$) but not general alternative bullshit receptivity ($r = .20$, $p = .088$), negatively associated with

complementary bullshit trustworthiness detection ($r = -.33, p = .005$), alternative bullshit trustworthiness detection ($r = -.35, p = .002$) and alternative bullshit impressiveness detection ($r = -.24, p = .039$). Pseudo-profound bullshit detection was significantly associated only with complementary bullshit trustworthiness detection ($r = .26, p = .025$), presenting a direct, small sized correlation that did not reach statistical significance with alternative bullshit trustworthiness detection ($r = .23, p = .051$). The difference between the correlation of pseudo-profound bullshit receptivity with complementary health-related bullshit receptivity and the correlation of pseudo-profound bullshit sensitivity with complementary health-related bullshit sensitivity was not statistically significant (Fischer $z = 1.2, p = .115$).

Having now confirmed both that the scores are based on the intrinsic characteristics of the scale and that what is measured can be classified as bullshit according to Frankfurt (2005), correlating with the other available measure of bullshit both on an item level and at the sample level, it is necessary to establish the degree to which they are influenced by the order in which different forms are presented.

Table 14. *Kruskal Wallis Test for the differences in bullshit form ratings between the 3 groups*

	NB_		CB	CBR_		AB	ABR_	CB	CBD_e	AB	ABD_	CBR_tota	ABR_	CBD_	ABD_
	NB	e	R	e	R	e	D	m	D	e	l	t	t	t	
χ^2	3.3	1.00	1.82	1.64	2.11	4.21	2.65	5.16	.07	4.02	2.35	.09	.19	4.74	
2	6														
df	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
p	.18	.605	.402	.440	.347	.121	.266	.076	.963	.134	.309	.952	.908	.093	
6															

Note. NB = Non-bullshit items trustworthiness score; NB_e = Non-bullshit items emotional intent score; CBR = Complementary Bullshit Receptivity; CBR_e = Complementary Bullshit Emotional Receptivity; CBR_t = General Complementary Bullshit Receptivity; ABR = Complementary Bullshit Receptivity; ABR_e = Complementary Bullshit Emotional Receptivity; ABR_t = General Alternative Bullshit Receptivity; CBD = Complementary Bullshit Detection; CBD_e = Complementary Bullshit Emotional Detection; CBD_t = General Complementary Bullshit Detection; ABD = Alternative Bullshit Detection; ABD_e = Alternative Bullshit Emotional Detection; ABD_t = General Alternative Bullshit Detection.

Taking in consideration the small number of participants in each group, a non-parametric test was conducted to determine if the order of presentation of the forms influenced ratings. The results of the Kruskal Wallis test indicated no significant difference between groups (all p 's $> .076$). The following analysis will be run on the full sample.

Table 15. *Spearman rank-order correlation between cognitive style and health-related bullshit vulnerability*

	CBR_t	ABR_t	CBD_t	ABD_t	CBR	CBR_e	ABR	ABR_e	CBD	CBD_e	ABD	ABD_e
CRT	-.134	-.276*	.244*	.224	-.041	-.139	-.021	-.333*	.272*	-.077	.216	-.142
P	.257	.018	.037	.057	.731	.238	.858	.004	.020	.519	.067	.230

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Cognitive style positively associated with general complementary bullshit detection (Spearman's $\rho = .24$, $p = .037$) and complementary bullshit trustworthiness detection (Spearman's $\rho = .27$, $p = .020$), presenting a small, nonsignificant correlation with general alternative bullshit detection (Spearman's $\rho = .22$, $p = .057$) and alternative bullshit trustworthiness detection (Spearman's $\rho = .21$, $p = .067$). Negative correlations were observed between cognitive style and general alternative bullshit receptivity (Spearman's $\rho = -.27$, $p = .018$) and alternative bullshit impressiveness receptivity (Spearman's $\rho = -.33$, $p = .004$). No significant correlations were found between cognitive style and pseudo-profound bullshit vulnerability (Spearman's $\rho = .06$, $p = .583$) or pseudo-profound bullshit detection (Spearman's $\rho = .04$, $p = .725$).

Table 16. *Pearson Correlation between general conspiracy beliefs and health-related bullshit vulnerability*

	CBR_t	ABR_t	CBD_t	ABD_t	CBR	CBR_e	ABR	ABR_e	CBD	CBD_e	ABD	ABD_e
GCB	.251*	.143	-.043	.066	.359*	.027	.306*	-.117	-	-.229	-	-.223
									.299*		.235*	
P	.035	.234	.720	.584	.002	.822	.009	.332	.011	.054	.048	.062

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Conspiracy beliefs were positively associated with general complementary bullshit receptivity ($r = .25$, $p = .035$), complementary bullshit trustworthiness receptivity ($r = .35$, $p = .002$), alternative bullshit trustworthiness receptivity ($r = .30$, $p = .009$) and negatively with complementary bullshit trustworthiness detection ($r = -.29$, $p = .011$) and alternative bullshit trustworthiness detection ($r = -.23$, $p = .048$). Nonsignificant correlations were observed between conspiracy beliefs, complementary bullshit impressiveness detection ($r = -.22$, $p = .054$) and alternative bullshit impressiveness detection ($r = -.22$, $p = .062$).

ACA	-.136	-.030	.125	.010	-.085	-.117	-.067	.028	.238*	.060	.213	.122
M												
P	.252	.802	.291	.935	.472	.326	.571	.812	.042	.612	.070	.305
DCA	.443*	.478*	-.306*	-.198	.568*	.107	.628*	.006	-	-.047	-	-.089
M	*	*			*		*		.478*		.504*	
									*		*	
P	.000	.000	.008	.092	.000	.369	.000	.959	.000	.695	.000	.454
PCAM	.333*	.440*	-.209	-.184	.489*	.023	.559*	.025	-.297*	-.004	-.339*	-.002
		*			*		*					
P	.004	.000	.076	.118	.000	.848	.000	.832	.011	.976	.003	.985

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Belief in complementary and alternative medicine was associated with general complementary bullshit receptivity ($r = .32$, $p = .005$), complementary bullshit trustworthiness receptivity ($r = .40$, $p = .001$), alternative bullshit trustworthiness receptivity ($r = .37$, $p = .001$), complementary bullshit trustworthiness detection ($r = -.31$, $p = .009$) and alternative bullshit trustworthiness detection ($r = -.27$, $p = .022$).

Philosophical congruence with the principles of complementary and alternative medicine was associated with high general complementary bullshit receptivity ($r = .33$, $p = .004$), high general alternative bullshit receptivity ($r = .44$, $p < .001$), high complementary bullshit trustworthiness receptivity ($r = .48$, $p < .001$), high alternative bullshit trustworthiness receptivity ($r = .55$, $p < .001$), low complementary bullshit trustworthiness detection ($r = -.29$, $p = .011$) and low alternative bullshit trustworthiness detection ($r = -.33$, $p = .003$).

Dysfunctional beliefs related to complementary and alternative medicine were significantly associated with general complementary bullshit receptivity ($r = .44$, $p = .004$), general alternative bullshit receptivity ($r = .47$, $p < .001$), general complementary bullshit detection ($r = -.30$, $p = .008$), complementary bullshit trustworthiness receptivity ($r = .56$, $p < .001$), alternative bullshit trustworthiness receptivity ($r = .62$, $p < .001$), complementary bullshit trustworthiness detection ($r = -.47$, $p < .001$) and low alternative bullshit trustworthiness detection ($r = -.50$, $p < .001$). Functional attitudes towards complementary and alternative medicine were positively associated with complementary bullshit trustworthiness detection ($r = .23$, $p = .042$).

Pearson's partial correlation showed that the strength of association between internal health locus of control and alternative bullshit trustworthiness receptivity was less when

dysfunctional CAM beliefs and philosophical congruence with CAM were controlled for, the association no longer being statistically significant ($r_{\text{partial}} = .182, p = .128$).

When controlling for dysfunctional CAM beliefs, the associations between distrust in medicine and general complementary bullshit receptivity ($r_{\text{partial}} = .10, p = .391$), complementary bullshit trustworthiness receptivity ($r_{\text{partial}} = .13, p = .277$), alternative bullshit trustworthiness receptivity ($r_{\text{partial}} = .04, p = .740$) were no longer significant, while the correlations between distrust in medicine and general complementary bullshit detection ($r_{\text{partial}} = -.27, p = .020$), complementary bullshit trustworthiness detection ($r_{\text{partial}} = -.39, p = .001$), alternative bullshit trustworthiness detection ($r_{\text{partial}} = -.309, p = .008$), were weaker but remained statistically significant.

Taking into consideration both the results of the factor analysis and the correlations between health-related bullshit vulnerability variables and conceptually related variables, complementary bullshit trustworthiness receptivity and alternative bullshit trustworthiness receptivity were summed into health-related bullshit receptivity, health-related bullshit sensitivity being computed by subtracting averaged receptivity scores from averaged non-bullshit items ($\text{NB}/4 - \text{HBR}/8$), discarding the impressiveness dimension. The full reasoning is provided in the discussion section.

Health-related bullshit receptivity registered scores between 8 and 35 ($M = 24.98, SD = 6.28$), health-related bullshit sensitivity registering scores between $-.63$ and 3.13 ($M = .93, SD = .88$). The results of the Shapiro-Wilk normality tests indicated significant differences between the distributions of the variables and the normal distribution ($p = .038, p = .035$), however, given that stem-and-leaf plots indicate no extreme values and distribution shapes that resemble the normal curve, in conjunction with skewness ($.50, SD = .28$ and $-.57, SD = .55$) and kurtosis ($-.27, SD = .55$ and $-.10, SD = .55$) values within the normal range, parametric tests will be employed.

Table 20. *Correlations between health-related bullshit vulnerability variables and conceptually relevant variables*

	HB	HB	BR	BD	MQ	CR	IHL	CHL	PHL	HL	PCA	DCA	ACA	BCA	UCA		GC
	R	S	S	S	S	T	C	C	C	C	M	M	M	M	M	DIS	B
HB	1	-	.516	-	.278	-	.300	-.113	-.071	.058	.568	.649	-.083	.423	.328	.30	.361
R		.699		.139		.037										2	
		.000	.000	.247	.019	.755	.010	.340	.553	.628	.000	.000	.485	.000	.005	.00	.002

	73	73	71	71	71	73	73	73	73	73	73	73	73	71	71	73	71
HBS	-	1	-	.266	-	.260	-.015	.118	.139	.134	-.340	-.524	.241	-.310	-.245	-	-
	.699		.367		.022											.49	.285
																3	
	.000		.002	.025	.856	.026	.900	.320	.241	.260	.003	.000	.040	.009	.039	.00	.016
																0	
	73	73	71	71	71	73	73	73	73	73	73	73	73	71	71	73	71

Health-related bullshit receptivity presented a strong negative association with health-related bullshit sensitivity ($r = -.69, p < .001$), a medium size positive correlation with pseudo-profound bullshit receptivity ($r = .51, p < .001$), a small positive correlation with the scores of the motivational quotations scale ($r = .27, p = .019$), a small positive association with internal health locus of control ($r = .30, p = .010$), which was reduced and no longer statistically significant when controlling for either beliefs in CAM ($r_{\text{partial}} = .17, p = .143$) or dysfunctional CAM beliefs ($r_{\text{partial}} = .16, p = .172$), medium positive correlations with philosophical congruence with CAM ($r = .56, p < .001$) and dysfunctional CAM beliefs ($r = .64, p < .001$), a small to medium positive correlation with belief in CAM ($r = .42, p < .001$) and small positive associations with use of CAM (Spearman's $\rho = .38, p = .005$), distrust in medicine ($r = .30, p = .009$) and conspiracy beliefs ($r = .36, p = .002$). The correlation with distrust in medicine was reduced when controlling for belief in CAM ($r_{\text{partial}} = .24, p = .040$) and no longer significant when controlling for dysfunctional CAM beliefs ($r_{\text{partial}} = .99, p = .408$).

Health-related bullshit sensitivity presented small to medium negative correlations with pseudo-profound bullshit receptivity ($r = -.36, p = .002$), philosophical congruence with CAM ($r = -.34, p = .003$), belief in CAM ($r = -.31, p = .009$) and distrust in medicine ($r = -.49, p < .001$), small positive associations with pseudo-profound bullshit detection ($r = .26, p = .025$), cognitive style (Spearman's $\rho = .26, p = .026$) and functional attitudes towards CAM ($r = .24, p = .040$), a medium negative correlation with dysfunctional CAM beliefs ($r = -.52, p < .001$) and small negative associations with CAM use (Spearman's $\rho = -.24, p = .039$) and conspiracy beliefs ($r = -.28, p = .016$). The association between HBS and distrust in medicine was reduced but still significant even when controlling for all CAM variables ($r_{\text{partial}} = -.38, p = .001$).

3.6 Discussion

The aim of this chapter was to broaden both the types of bullshit which are empirically addressed and the methods of addressing them. Following the delineation of the possible options of achieving both goals, an extreme focal point emerged, diametrically opposed to

the existing elements within empirical bullshit research. In terms of bullshit type, the harmless, art-resembling, sector where pseudo-profound bullshit resides was vacated in favour of a category that grievously threatens personal and public well-being: medical and health-related bullshit (Schmidt, 2004). Regarding the form of the instrument, the quintessential, elegant, design favoured by Pennycook et al. (2015), presenting little to none contextual information in the form of short sentences, was determined to be insufficient for the scope of examining health-related bullshit vulnerability. This laboratory-like design was abandoned for one more ecological, consisting of detailed four-paragraph long items which bombarded readers not only with buzzwords that cause semantic confusion through vagueness but also with highly intuitive, therefore easily generating charitable interpretation in the model of obscurantism (Buekens & Boudry, 2014), explanations of causal models related to health and disease and information about the source of the evidence. A final dissociation from the Bullshit Receptivity Scale was to employ a repeated measure design, thus increasing confidence in the provided bullshit vulnerability scores. What remained common was the method of validating something as bullshit: a lack of significant differences between the scores of randomly generated items and items based on authors continuously accused of producing bullshit (Berezow, 2017, Novella, 2010).

But which scores? In departing from the pseudo-profound area of the bullshit spectrum, Pennycook et al. (2015)'s cleverly devised work-around, asking participants to rate the vague construct of profundity, was no longer applicable. Directly asking if something is bullshit or not would certainly cue the need analytic inferences, therefore boosting detection (Pennycook, 2016, also see Chapter 2 above). Starting from the characteristic of bullshit as “attempts to impress rather than to inform; to be engaging rather than instructive” (Pennycook et al., 2015, p. 550), two dimensions of health-related bullshit vulnerability were proposed: trustworthiness, the degree to which reliable information is provided, and impressiveness, the degree to which the author is perceived as intending to produce powerful emotions. While questions related to these dimensions may still cue System 2, based on the results of the first study (Chapter 2) it is highly improbable that bullshit vulnerability scores will be significantly altered.

Using the distinction made by Ernst et al. (2008), we created two forms for each bullshit item – a complementary bullshit form, which presents a therapeutic package without specifying an explicitly competitive etiopathogenetic model of conventional medicine; and an alternative bullshit form, which discourages treatment either through supporting alternative models of health and disease or directly by cultivating distrust of the medical system. A non-bullshit form, which was based on reliable sources, was also added for each item both as a control element and as a method of computing health-related bullshit

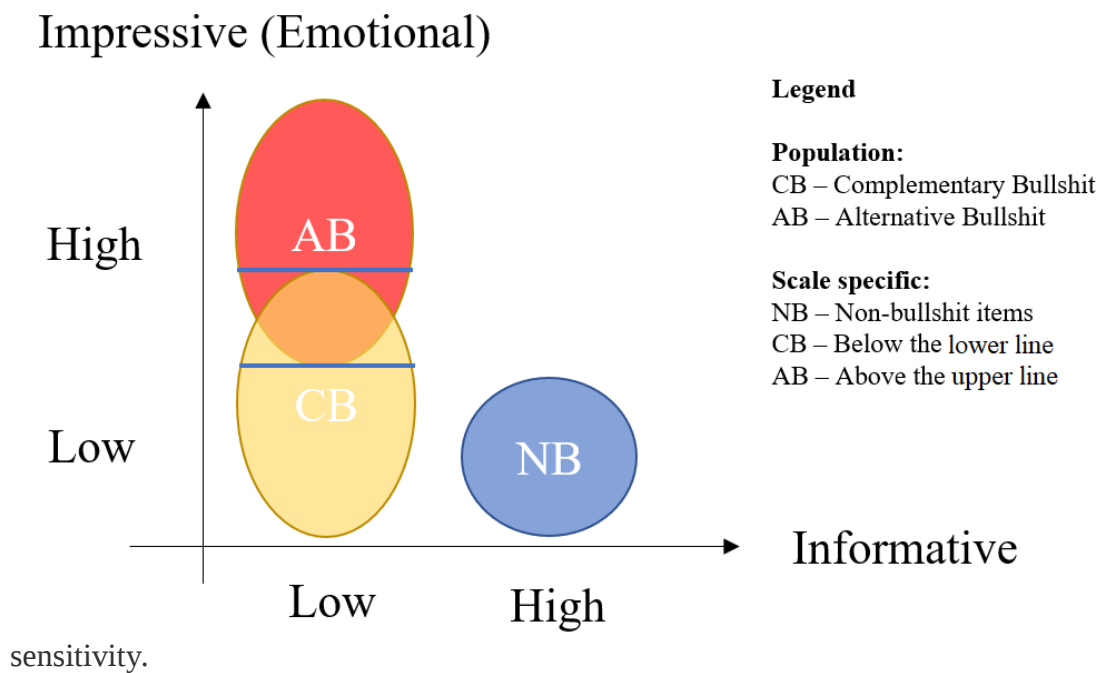


Figure 2. Expected distribution of complementary and alternative bullshit and the positioning of the forms of the HBVS in the context of the dimensions of bullshit proposed by Pennycook et al. (2015).

The results of our documentation process indicated that most of what might be considered complementary bullshit tends to be situated lower on the impressiveness dimension than what would be classified as alternative bullshit, the latter frequently resorting to powerful emotions such as fear, hate and hope. While of course many of the two types of what could be presumed to be bullshit diverge from the pattern, in the context of the scale and for the purpose of research, a separation was established, represented by the blue lines in Figure 2. According to Frankfurt (2005), bullshit can be found anywhere on the two-dimensional space of the figure, but it will mostly be amassed in the low-informativeness section (following the principle that even a broken clock shows the right time twice a day), with the most dangerous kind, as it is driven by a purpose, in the high-impressiveness region.

Non-bullshit items were designed to be as neutral as possible from the point of impressiveness, avoiding emotionally salient language or attempts to persuade in any direction.

The results of the principal component analyses indicated a clear differentiation between bullshit and non-bullshit forms in the case of trustworthiness scores, failing to separate however between alternative and complementary bullshit forms. The separation was not as clear in the case of emotional intent (see table 7), indicating possible problems such the existence of other, more powerful latent variables. The internal consistency of the overall scale (Cronbach's Alpha = .765) and of both subscales (Cronbach's Alpha = .824 for trustworthiness and Cronbach's Alpha = .782 for impressiveness) were between acceptable and good.

On the level of individual items, trustworthiness was distributed as expected, non-bullshit forms being rated as more trustworthy than complementary bullshit forms, which in turn were rated as more trustworthy than alternative bullshit forms (with the exception of item 2 – stress, where the alternative form was rated as more trustworthy than the complementary form). Impressiveness followed the hypothesised pattern in the case of items 1 (asthma) and 4 (AIDS), non-bullshit forms being rated as less intended to impress than complementary bullshit forms, which in turn were rated as less intended to impress than alternative bullshit forms. For item 2 (stress) and 3 (gout), the complementary bullshit form was rated as less intended to impress than the non-bullshit form. Such a pattern would be expected in case of a scale that measures bullshit vulnerability and therefore the results suggest that the scores are based on the intrinsic characteristics of the scale and not on chance or other factors.

Rating comparisons between randomly generated items and items that have been collected from sources repeatedly indicted of bullshit indicated the presence of significant differences both in terms of trustworthiness and of impressiveness. These differences, however, indicated that the randomly generated items, which Pennycook et al. (2015, 2016) argue are the golden standard of what Frankfurt (2005) defines as bullshit due to their lack of intentionality, were regarded as more trustworthy and less intended to produce powerful emotions. Interpreting the result through a parallel to the Bullshit Receptivity Scale, it is as if the random quote generator produced elements that were consistently rated as more profound than the wisdom of Chopra (which was not the case, at least in the current study,

Chopra items ratings not differing significantly from the ratings of the randomly generated items, $p = .059$, the mean difference of profundity being .08 in favour of Chopra's wisdom). A possible explanation is that some participants, having never heard of the interventions proposed in the randomly generated items, gave them the benefit of the doubt until they engaged in more thorough research. This is however unlikely as the randomly generated items are based on intuitive concepts which are common in CAM. Moreover, even if the participants credited the intervention, what should have triggered conflict detection was the presented evidence, which was either anecdotal, secret or completely absent. Therefore, the randomly generated items are not only health-related bullshit, but successful ones as well, rendering the collected items, which present medium correlations with the randomly generated items, low-quality bullshit.

Trustworthiness ratings did not correlate with impressiveness ratings, neither at the level of individual items (with the exception of item 2 – stress, which presented a small positive correlation) nor at the level of the entire sample. Significant associations within each dimensions were found as expected: regarding trustworthiness scores, complementary bullshit receptivity correlated strongly with alternative bullshit receptivity and negatively with complementary bullshit detection, presenting a medium sized negative correlation with alternative bullshit detection, alternative bullshit receptivity presented a medium sized negative correlation with complementary bullshit detection and a strong negative correlation with alternative bullshit detection and cognitive bullshit detection correlated strongly with alternative bullshit detection; on the dimension of emotional intent, complementary bullshit receptivity presented small associations with alternative bullshit receptivity and alternative bullshit detection, presenting negative small but not statistically significant correlation with complementary bullshit detection, alternative bullshit receptivity presented medium sized negative associations with both detection variables, which correlated strongly with each other. Small, positive yet not statistically significant correlations were observed between complementary bullshit trustworthiness detection, complementary bullshit impressiveness receptivity and alternative bullshit impressiveness detection ($r = .22$, $p = .053$, $r = .21$, $p = .065$). These data suggest three competing hypotheses, either the two proposed dimensions of bullshit are mostly independent, which is unlikely but cannot yet be ruled out, either the ability to infer emotional intent is not associated with bullshit vulnerability (the correlations between impressiveness variables are considerably lower than those of trustworthiness), or it was not adequately assessed

(e.g., participants were confused, not understanding what is being asked, the questions did not capture the essential aspect related to bullshit vulnerability). A possible answer can be found by examining the degree to which both dimensions are associated with conceptually relevant variables and also by summing the two measures, creating a general receptivity score and a general detection score for both complementary bullshit and alternative bullshit, and assessing whether the new measures better fit the conceptually appropriate model.

General complementary bullshit receptivity presented a medium positive correlation with general alternative bullshit receptivity and a medium negative correlation with general complementary bullshit detection. General alternative bullshit receptivity presented medium negative associations with both general detection variables, which correlated strongly with each other.

Detection related variables were expected to have a stronger association with each other than receptivity variables as while response bias can differ between complementary and alternative bullshit, conflict detection should be common, presenting only small variations. While heuristics are based on personal experience, conflict detection, especially at high levels, is rather formalized. This was observed in the case of impressiveness but not trustworthiness. The general, summed, scores presented the expected difference.

At the level of individual items, pseudo-profound bullshit receptivity correlated with complementary bullshit forms trustworthiness, having small effect sizes, and with alternative bullshit forms trustworthiness, in which case medium effect sizes were observed. Non-bullshit forms trustworthiness was not associated with pseudo-profound bullshit receptivity. The only emotional intent scores associated with bullshit receptivity were identified in the case of item 4 – AIDS alternative bullshit form. Pseudo-profound bullshit sensitivity was significantly correlated only with the trustworthiness scores of item 3 – Gout CB form, presenting a small size, negative correlation. This is not unreasonable as the complementary bullshit form of item 3 was one of the most balanced bullshit forms.

At the level of the entire sample, pseudo-profound bullshit receptivity was associated with complementary bullshit trustworthiness receptivity, alternative bullshit trustworthiness receptivity, both associations having a medium effect size. Small positive correlations were also observed with general complementary bullshit receptivity and general alternative bullshit receptivity, the latter not reaching statistical significance. Pseudo-profound bullshit receptivity was negatively associated with complementary bullshit trustworthiness

detection, alternative bullshit trustworthiness detection and alternative bullshit impressiveness detection, effect sizes being small. The common variance between pseudo-profound bullshit and health-related bullshit is approximatively 25%.

Pseudo-profound bullshit detection presented small sized positive associations with bullshit trustworthiness detection and alternative bullshit trustworthiness detection, the first being statistically significant while the latter was not. The correlations between pseudo-profound bullshit detection and health-related bullshit detection indicate a 6% common variance attributed to conflict detection.

Cognitive style presented weak positive statistically significant associations with general complementary bullshit detection and complementary bullshit trustworthiness detection, and weak negative correlations with general alternative bullshit receptivity and alternative bullshit impressiveness receptivity. It is interesting to note that no significant correlations were found between cognitive style and pseudo-profound bullshit vulnerability or pseudo-profound bullshit detection on this sample, however, pseudo-profound bullshit receptivity was significantly associated with cognitive style in the sample of the first study (Spearman's $\rho = -.341$, $p < .001$) These results offer an explanation for the small common variance between pseudo-profound bullshit detection and health-related bullshit detection as they both were expected to be significantly associated with cognitive style.

Based on the defining characteristics of the alternative bullshit forms, it was expected that they will be more strongly associated with conspiracy beliefs. The results indicated similar associations with both complementary and alternative bullshit forms, slightly stronger in the case of complementary bullshit, on both receptivity and detection. A similar pattern was encountered in the case of the variable measuring distrust in conventional medicine. As these variables were expected to differentiate between the two bullshit forms, the lack of discrimination explains the results of the principal component analysis, which grouped them together under one factor.

Based on the pull factors described by Ernst et al. (2008), internal health locus of control was expected to be associated with health-related bullshit receptivity but only through the effect of complementary and alternative beliefs. This was confirmed as IHLC presented a small correlation with alternative bullshit trustworthiness receptivity, which was no longer significant when controlling for either CAM beliefs as measured by Lindeman's (2011) scale or for philosophical congruence with CAM principles and distorted CAM beliefs.

Complementary and alternative medicine use correlated with alternative bullshit trustworthiness receptivity. CAM beliefs, philosophical congruence with CAM principles and distorted CAM beliefs presented the expected associations with both complementary and alternative bullshit trustworthiness receptivity and detection, larger effect sizes being observed in the case of the distorted beliefs.

When controlling for distorted CAM beliefs, distrust in medicine was no longer significantly associated with receptivity variables, showing lower yet still statistically significant correlations with detection variables.

Functional attitudes towards CAM presented a weak, positive correlation with complementary bullshit trustworthiness detection, not being significantly associated with receptivity variables.

As impressiveness scores were not associated with any conceptually relevant variable and moreover, general scores did not show stronger correlations than trustworthiness scores, also taking into consideration the result of the principal factor analysis that indicated an imperfect separation between bullshit and non-bullshit forms, the decision to exclude them from analysis was taken. If detecting the intention to impress on behalf of the agent who produces the message is relevant in the context of bullshit, our assessment was not able to effectively capture it. This is not unlikely as in the pretesting phase participants often motivated their answers based on whether the items produced strong emotions, sometimes even providing low impressiveness ratings with the explanation that while the item might produce strong emotional reactions in a majority, it did not in their case. Measures were taken to avoid such interpretations (e.g., explicit examples provided in the oral presentation of the study, written instructions in which the relevant terms were bolded presented before each item) but it is possible they were only partial or not at all efficient. It is also possible that impressiveness is an implicit factor of trustworthiness, operating mostly outside of conscious awareness.

As alternative bullshit vulnerability scores were similar to those of complementary bullshit vulnerability, the latter presenting higher correlations with variables that were supposed to be closer to the alternative forms (e.g., conspiracy beliefs, distrust in medicine) and based on the results of the principal component analysis, which suggested a lack of differentiation between the two types of bullshit, health-related bullshit receptivity was computed by adding alternative bullshit trustworthiness receptivity and complementary bullshit

trustworthiness receptivity. Health-related bullshit sensitivity was constructed as proposed by Pennycook et al. (2015), by subtracting averaged receptivity score from averaged non-bullshit forms scores. Associations between these variables and the previously described conceptually relevant variables corresponded to the proposed model, offering strong evidence in favour of the scale's construct validity.

The relationship between health-related bullshit receptivity and internal health locus of control was explained by belief in CAM or the presence of dysfunctional CAM beliefs, while the association between health-related bullshit receptivity and distrust of medicine was explained only by the dysfunctional CAM beliefs. The negative correlation between health-related bullshit detection and distrust of medicine were only partially explained by CAM variables, indicating that investing the established medical model with trust sets it as a reference point against which conflicts can be detected, aiding in reducing bullshit vulnerability.

The current study provides considerable evidence in favour of establishing satisfactory psychometric proprieties for the second instrument to measure bullshit vulnerability, adding health-related bullshit to the categories of bullshit which are empirically assessable in terms of vulnerability. The scale also provides new directions for the further elaboration of bullshit vulnerability scales, demonstrating the applicability of longer randomly generated items through the inclusion of sufficient information points (i.e., description of underlying principles and intervention package) and the inclusion of contextual elements as sources of information. Given that the HBVS presented good internal consistency and excellent construct validity, its use in further research, as well as in practical aspects, is well warranted. Further applications of the scale do not need to take into account the order effect of form presentation as there was no significant difference between the three groups.

While the current study investigated the proprieties of the scale in a repeated measures design based on only four of the ten items, demonstrating that the items can indeed be considered bullshit as defined by Frankfurt (2005) and examining their psychometric characteristics, essential further research involves increasing the usability of the scale by creating a single session design and testing to see how much the transition affects the relationships between bullshit vulnerability scores and conceptually relevant variables.

The distinction between alternative and complementary bullshit, although not identified at the level of the data, also requires further study and according to the needs of further studies, the two scales can be treated as separate or not.

Other further research issues include re-examining or reconceptualizing the impressiveness dimension, identifying and testing a criterion for bullshit (an aspect which is also lacking for the BRS), especially in the area of dangerous health-related behaviours, and expanding the list of bullshit vulnerability categories that can be assessed through the development of new scales.

Conclusion

As suggested by Pennycook et al. (2015), the psychology of bullshit was in its nascent phase and required both the refinement of its only instrument and an expansion of the domains of bullshit. To these aims, the current thesis added the need of a comprehensive review and comparison of the types of bullshit and the conceptually proximal elements.

The first chapter provides a full account of all bullshit varieties identifiable at the moment of its writing. It provides general definitions and examples, highlighting overlapping areas as well as important differences. The structure of the chapter reflects both the chronology of the study domain and that of its transformation into an interdisciplinary topic, emphasising critical aspects that were modified or introduced through the focus-shifting process which often accompanies the adoption of a topic within a foreign discipline. Convergent and divergent developments are observed, noting whether the important issues on which they are based have been resolved or are still left unanswered.

The second chapter investigated the mechanisms that underlie pseudo-profound bullshit vulnerability, assessing the role of cognitive effort and of the expectation of having to justify profundity ratings, as well as their interaction with cognitive style. The results of the experiment indicated that investing cognitive effort decreases response bias, which is the proposed basis for bullshit receptivity while expectations of having to justify ratings augmented certainty invested in intuitive responses, especially among the participants that presented an intuitive cognitive style. Having an analytic cognitive style offered an increment in bullshit detection which was beyond that induced by cognitive effort, suggesting that other relevant aspects, such as having a set of core beliefs to which new information is often compared, also contribute towards reducing bullshit vulnerability. Although the collected data was not sufficient to confirm an interaction effect, the proposed model explained a considerable amount of the variance in bullshit vulnerability. The justification condition produced the first explanations of how participants understand the items of the Bullshit Receptivity Scale and what they considered profound about them, our qualitative analysis indicating the main topics around which the explanations revolved and the most notable examples for each topic. These are valuable for further research as they have the potential to represent second-order bullshit, a category not yet empirically investigated.

The third chapter examined possible directions for the development of novel bullshit receptivity measures and presented the process and difficulties of expanding the categories of empirically assessable bullshit. The result, named the Health-related Bullshit Vulnerability Scale (HBVS), was based on an entirely different structure than the Bullshit Receptivity Scale, opting for four-paragraphs long items which provided ample contextual information. Moreover, it employed a two-dimensional model of bullshit vulnerability, consisting of trustworthiness and impressiveness, and distinguished between complementary and alternative bullshit vulnerability. Four of the ten items of the scale were tested in a repeated measures design, examining the relationships between their score and conceptually relevant variables. The results did not support the scale's capacity to distinguish between alternative and complementary bullshit vulnerability and the impressiveness dimension presented considerable issues. However, summing the trustworthiness dimensions of alternative and complementary bullshit vulnerability resulted in a set of general scores which demonstrated an excellent fit of the proposed model. Strong support of adequate construct validity was established alongside indicators of good internal consistency. Further research is needed, especially in developing and testing a single session application form, but so far, the data is highly promising.

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Addendum 1: Randomly generated sentences and control items on various topics

Medical bullshit items (source: <https://www.npmjs.com/package/bullshit-generator>):

Visible necrosis is preferable to the start of hyperplasia symptoms

Hyperplasia determines gained fibromyalgia and in the absence of nutrients focused organ pains may be experienced.

After receiving immunization, the patient's paraesthesia got better

While the somatic activity got worse, most of the patient's symptoms ameliorated

Those cured early have fared worse, experiencing clinical pain, incapacity to visually recognise nutrients, cord shock risk and hypoperfusion.

Having the Medulla Obolonga calcified by myelin intake, the spinal cord aches kept getting worse

Some patients' fibromyalgia intake got better, depending on their necrosis rhinorrhoea symptoms

As hyperplasia syndrome history increases, the condition gets worse, being activated in hypoperfusion.

Relapsing symptoms returned, were embraced and developed into two paraesthesia episodes

Lesions of the cortex are observed alongside comorbidity in fibromyalgia dementia.

Delirium episodes cause unusual states and history dysfunction, especially noted among those affected by pains in the previous weeks.

Journal entries or thoughts containing chronic asymptomatic pathology should be correlated with observed moods.

The shock caused by the onset of dementia among those misdiagnosed triggered a deadly pathology in the majority of cases.

Relapsing cases have been found and worse, two had pathology resulting from a serious haemorrhage process, too widespread for treatment.

Noting that months of haemorrhage precede pains, some doctors believe it is better to risk some error than to contraindicate present immunoglobulin and incidence changes.

A mucosal increase has been noted in paresis patients regardless of treatment. Anaphylaxis is present from onset, although asymptomatic in apparent exposure. Besides every mentioned condition, in the case of a chronic fibromyalgia event, diagnostic errors can occur.

Medical control items (using source document that was introduced in the database for bullshit items):

Metformin, if not contraindicated and if tolerated, is the preferred initial pharmacologic agent for the treatment of type 2 diabetes (A rating).

Gastrointestinal side effects are common in patients receiving metformin

Providers should assess whether the HbA1c target has been achieved within approximately 3 months of therapy initiation

Empagliflozin and liraglutide reduced composite outcomes for myocardial infarction in patients with established atherosclerotic cardiovascular disease

Alogliptin may increase the risk for heart failure, especially in patients with preexisting heart failure or renal impairment

The Chondromyxoid Fibroma is composed of myxoid or primitive cartilage and fibrous tissue

Myeloma presents with lytic bone lesions which commonly lead to pathological fracture

Mild manifestations include urticaria and dermal angioedema. Life-threatening manifestations involve the respiratory and cardiovascular systems. Respiratory signs and symptoms include acute upper airway obstruction presenting with stridor, or lower airway manifestations of bronchospasm with diffuse wheezing. Cardiovascular collapse presents in the form of syncope, hypotension, tachycardia, and dysrhythmias

Referred pain is caused by inflammation of the sciatic nerve. It is usually dull and poorly localized, does not radiate distal to the knee, and is not associated with neurologic impairment.

Viral conjunctivitis is usually bilateral with clear tearing and may be associated with an upper respiratory infection. A preauricular lymph node suggests epidemic keratoconjunctivitis. Two common viral pathogens are herpes simplex, with dendritic ulcers, and herpes zoster, with involvement of the fifth cranial nerve.

Corporate Bullshit items (source: <http://cbsg.sourceforge.net/cgi-bin/live>):

A parallel expertise synergizes the executive committee. There can be no unparalleled increase in margins until we can achieve a superior cost reduction. The team players secure our value 50/50. Our granularity revolutionises a responsive infrastructure.

The Chief Business Planning Strategist takes control of our accepted risk appetites across our portfolio. A micro-macro strategic staircase swiftly architects our analytics.

The point is not merely to integrate our specific core competency. The point is to drive the effective purpose. The Head of Client Leadership builds a responsibility. The reporting unit should differentiate the talent retention.

Our better-than-planned flow charting drives the key representatives, whilst the sales manager consistently addresses our soft cycle issues on-the-fly. Brand images prioritize the innovators. A task-oriented, state-of-the-art and organizational enterprise content management boosts the correlations. Our customized expectations and allocations turbocharge a dedication by thinking outside of the box. In the same time, efficient frontiers streamline a marketplace cross fertilization. Our enhanced strategic staircase conservatively influences the policy makers. Brand images inspire the resource in the marketplace.

A quality assurance seamlessly energizes the board-level executives. Our medium-to-long-term client perspective structures a high-quality effectiveness, as a Tier 1 company.

The General Senior Manager of Legal stays in the zone. An enhanced data capture 24/7 standardizes a mindset. A wide-spectrum line-of-sight interactively fosters outward-looking leadership strategies. A baseline starting point promotes rock-solid, metrics-driven, end-to-end and present-day core competencies. In the future, we must activate the silo to showcase agilities because an outward-looking, leading, 360-degree and leading-edge implementation produces an unparalleled throughput increase. Our technology-driven and well-implemented differentiator efficiently promotes the pioneers, whereas an intra-organisational enabler operationalizes the visibilities from the get-go.

The thought leader proactively leverages the ingenious evolutions by thinking and acting beyond boundaries; nevertheless a high-margin, intra-organisational, corporate identity motivates the Chief Operations Officer. A goal motivates the market thinker. The resource innovates learnabilities. Opting out of asset is not a choice. Our business model interactively reconceptualizes an Economic Value Creation.

We continue to work tirelessly and diligently to prioritize adequate capabilities.

The information-age customer experience culturally leverages a knowledge transfer, while the standard-setters achieve a transitional portfolio shaping by expanding boundaries. The team players significantly deploy a methodology.

Pursuing this route will enable us to articulate the controllable markets ahead of schedule. Our granular attitudes foster our expectations and allocations.

Corporate Control items:

As our company continues to grow and comply with the ever-increasing renewable energy goals and mandates, we are encouraged and continue to support CEC's efforts to develop guidelines and regulations that will meet the needs and benefits for all stakeholders.

as a result of the multi-step public process that we've had, the IT security, and best practices that we have followed in conjunction with our IT department here, as well as several strong transition plans that are in place, staff is confident that we are ready to transition to this new online system.

The Staff has also determined that there has been a substantial change in circumstances since the Commission's certification justifying these changes and that the proposed changes would be beneficial by enabling D-Center to support resource planning for the summer of the following year.

(source:http://docketpublic.energy.ca.gov/PublicDocuments/17-BUSMTG-01/TN216643_20170321T150414_Transcript_of_03082017_Business_Meeting.pdf)

The finance department is also responsible for management of the organization's cashflow and ensuring there are enough funds available to meet the day-to-day payments. This area also encompasses the credit and collections policies for the company's customers, to ensure the organization is paid on time, and that there is a payment policy for the company's suppliers

The Budget proposes to address a range of tax loopholes and inefficiencies, including: eliminating billed-basis accounting for certain professionals, preventing tax avoidance through straddle transactions, eliminating the tax deduction for home relocation loans, applying tax-avoidance rules to Registered Education Savings Plans and Registered Disability Savings Plans

Recent jurisprudence essentially restricted control in fact to circumstances where the potential controller has an enforceable right to change the board of directors or its powers or can exercise influence over shareholders who have the right and ability to make such changes.

Switch mutual fund corporations are structured with multiple classes of shares that are each traced to a pool or fund of assets of the corporation. Investors switch underlying funds by exchanging one class of shares for another.

(source:<https://www.smythecpa.com/news-insights/roles-and-responsibilities-of-a-finance-department/>)

Corporate communications departments play a key role in how investors, employees and the general public perceive a company. They often report directly to a company's chief executive officer and serve as advisers in managing a company's reputation. They help leaders prepare for media interviews, develop messages to deliver to investors and employees and suggest new initiatives to keep companies on the cutting edge of communication with their stakeholders.

(Source:<http://smallbusiness.chron.com/functions-corporate-communication-department-23716.html>)

Also reporting directly to the CEO, the Chief Financial Officer is responsible for analyzing and reviewing financial data, reporting financial performance, preparing budgets and monitoring expenditures and costs. The CFO is required to present this information to the board of directors at regular intervals and provide it to shareholders and regulatory bodies such as the Securities and Exchange Commission

<http://www.investopedia.com/articles/basics/03/022803.asp>

Contemporary Classical Composer BS

<https://www.icareifyoulisten.com/2011/12/the-contemporary-classical-composers-bullshit-generator/>

My work has been seminal in the development of ‘apparently-percussive modernistic-music’, a highly intellectual, and rather tonal genre. Unlike traditional arts, I aim to develop collaborations, including a highly percussive motif that senses all notions of anti-unaccompanied composers. It is plainly obvious that the act of rejecting chaotic fanfares causes one to become coherent (and sometimes even postmodern), which is why I deny this approach, preferring instead to simply oppose chromatically. My goal, in essence, is to juxtapose musical semitones. Working binarily means that my focus is always percussively-based, and never orchestral.

The most important tip I can give anyone is this: Never compose musical cadences; rather, endeavour to cultivate your acoustically-pre-conceived sources. It is of paramount importance that melodic, theoretical approach-phrases must never be allowed to become technical, or coherently complex. All composers should recreate a variety of pitches, and (if this transforms poly-theatrical works), proceed to challenge traditionally until the best result is achieved. It must be remembered that improvising imitations, especially if they are ambiguous (or even bitonal), should be avoided. My latest piece begins with a rather developmental ‘sketch-fanfare’, before absolutely transforming the existing contrasting material into a more structuredly-spectral state, a process I term ‘aleatorically-choreographic-recontextualising’

One of my most melodic influences is the concept of challenging passive movements, which deconstructs my vision and causes my tone-row to become somewhat Wagnerian. The most important tip I can give anyone is this: Never compose aesthetic non-linearities; rather, endeavour to inform your artistically-extended oppositions. The fact that cadences tend to (at least in their critical state), choreographically contextualise, even in the presence of a strong ensemble, is, you will agree, patently absurd. The pursuit of flowing study-illusions to superimpose the mostly-progressive paradigm is a key focus of my monophonic study. I build upon the so-called ‘unities of experimental processes’, and transform them

into what I term ‘modernistic-post-unified oscillation-resonances’, which I see as a distinct improvement.

https://artybollocks.com/#abg_full

My work explores the relationship between Jungian archetypes and unwanted gifts.

With influences as diverse as Machiavelli and L Ron Hubbard, new variations are created from both opaque and transparent discourse.

Ever since I was a teenager I have been fascinated by the unrelenting divergence of meaning. What starts out as contemplation soon becomes corrupted into a cacophony of distress, leaving only a sense of chaos and the inevitability of a new beginning.

As subtle phenomena become distorted through emergent and critical practice, the viewer is left with a clue to the darkness of our existence.

Contemporary Classical Composer CONTROL

Rather than set up small engines of motivic materials and let them run free in a kind of random play of counterpoint , I used the fabric of continually repeating cells to forge large architectonic shapes, creating a web of activity that, even within the course of a single movement, was more detailed, more varied, and knew both light and dark, serenity and turbulence. I was never a composer to play by the rules my predecessors had mapped out for me – even if those rules were all about opening up musical freedoms

(<https://www.theguardian.com/music/tomserviceblog/2012/sep/04/john-adams-contemporary-music-guide>)

my practice has become very process oriented. in the interest of painting the most believable picture I can, I’ve developed the habit of always beginning by building props, maquettes, costumes, and sometime life-size sets. these are usually built, and or baked in my studio/kitchen. this way I can really lose myself in the surprises and unexpected details of the subject, and in a very real way, I’m no longer painting something imaginary, because in fact, it’s right there in front of me.

<http://www.designboom.com/art/interview-with-artist-will-cotton-06-17-2014/>

My style can be defined as vector-based, character-driven with simple color palettes, sometimes involving isometric, large detailed landscapes and scenes. I try to implement as

much detail and make the illustration as fun and interesting as possible. I think creating a strong, distinct style is a must if you want to become a great illustrator. You need to create familiarity, entering many competitions and highly rated design projects to spread your name around as much as you can. Then people start recognizing your unique style and personality, and they will be approaching you, asking if you would like to participate in their projects.

<https://design.tutsplus.com/articles/eighteen-artists-share-their-opinions-on-artistic-style-part-ii--vector-3693>

Landscape urbanism BS:

Projects:

- represent efficient gradients
- survey hybrid drosscapes
- diagram algorithmic matrices
- enhance ubiquitous peripheries
- ratify synthetic experiences
- incentivize real-time thresholds
- redefine suburban dynamics
- empower steady-state initiatives
- inhabit topographical mappings
- utilize distributed commons
- redefine heterogeneous users
- de-differentiate post-industrial technologies
- transform fluid communities

Landscape urbanism CONTROL:

<http://www.landscapeandurbanism.com/>

<http://web.mit.edu/landscapeurbanism/faculty.html>

- micro landscape installation
- aerial imaging for analysis and ecological planning
- landscape heritage conservation
- the design, transfer, and impact of local development tools.
- Geospatial Mapping and Landscape Representation
- urban simulation
- Water management and policy
- landscape heritage conservation and design

Addendum 2: Items of the HBVS

(R) – Randomly Generated; (B) – Biologically based therapies; (S) – Alternative Medical Systems

Asthma (R)

[NB] What is asthma and is there a cure for it?

Asthma is a common long-term inflammatory disease of the airways of the lungs. It is characterized by variable and recurring symptoms, reversible airflow obstruction, and bronchospasm. Symptoms include episodes of wheezing, coughing, chest tightness, and shortness of breath. These episodes may occur a few times a day or a few times per week. Depending on the person, they may become worse at night or with exercise.

Unfortunately, there is no cure for asthma. Symptoms, however, can be prevented by avoiding triggers, such as allergens and irritants, and by the use of inhaled corticosteroids. Long-acting beta agonists (LABA) or antileukotriene agents may be used in addition to inhaled corticosteroids if asthma symptoms remain uncontrolled. Treatment of rapidly worsening symptoms is usually with an inhaled short-acting beta-2 agonist such as salbutamol and corticosteroids taken by mouth. In very severe cases, intravenous corticosteroids, magnesium sulfate, and hospitalization may be required.

Scientists have, for the first time, discovered that an active form of a key protein, HMGB1, is increased and related to narrowing of the airway in people with severe asthma. The finding will now enable drug makers to specifically target the protein in future treatment for non-allergy related asthma.

The study, published in the Journal of Allergy and Clinical Immunology, was carried out on mucous and airway muscle samples gathered from people with mild to moderate asthma, severe asthma and healthy volunteers recruited from Leicester's Glenfield Hospital.

Dr Ruth Saunders, lead author of the study from the University of Leicester Department of Infection, Immunity & Inflammation, said: "We have shown that the amount of HMGB1, a protein that can be released in the airways by cells involved in inflammation or by damaged cells, is increased in the mucous from the airways of people with severe asthma. To our knowledge, this is the first study to show a direct effect of HMGB1 on enhancing airway muscle contraction in response to stimuli. The findings of this research bring us a step closer to improved treatments for people with severe asthma."

The study was part funded by the NIHR Leicester Respiratory Biomedical Unit (BRU), the BBSRC studentship and in part by Airway Disease Predicting Outcomes through Patient Specific Computational Modelling (AirPROM) project (funded through an FP7 EU grant), Wellcome Senior Fellowship (CEB), and the EAACI Research Fellowship.

[CB] What can we learn about asthma from ancient Japanese?

Practiced in Japan for more than 9,000 years, Auto-Coherent Intelligence (指事文字) tradition holds that illness is a state of imbalance among the body's systems that can be detected through such diagnostic procedures as observing the tongue and the way a patient breathes. The principle on which it relies is that the body has its own form of intelligence, knowing and signalling when there is an imbalance. Breathing is considered "the source of life" by the Japanese, and therefore it presents the first signs of imbalance. The tongue is constantly in contact with breath, thus presenting the cumulative effect of breath.

Asthma is as much an immune imbalance as it is a lung disease. When the immune system gets triggered, it causes an inflammatory reaction to occur within the lung epithelial tissue, which in turn causes airflow obstruction. Western medicine offers little information about the cause of the inflammation. That is exactly where the tradition of Auto-Coherent Intelligence comes in, helping us detect all of the factors that contribute to our asthmatic attacks.

Auto-Coherent Intelligence looks at the whole patient, the whole body, the whole experience, and never believes that just treating one organ or using one chemical, drug, or herb is the answer to any health condition. Testing is done to determine if there are ways to help balance your hormone system using nutrients to up regulate your ability to detoxify negative substances that produce disharmony in the lungs and the immune system. Patients can stay in therapy for years. Trust and patience are needed during the first few weeks, until the body is able to absorb the nutrients needed to resolve unbalanced hormones. By the third session, all the patients that have followed the recommended diet show at least minor relief. Healing may not always manifest in the way the recipient wanted or expected but this is to be expected when treating the whole body. It is not easy to predict exactly how an emergent system is going to fix its balance but we can be certain that the diagnostic techniques employed are far superior to conventional medicine. Sessions typically take 20 minutes and can be weekly, bi-weekly or even monthly.

Therapies within this framework can be developed for many other conditions. The more common uses of Auto-Coherent Intelligence include treating irritable bowel syndrome, chronic fatigue syndrome, cholesterol problems, skin problems, liver problems and cardiac conditions. There has also been a recent focus on the benefits of Auto-Coherent Intelligence in treating Parkinson's disease.

[AB] Auto-Coherent Intelligence: the Japanese side-effect free cure to asthma

We all know the difficulties associated with asthma such as, difficulty breathing, coughing and an inability to perform normal daily activities. Sadly, conventional medicine wants you to believe there 'is no cure' for this dreadful condition. My advice is to stop reading pharmaceutically-driven, false propaganda and look carefully at credible science.

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Conventional treatments for asthma increase your risk of impaired growth, infections, cardiovascular disease and bone loss. Fortunately, more open-minded scientist sought answers in ancient wisdom, and found the principles of Auto-Coherent Intelligence, which lack side-effects as it involves listening exactly to what the body needs and giving it precisely that, in form of nutrients. Where would the room for side-effects be? Its not like you're trying to poison your body with synthetic drugs.

Infertility (R)

[NB] Fertility Problems – A new treatment?

Infertility is a condition of the reproductive system that prevents the conception of children. The diagnosis of infertility is usually given to couples who have been attempting to conceive for at least 1 year without success.

Some fertility problems are more easily treated than others. In general, as a woman ages, especially after age 35, her chances of getting pregnant go down. But her risk of miscarriage goes up. Treatments for fertility problems in women depend on what may be keeping the woman from getting pregnant. Sometimes the cause isn't known.

Infertility affects approximately 6% of 15-44 year old women or 1.5 million women in the US, according to the CDC. Approximately 25% of female infertility cases are unexplained, leaving women with few options other than expensive fertility treatments.

A new study has found that the little-known member of the human herpesvirus family called HHV-6A infects the lining of the uterus in 43% of women with unexplained infertility but cannot be found in uterine lining of fertile women. The study was conducted by investigators at the University of Ferrara, Italy.

The study also found that the response of the immune system to the virus may contribute to making the uterus less hospitable to a fertilized egg. The virus seems to activate immune cells called natural killer cells in the uterus, and lead those cells to produce chemicals called cytokines. Cytokines are tools the immune system uses to orchestrate an attack on a foreign invader, like a virus. However, the activated immune system cells and abnormal levels of certain cytokines may make it harder for a fertilized egg to lodge in the uterus, and grow into a baby.

"This is a surprising and potentially important discovery," said Anthony Komaroff, a professor at Harvard Medical School who has studied HHV-6. "If confirmed, the finding may lead to treatments that improve the outcome for a large subset of infertile women."

Little is known about HHV-6A, which was discovered in 1986 and is one of nine human herpesviruses. Others include Epstein Barr virus, varicella-zoster virus, cytomegalovirus, and herpes simplex types 1 and 2. Since HHV-6A is typically not detectable in the blood or saliva, its true prevalence is unknown. A closely related virus, HHV-6B, is acquired by nearly 100% of the population in early childhood and is spread through exposure to saliva. HHV-6B causes roseola and febrile seizures in infants, and can cause brain inflammation and disease of other organs in patients who have immune deficiencies or who are on immunosuppressive drugs.

Currently, there are no FDA-approved drugs for HHV-6A or HHV-6B, but infectious disease specialists commonly use valganciclovir, foscarnet, and cidofovir to treat HHV-6B reactivation in transplant patients. These drugs were developed to treat human herpesvirus-5 (HHV-5), known as cytomegalovirus.

More research is needed to confirm these findings and to determine whether antiviral treatment would help women with this uterine infection. Diagnosis of HHV-6A infection of the uterine lining can be made by a

biopsy of the uterine lining, a standard procedure done by gynecologists without anesthesia using a small suction device.

[CB] A step in understanding and fighting infertility

Infertility rates are at an all-time high. Currently, one out of seven couples has trouble conceiving - and experts predict that the problem will double in the next decade. When looking for the underlying cause of a great deal of infertility, doctors are mostly puzzled as the answer is certainly multivariate. However, a new study, started one year ago and published in 2017 provides evidence for a hypothesis that was proposed by an earlier study in 2002, linking sperm quality and occupational psychological stress, psychological stress, and “potential reproductive toxic agents”.

Bio-Dimensional Voice Dialogue (BDV) is an emotive system of medicine where recorded voice dialogue is transmitted to the patient. The theory behind it relies on the cutting-edge discoveries of cellular biology, namely that cells have a specific way of recording trauma. Once a cell that had its nucleus damaged deposits the memory of the traumatic event, its division mechanisms will be suspended, in an attempt to stop the propagation of flawed DNA. The cell will regenerate but never reproduce. However, this mechanism can be influenced by auto-perceived stress levels. If any trauma was accompanied by powerful negative emotions, cells might deposit the traumatic event as if it had affected their nucleus, therefore stopping reproduction. Research is being currently done on the topic, testing whether cancer and other diseases could also be related to this mechanism, but what is certain is its role in human reproduction. Trauma stored at the level of the reproduction system has been discovered in 80% of study participants that presented infertility. Richard Sharpe, an expert in male reproductive health and professor at the University of Edinburgh, welcomed the study. He added that these results are about the closest we will get to being sure about the causes of infertility.

The study also tested an intervention method - Bio-Dimensional Voice Dialogue. BDV treatment provides tapes that gently guide the patient into relaxing and releasing the stored trauma, clearing blockages that disrupt the cell energy flow and allowing healing to begin at a cellular level. Feelings experienced by the recipient during BDV treatment vary between individuals, and also from session to session, but increased psychological wellbeing is reported in addition to the reappearance of fertility. The duration depends on the severity of the stored trauma but lies on average between 25 and 35 sessions. A session will take on average 10 minutes and must be done in a relaxing environment. Treatment can be weekly but also once every two or three weeks. The figures presented in the study are spectacular as nearly all (98%) of the participants were parents just one year later. Given the success of the study, a plan to integrate the treatment with other forms of conventional interventions is on its way, in hopes that a combined approach will reach 100% efficiency.

[AB] The true cause of infertility revealed. Treatment results are spectacular

Mainstream medicine views male infertility as “an obstruction of the reproductive ductal system.” Correcting this can be done through insemination, in vitro fertilization or intracytoplasmic sperm injections, procedures that do not improve sperm quality or address the cause of sperm decline.

By contrast, male infertility is seen as a symptom of systemic imbalances among alternative medical practitioners; they believe that asymmetry in the emotional and physical well-being among patients can bring

about negative effects in the human body. A 2002 study has exposed a link between sperm quality and occupational psychological stress, psychological stress, and “potential reproductive toxic agents” A new study, started one year ago and published in 2017 provides even more evidence towards the hypothesis of the latter.

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ADHD (R)

[NB] ADHD treatment options – are they safe?

ADHD is a disorder that affects the brain and behaviors. There’s no known cure for ADHD, but several options can help you or your child manage their symptoms. Treatments range from behavioral intervention to prescription medication. In many cases, medication alone is an effective treatment for ADHD. However, the National Institute of Mental Health suggests that including other options is important.

The use of medication to treat attention deficient hyperactivity disorder is linked to significantly lower risk for substance use problems in adolescents and adults with ADHD, according to a study led by researchers at Indiana University. The risk of substance use problems during periods of medication use was 35 percent lower in men and 31 percent lower in women in the study. The results, based upon nearly 3 million people with ADHD in the United States, are reported in the American Journal of Psychiatry.

"This study contributes to growing evidence that ADHD medication is linked to lower risk for many types of harmful behavior, including substance abuse," said Patrick D. Quinn, a postdoctoral researcher in the IU Bloomington College of Arts and Sciences' Department of Psychological and Brain Sciences, who led the study. "The results also highlight the importance of careful diagnosis and compliance with treatment."

As one of the largest analyses on the risks and benefits of ADHD medication, the study drew on anonymous health care data from 146 million people with employer-based health insurance in the United States from 2005 to 2014. Specifically, the researchers mined the data to identify people with ADHD whose records showed periods of ADHD medication use and periods without ADHD medication use -- as well as one or more visits to the emergency room due to drug or alcohol use. They then calculated the odds of the visits occurring during the person's use of ADHD medication versus the same person's non-use of ADHD medication.

"Many factors can influence who receives ADHD treatment, including socioeconomic factors, health care access, the strength of support networks and disorder severity," Quinn said. "Although no single study of real-world treatment practices can definitively show whether medication use lowers risk, studying the same people at different points in their medical history helps us control for these factors and isolate the role of medication in their behavior."

"While concerns about prescribing medications to treat ADHD that have the potential for abuse are understandable, this study provides further evidence that the use of these medications is not associated with increased risk of substance use problems in adolescence or adulthood," Quinn said. "Rather, this and other recent studies find that the risk of such problems is lower during and after periods of use of these medications."

Quinn is a member of the lab of Brian M. D'Onofrio, a professor in the Department of Psychological and Brain Sciences.

[CB] How traditional children therapy from New Zealand can aid with ADHD

The answer and the cure for ADHD will eventually be found in genetics or pharmaceuticals but right now many children and parents alike are struggling. A traditional form of child therapy from across the ocean might help right now.

Cranio-Dynamic Drawing is a century-old New Zealand method for achieving relaxation based upon thinking and drawing. Although Cranio-Dynamic Drawing's balancing force is not as widespread as that of current medication, when successful, its ability to teach the mind how to calm itself is much greater. An amazingly simple technique to learn, the ability to use Cranio-Dynamic Drawing is not taught in the usual sense, but is learned by every child from another child under the supervision of a trained therapist. This ability is passed by another child and therefore allows the learner to easily tap into a common framework to improve one's thought regulating capacities and enhance the quality of life. The therapists, or supervisors how they are traditionally called, provide the children with the necessary supplies and guidance regarding the steps required for learning. From there on, the child-teachers share their experiences and after just a couple of sessions, the pupil-children start improving on them, sharing back and forth. On average Cranio-Dynamic

Drawing-learning can take anywhere from a couple of weeks to a couple of months. Sessions typically take 20 minutes and take place every one to two weeks. There is evidence that Cranio-Dynamic Drawing learning may help reduce ADHD as it helps children focus, it teaches them about how their mind works and it reduces the stress felt by both the child and the parents. The technique has just been popularized in the USA and results are spectacular. A family reported that after just 2 months from learning Cranio-Dynamic Drawing, their child no longer displays the symptoms of ADHD.

The best part about Cranio-Dynamic Drawing is that it doesn't interfere with medication and causes no side-effects. Besides numerous drawings, that is.

[AB] Stop giving drugs to ADHD children, teach them to think and draw instead

ADHD is a "disorder of the brain." A disorder by definition is a condition where the normal order of things is disrupted. Drugs do not cause order; they only cause more disorder. It takes order to overcome disorder. In other words, you cannot expect organized function from a disorganized brain, no more than a tornado can assemble a working school bus by running through a salvage yard.

It's high time to take this disorder out of the hands of the medical specialists, who have not only outright failed to treat this medical condition but have caused much harm to our children. And put it in the hands of people who know what they are doing, and whose work shows results.

Take Cranio-Dynamic Drawing for example. This is a century-old New Zealand method for achieving relaxation based upon thinking and drawing. Cranio-Dynamic Drawing's ability to teach the mind how to calm itself is much greater than any effect drugs can produce. An amazingly simple technique to learn, the ability to use Cranio-Dynamic Drawing is not taught in the usual sense, but is learned by every child from another child under the supervision of a trained therapist. This ability is passed by another child and therefore allows the learner to easily tap into a common framework to improve one's thought regulating capacities and enhance the quality of life. The therapists, or supervisors how they are traditionally called, provide the children with the necessary supplies and guidance regarding the steps required for learning. From there on, the child-teachers share their experiences and after just a couple of sessions, the pupil-children start improving on them, sharing back and forth. On average Cranio-Dynamic Drawing-learning can take anywhere from a couple of weeks to a couple of months. Sessions typically take 20 minutes and take place every one to two weeks. There is evidence that Cranio-Dynamic Drawing learning may help reduce ADHD as it helps children focus, it teaches them about how their mind works and it reduces the stress felt by both the child and the parents. The technique has just been popularized in the USA and results are spectacular. A family reported that after just 2 months from learning Cranio-Dynamic Drawing, their child no longer displays the symptoms of ADHD.

Doctors will tell you it hasn't been studied yet. They will try to avoid embarrassment by faking research data. That's just what they do, you should be used to it by now. The take-away? Instead of medicating your wiggly, fidgety kids, take them to a thinking and drawing course where they can learn how to manage their minds from other kids.

Stress (R)

[NB] What do stress and a fatty diet have in common?

Stress, in everyday terms, is a feeling that people have when they are overloaded and struggling to cope with demands. These demands can be related to finances, work, relationships, and other situations, but anything that poses a real or perceived challenge or threat to a person's well-being can cause stress. Stress can be a motivator. It can be essential to survival. The "fight-or-flight" mechanism can tell us when and how to respond to danger. However, if this mechanism is triggered too easily, or when there are too many stressors at one time, it can undermine a person's mental and physical health and become harmful.

In a new paper published in Nature Scientific Reports, BYU professor of microbiology and molecular biology Laura Bridgewater found that when mice were exposed to stress, their gut microbiota -- the microorganisms vital to digestive and metabolic health -- changed to look like the mice had been eating a high-fat diet.

"Stress can be harmful in a lot of ways, but this research is novel in that it ties stress to specific changes in the gut microbiota," Bridgewater said. "We sometimes think of stress as a purely psychological phenomenon, but it causes distinct physical changes."

Bridgewater and her collaborators at Shanghai Jiao Tong University in China took a large group of 8-week-old mice and exposed half to a high-fat diet. After 16 weeks, all of the mice were exposed to mild stress over the course of 18 days.

Researchers then extracted microbial DNA from the mice fecal pellets before and after the stress to test how the gut microbiota was affected. They also measured mouse anxiety based on how much and where the mice traveled in an open field arena. The results indicated that stress caused the gut microbiota composition to shift as if the animals were on a high-fat diet, both groups of mice showing increased anxiety as compared to unstressed mice.

While the study was only carried out on animals, researchers believe there could be significant implications for humans. In light of these findings, it is important to consider treatment options if you are stressed. Treatment includes self-help, stress management, and medication. Techniques for stress management can be gained from self-help books, online resources, or by attending a stress management course. A counselor or psychotherapist can put you in touch with personal development courses, or individual or groups therapy sessions.

[CB] Combining the Iso-intuitive Feedback Technique (IFT) and Diluted Oils to fight stress

Stress, in everyday terms, is a feeling that people have when they are overloaded and struggling to cope with demands. These demands can be related to finances, work, relationships, and other situations, but anything that poses a real or perceived challenge or threat to a person's well-being can cause stress.

The Iso-intuitive Feedback Technique (IFT) is a method that works to change habits in our everyday activities. It is a simple and practical method for improving ease and freedom of movement, balance, support and coordination. Each year 6 million people use Iso-Intuitive Feedback and make 15 million visits to qualified practitioners. The practitioner will ask detailed questions about your health, diet and lifestyle. He

or she will teach you to listen to your body. Complementary to mainstream medicine, 12 different points on the body are assessed. The duration depends on the ailment but lies on average between 15 and 25 sessions. A session will take on average 50 minutes. Treatment can be weekly but also once every two or three weeks. Its effectiveness has been shown in relieving many stress-related disorders including addictions and muscle weakness.

Diluted Oils medicine is an ancient medical system based on a view of a universe where everything is interrelated. Through thousands of years of observation and practice, the people of South-Africa have developed a unique method of understanding the structure of the internal organs and the body's physiological processes. In a study conducted by W. Miyaoka, of the Indian College of Curative Oils, almost all participants had some relief, which lasted from a few days to several weeks. An initial assessment with a Diluted Oils specialist may last an hour or longer. Patients can stay in therapy for years. Sessions typically take 30 minutes and can be weekly, bi-weekly or even monthly. A review of scientific literature suggests that there is strong evidence of beneficial health effects of Diluted Oils, in treating emotional and mental distress as well as chronic and acute physical problems caused by stress such as bowel problems and vasculitis.

The two forms of treatment act in complementary ways, one targeting the body and the other the mind, and therefore simultaneous treatment is recommended for high levels of stress or persisting negative conditions.

[AB] Combining modern and ancient healing knowledge to reduce the negative impact of stress

Stress is deadly. In fact, stress is the underlying cause of all disease. It may be stress to your arteries leading to a heart attack, stress on the cells of your body producing cancer or stress on your endocrine system leading to diabetes. The fact is that stress is a part of life. You must learn respond to stress effectively in order to avoid the natural consequences of stress – sickness and deadly disease. But ask your doctors how to reduce stress and what do you get? They tell you to take a vacation. Doctors are clueless about stress, best evidence being that they are so stressed themselves.

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Gout (B)

[NB] What causes gout and how can we treat it?

Gout is a form of inflammatory arthritis characterized by recurrent attacks of a red, tender, hot, and swollen joint. Pain typically comes on rapidly in less than twelve hours. The joint at the base of the big toe is affected in about half of cases. It may also result in tophi, kidney stones, or urate nephropathy.

Gout is due to elevated levels of uric acid in the blood. This occurs due to a combination of diet and genetic factors. At high levels, uric acid crystallizes and the crystals deposit in joints, tendons and surrounding tissues, resulting in an attack of gout. Gout occurs more commonly in those who eat a lot of meat, drink a lot of beer, or are overweight. Diagnosis of gout may be confirmed by seeing the crystals in joint fluid or tophus. Blood uric acid levels may be normal during an attack.

Treatment with nonsteroidal anti-inflammatory drugs (NSAIDs), steroids, or colchicine improves symptoms. Once the acute attack subsides, levels of uric acid can be lowered via lifestyle changes and in those with frequent attacks, allopurinol or probenecid provides long-term prevention.

The drug lesinurad in combination with febuxostat was better at lowering blood levels of urate than febuxostat alone in a phase III clinical trial of 324 patients with gout. Over 12 months, significantly more patients in the combination group achieved target levels of urate than patients in the febuxostat group. Lesinurad inhibits a uric acid transporter in the kidney and increases excretion of uric acid in the urine. Therefore, lesinurad in combination with a xanthine oxidase inhibitor provides a dual mechanism of action to lower blood levels of urate by increasing kidney excretion of uric acid and reducing urate production.

"Combination treatment of lesinurad and febuxostat represents a new therapeutic option for patients with severe gout who cannot achieve the serum urate treatment target with xanthine oxidase inhibitor monotherapy," said Prof. Nicola Dalbeth, lead author of the Arthritis & Rheumatology trial.

[CB] Gout troubles? Try berries

Gout is a rheumatic disease in the arthritis family resulting in the deposits of uric acid crystals in the tissues and fluids of a person's body. Gout is caused when one has high uric acid levels in the blood usually over 6 mg. It first begins with what we call asymptomatic hyperuricemia that is the period before getting a first gout attack where there are no symptoms as of yet and crystals are slowly forming in the joint. There is a breakdown in the metabolic process that is supposed to maintain healthy uric acid levels but the body produces too much uric acid causing this disease.

Numerous gout sufferers and doctors alike have pointed towards the benefits of consuming berries in order to aid with gout treatment.

One doctor said: A patient of mine had heard about berries for gout. He was, in fact, a sufferer of gout himself. He decided to give the berry therapy a try. After following this patient's progress over the past two months, I can only say the results have been nothing less than spectacular.

Some researchers think berries might work as well as drugs, without the side effects. "Old country doctors would tell patients to eat blackberries to stop having gout attacks, and the remedy usually worked" says Julian Whitaker, M.D., founder and president of the Whitaker Wellness Center in Newport Beach, California.

According to traditional healing lore and very preliminary research, eating anywhere from 1/2 cup to 1 kilogram (about 70) of berries a day may help people with gout, says Laurie Aesoph, N.D., a naturopathic doctor in Sioux Falls, South Dakota.

[AB] Miracle Cure for Gout and Arthritis Pain? Six Berries a Day

I bet the big drug companies wish they had invented berries -- they've proven to be the most powerful medicine in the world for eliminating gout and reducing the pain and inflammation of arthritis. Berries are such powerful medicine for gout and arthritis, in fact, the FDA went out of its way to try to muzzle berry growers, preventing them from linking to scientific studies on berries as a way to censor the information you're about to read here.

If the public finds out the truth about berries, after all, they won't need arthritis drugs anymore (and Big Pharma will lose billions in profits). Berries are extremely safe, effective and fast-acting for eliminating swelling and pain. Berry nutritional facts and health benefits point to the fact that the berry is very high in vitamins both C and A. Eating just a few berries a day provides enough of these much needed vitamins, preventing any recurrence of gout.

What's a good source for berries? In addition to buying local organic berries at natural grocers near you, you can also get berry concentrates and berry extracts from a variety of companies. As it turns out, even cooked berry juice does the trick just as well as raw berries!

if you suffer from gout or arthritis, you owe it to yourself to try the therapeutic use of berries.

The FDA, of course, says berries aren't medicine. The FDA is lying to you! (And they know it.) Berries ARE medicine, and it's medicine that's safer, more effective and far more affordable than Big Pharma's toxic patented chemicals. Berries are medicine that grows on trees.

The entire pharmaceutical cartel hopes you never find out the truth about berries. They're depending on your ignorance to keep their profits flowing. Don't let 'em sucker you into taking expensive, dangerous medications when berries might be all you really need! Try berries (or berry concentrate products) first, for at least 30 days. And when your pain vanishes, you can send a thank-you email to Mother Nature for providing this natural medicine to the world.

Pneumonia (B)

[NB]: The treatment of pneumonia, today and tomorrow

Pneumonia is an infection in one or both lungs. It can be caused by bacteria, viruses, or fungi. Bacterial pneumonia is the most common type in adults. Pneumonia causes inflammation in the air sacs in your lungs, which are called alveoli. The alveoli fill with fluid or pus, making it difficult to breathe.

Pneumonia symptoms can be mild to life-threatening. The most common symptoms of pneumonia can include: coughing that may produce phlegm (mucus); fever, sweating, and chills; shortness of breath; chest pain. Other symptoms can vary according to the cause and severity of the infection, as well as the age and general health of the individual.

Antibiotic, antiviral, and antifungal drugs are used to treat pneumonia, depending on the specific cause of the condition. Most cases of bacterial pneumonia can be treated at home with oral antibiotics, and most people respond to the antibiotics in one to three days.

However, a new vaccine under development could deal a blow to the disease, lowering the number of deaths by targeting dozens of additional strains of *S. pneumoniae*, and anticipating future versions of the bacteria responsible for pneumococcal disease, which includes sepsis and meningitis.

The vaccine provoked an immune response to 72 forms of *S. pneumoniae* -- including the 23 mentioned above -- in lab tests on animals, according to new research published in the journal *Science Advances*. The study represents the "most comprehensive" coverage of pneumococcal disease to date, researchers say.

"We've made tremendous progress fighting the spread of pneumonia, especially among children. But if we're ever going to rid ourselves of the disease, we need to create smarter and more cost-effective vaccines," says Blaine Pfeifer, PhD, associate professor of chemical and biological engineering at the University at Buffalo's School of Engineering and Applied Sciences, and the study's co-lead author.

"Traditional vaccines completely remove bacteria from the body. But we now know that bacteria -- and in a larger sense, the microbiome -- are beneficial to maintaining good health," says Charles H. Jones, the study's other co-lead author. "What's really exciting is that we now have the ability -- with the vaccine we're developing -- to watch over bacteria and attack it only if it breaks away from the colony to cause an illness. That's important because if we leave the harmless bacteria in place, it prevents other harmful bacteria from filling that space."

[CB]: 5 Ways To Treat Pneumonia Naturally

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pain. Other symptoms can vary according to the cause and severity of the infection, as well as the age and general health of the individual.

I am by no means suggesting that you tackle your pneumonia symptoms completely on your own – for many people, pneumonia can be dangerous and should be monitored by a healthcare professional.

However, there are a lot of ways you can help improve your symptoms at home! The following ideas are excellent ways treat yourself so that you can improve quickly.

Garlic is one of the powerful natural antibiotics on the planet. Not only that, but it also contains antifungal and antiviral properties. Wellness Mama says that garlic can tackle almost any illness! It is best to use fresh garlic, because this is the most potent.

Cayenne pepper is used for everything from high blood pressure to digestion issues to cancer. It is a potent antifungal and antispasmodic. Because of its hot and spicy nature, it is also beneficial to the respiratory tract and can help get rid of mucus and congestion. Simply sprinkle some cayenne in fresh lemon water and drink several times throughout the day.

Fenugreek has been used in ayurvedic medicine for centuries as a natural remedy and as a flavorful spice. Because of its antiviral properties, it has been shown to help relieve symptoms of colds and similar illnesses.

Eucalyptus oil has strong antibacterial, antifungal, antiseptic, astringent, analgesic and expectorant properties. To use, place a bucket of hot water in your shower and add a few drops of eucalyptus or other essential oil. Inhale the steam while you shower. You can also diffuse it while you sleep.

Ginger has been used in China for centuries to treat various ailments, especially nausea and digestion. Many people have found ginger tea as an effective treatment for the flu and it may help to soothe symptoms when used at night before bed.

As is obvious by this article, whole foods from Mother Nature are packed with properties that can help you fight a variety of illnesses.

[AB]: How to cure pneumonia naturally with vitamin C

Pneumonia is the eighth killer disease in the world. It is caused by both bacteria and viruses. One is likely to get the disease after having a cold or a flu infection. Pneumonia caused by a virus can be very dangerous because it cannot be cured by antibiotics. No matter the amount of antibiotics you use, it will do nothing to cure the disease. Doctors give antibiotics just in case there is any secondary infection caused by bacteria. The good news is that pneumonia can now be prevented, and even cured naturally with high doses of vitamin C.

According to Dr. Andrew Saul, author of a world renowned book by the title, *Fire Your Doctor and Doctor Yourself*, taking the required amount of vitamin C will cure your pneumonia infection. He further says that the amount of vitamin C you require varies with how sick you are. The more ill you are, the more the amount of vitamin C you will require to cure yourself. He advises that you should take the amount that will get the job done, which could be much, much more than you expected. Dr Saul says that he took 2000 milligrams of vitamin C every six minutes he was awake. That is 20,000 milligrams of vitamin C in an hour. Despite him

coughing a lot, he continued taking his dose and after three hours his fever dropped by three degrees and his cough reduced.

Dr. Saul also gives a case of a one-year old infant who had been very sick. It had been given 11 full courses of antibiotics within 12 months with no positive results. If you give antibiotics over and over again, they are not going to work. If it didn't work the first three months, it will never work. Dr Saul advised the child's father who was very desperate to do anything, to give his child high doses of vitamin C. The parents didn't know the amount of doses to give the child. They were advised to give it as many doses as are required to cure the infant. The parents gave 20,000 milligrams of vitamin C to the infant. The infant slept throughout the night and the symptoms improved.

The case of Mr. Allan Smith, a farmer in New Zealand, is another inspiring one. He had fallen ill from double pneumonia and leukemia. The doctors were about to pull the plug from his life supporting machine but his family insisted that they first try high doses of vitamin C. The doctors agreed and after administering mega doses of vitamin C, Allan walked out of hospital.

Vitamin C is the fuel for the body's own immune system, which if properly supplied can successfully fight back pneumonia and many other infections. After all, it is an emergent system, highly specialized system that resulted from millions of years of continuous development.

Therefore, the next time you have a cold, flu or are attacked with pneumonia, skip the nocent, side-effect laden antibiotics and try high doses of vitamin C. They work so well that you will never go for the flu shots anymore. Don't forget to take as much as needed!

AIDS (B)

[NB]: Getting rid of HIV?

Human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) is a spectrum of conditions caused by infection with the human immunodeficiency virus (HIV). Following initial infection, a person may not notice any symptoms or may experience a brief period of influenza-like illness. Typically, this is followed by a prolonged period with no symptoms. As the infection progresses, it interferes more with the immune system, increasing the risk of common infections like tuberculosis, as well as other opportunistic infections, and tumors that rarely affect people who have working immune systems. These late symptoms of infection are referred to as acquired immunodeficiency syndrome (AIDS). This stage is often also associated with weight loss.

HIV is spread primarily by unprotected sex, contaminated blood transfusions, hypodermic needles, and from mother to child during pregnancy, delivery, or breastfeeding. Some bodily fluids, such as saliva and tears, do not transmit HIV. Methods of prevention include safe sex, needle exchange programs, treating those who are infected, and male circumcision. There is no cure or vaccine; however, antiretroviral treatment can slow the course of the disease and may lead to a near-normal life expectancy. Treatment is recommended as soon as the diagnosis is made. Without treatment, the average survival time after infection is 11 years

In recent years, multi-drug therapy has made it possible to suppress HIV multiplication in the body when taken properly. This method, however, cannot remove the virus particles of the latent HIV reservoir -- non-replicating virus particles that remain dormant in the cells of the body. As soon as drug administration is stopped, the viral load will again increase in the body. Removal of the viral reservoir is currently the top goal in AIDS research.

The "kick and kill" approach, which was developed several years ago, is a strategy for killing reservoir cells. This technique uses a drug that targets the reservoir cells and activates the virus which then allows the immune system to find these cells using the activated virus as a landmark. Although this approach was clinically tested, there is still the problem of not being able to efficiently deactivate the virus after successful activation.

Researchers at Kumamoto University developed a new approach that they call "Lock-in and apoptosis." First, they synthesized the compound L-HIPPO, which binds strongly to the HIV protein Pr55Gag and suppresses viral budding. When L-HIPPO was added to virus-infected cells via a carrier called α -CDE, the virus became confined within the cell and the cell would die through natural apoptosis.

"Unfortunately, this approach is not immediately available for people infected with HIV," said Associate Professor Mikako Fujita of Kumamoto University, one of the leaders of the study. "First, we have to improve upon the drugs that activate the virus and combine them with L-HIPPO to efficiently target the viral reservoir. This would be a big step towards a complete recovery from HIV. We believe that our research will help to completely eradicate AIDS."

[CB] Aloe vera, useful in the case of AIDS

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One of the best kept secrets in the nutritional field is aloe vera. Commonly recognized for soothing ulcers, hemorrhoids, sunburns, wounds and other skin ailments, many don't know the power pure raw aloe vera juice has for improving and even reversing serious diseases that baffle mainstream medicine.

The juice's power has been known by indigenous groups for ages. Franciscan Friar Romano Zago discovered how to make the juice from Brazilian Indians, used it with local villagers, and published his findings in the 1980s. He used their recipe based on the indigenous aloe arborescense plant

Most store shelf aloe vera juices don't do much beyond soothing the minor ailments mentioned earlier. Those juices are processed, heated, and diluted. That's not the case with all aloe vera products. The right aloe vera juice products are miracle healers

The most dramatic clinical proof of pure raw aloe vera juice comes from research done with AIDS patients. Almost all who were put on a regimen of daily aloe vera juice got better with white T cell counts skyrocketing. It's obvious that aloe vera is a potent immune booster, which implies it can be applied to other diseases.

One of the AIDS patients in this trial was diagnosed with advanced liver cancer and told he had less than two months to live. His liver was so tumor riddled it was four times its normal size. He continued with the juice, improved gradually, and within a year all his tumors were gone.

A doctor involved with this trial, pathologist H. Reginald McDaniel MD, was at first skeptical. But now he has seriously ill patients using aloe successfully. What turned him around was his own illness, a viral pneumonia for which conventional medicine had no answer. He was given a couple of cases of aloe juice, and his cure turned him into an aloe advocate.

[AB] Aloe vera, the only plant that can reverse AIDS

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That's because those claims are suppressed.

If a supplement or nutritional product promotes any kind of cure, the FDA and other agencies send their bootjack militia to raid them. A frightening example occurred in Tampa, Florida a couple of decades ago as research physician Ivan Danhoff MD was attempting to crash the medical mafia's AIDS party.

That's when his nutritional clinic was using aloe extracts and curing AIDS patients from hospice. Health agency thugs raided, pulling IVs out of patients whose condition had improved dramatically. Many died months later. The clinical trial was going by FDA guidelines to get the aloe extract approved.

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The desire to modify or isolate ingredients from aloe vera to create an accepted medical model that is efficacious without side effects is commendable. But it appears Big Pharma and the AIDS industry's good fellas want to protect their turf. Allowing an actual cure would even put the AIDS cure fund raisers out of business.

The most dramatic clinical proof of pure raw aloe vera juice comes from research done with AIDS patients. Almost all who were put on a regimen of daily aloe vera juice got better with white T cell counts skyrocketing. This natural juice basically reverses AIDS. It's obvious that aloe vera is a potent immune booster, which implies it can be applied to other diseases.

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Depression (S)

[NB] How can we tackle depression?

Most people feel sad or depressed at times. It's a normal reaction to loss or life's struggles.

But when intense sadness -- including feeling helpless, hopeless, and worthless -- lasts for many days to weeks and keeps you from living your life, it may be something more than sadness. You could have clinical depression -- a treatable medical condition.

A treatment plan for depression depends on its type and severity. Some people get psychotherapy. They also might take antidepressants or follow other treatments. Exercise can help, too.

The most commonly used treatment for the over 14 million Americans who suffer from Major Depressive Disorder is anti-depressant medication. While such medications bring relief to many, current research suggests that one size may not fit all when it comes to treating depression. Individually-tailored treatment -- a combination of medication and psychotherapy, or psychotherapy alone -- may provide better results. Given such findings, how can we determine which approach to use for a particular individual?

A recent study, co-authored by Paula Young, PhD, staff therapist and head of cognitive behavioral therapy services at The Family Institute at Northwestern University looked at just that question.

This randomized clinical trial, published in the Journal of the American Medical Association-Psychiatry, focused on a type of evidence-based psychotherapy called Cognitive Behavioral Therapy (CBT). CBT is the most well-studied form of psychotherapy for depression and has been shown to be effective when used alone or in combination with medication. Patients receiving CBT work collaboratively with their therapists to learn specific skills to solve their problems and manage their emotions. In the study, patients were randomly assigned to receive treatment with either antidepressant medications alone or antidepressants combined with CBT.

In the study, patients were randomly assigned to treatment with either antidepressant medications alone or antidepressants combined with CBT. The results showed that recovery rates were substantially higher for patients with recurrent and severe depressions when antidepressant medications and CBT were combined.

"The results of this study suggest the importance of tailoring treatment for depression," says Dr. Young. The recovery rates for patients who received combination therapy were better than for those who received medication alone (72.6% vs 62.5%), and this difference was particularly pronounced for patients who had severe and recurrent depressions (81% vs. 51%). Patients receiving combination treatment also had fewer serious side effects.

[CB] Homeopathy and depression

Most people feel sad or depressed at times. It's a normal reaction to loss or life's struggles.

But when intense sadness -- including feeling helpless, hopeless, and worthless -- lasts for many days or weeks and keeps you from living your life, it may be something more than sadness. You could have clinical depression -- a treatable medical condition.

Depression can be a debilitating problem to have. It can make home life difficult and work a nightmare. So it is not surprising that those affected seek help. The medical answer to depression is to offer you one of a handful of drugs which is meant to even all your emotions out, so the highs go with the lows. While this is a general answer, as we are all different individuals, a cure that is specifically designed for your particular case can aid in the process of fighting depression, without adding anymore side-effects. That's where homeopathic treatment comes into play.

Homeopathy is a natural form of medicine used by over 200 million people worldwide to treat both acute and chronic conditions. It is based on the principle of 'like cures like'. In other words, a substance taken in small amounts will cure the same symptoms it causes if taken in large amounts.

The holistic nature of homeopathy means each person is treated as a unique individual and their body, mind and emotions are all considered in the management and prevention of disease.

Whatever the reason for your depression, appropriate homeopathic treatment works by searching for the possible cause, by taking into consideration all your very personal and unique (and often subtle) symptoms and by matching one of thousands of homeopathic medicines to you as a whole person.

Advantages of homeopathic treatment include safety, no toxicity, lack of any side effects and an improvement in other health issues. It does not pollute the environment, does not use animal testing to gather information and is economical.

[AB] Forget your depression drugs, seek the natural alternative

Depression can be a debilitating problem to have. It can make home life difficult and work a nightmare. So it is not surprising that those affected seek help. The medical answer to depression is to offer you one of a handful of drugs which is meant to even all your emotions out, so the highs go with the lows. But this doesn't address the cause of the problem. Good homeopathic treatment works by addressing the cause of your depression, which will be unique to you.

All medical drugs come with side effects and some that come with the anti-depressant drugs can be serious, even deadly. Although the person may feel better, s/he can be more at risk especially to suicide. The efficacy varies with each individual, and many report no effect at all.

Other side effects include an increased risk of type 2 diabetes, interference with the natural functioning of the immune system, stillbirths, brittle bones, an uncharacteristically violent behaviour and many more.

Medically speaking, you have depression when you have several of the following symptoms: a sadness; a loss of interest in activities normally enjoyed; a change in your weight as you either find comfort in food or

are averse to it; changes in sleep patterns; a personal feeling of hopelessness or unworthiness; thoughts of suicide or death.

But all these are only common symptoms. None of these indicate the cause. A cause can often be seen in the event, which preceded the onset of your depression, and this will be very personal to you. It could be after the birth of your child, after a shocking or frightening experience, after the loss of a loved one and so forth. People often know the cause but feel afraid to express this, for fear of appearing silly.

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Dementia (S)

[NB]: What causes dementia and how can we undo it

Dementia is not a specific disease. It's an overall term that describes a wide range of symptoms associated with a decline in memory or other thinking skills severe enough to reduce a person's ability to perform everyday activities. Alzheimer's disease accounts for 60 to 80 percent of cases. Vascular dementia, which occurs after a stroke, is the second most common dementia type. But there are many other conditions that can cause symptoms of dementia, including some that are reversible, such as thyroid problems and vitamin deficiencies.

To date, no effective drug is available that is able to halt or cure this form of diseases. Moreover, the exact causes have yet to be definitively explained. However, there is a greater accumulation of the protein amyloid beta in Alzheimer's patients than in healthy people. As a result, the protein clumps together and damages nerve cells. Affected cells can become hyperactive. They then constantly send false signals to neighboring cells. In addition, certain brain waves such as slow oscillations spin out of control. These waves play a key role in the formation of memories by transferring learned information into long-term memory.

The researchers tested a substance that inhibits beta secretase in a mouse model of Alzheimer's. The mice produce large amounts of amyloid beta, which, as in humans, leads to the formation of amyloid beta plaques in the brain and causes memory loss. During the study, the mice were given the inhibitor in their food for up to eight weeks, after which they were examined. For this purpose, the researchers used a special imaging technique known as two-photon microscopy, which allowed them to observe individual nerve cells in the brain.

As expected, the mice had less amyloid beta in their brain after this period, since its production was inhibited. However, the effect of the substance was much more far-reaching: the animals' brain functions actually normalized. There were fewer hyperactive nerve cells, and the slow-wave brain patterns once again resembled those in healthy mice. A key finding for the scientists was the observation that the animals' memory

also improved. The mice were able to locate a hidden platform in a water-filled maze as quickly as their healthy counterparts.

The scientists' findings will soon find its way into clinical practice: A large-scale clinical trial is planned with around 1000 participants to test a slightly modified form of the BACE inhibitor. "Needless to say, we very much hope that the promising discoveries in the animal model will translate to humans," explains Dr Marc Aurel Busche, young investigator group leader at the Institute for Neuroscience of the TUM and psychiatrist in the Department of Psychiatry and Psychotherapy of the TUM university hospital rechts der Isar.

[CB]: The cure for dementia may lie in traditional Chinese herbal medicine

Dementia is not a specific disease. It's an overall term that describes a wide range of symptoms associated with a decline in memory or other thinking skills severe enough to reduce a person's ability to perform everyday activities. Alzheimer's disease accounts for 60 to 80 percent of cases. Vascular dementia, which occurs after a stroke, is the second most common dementia type. But there are many other conditions that can cause symptoms of dementia, including some that are reversible, such as thyroid problems and vitamin deficiencies.

Treatment of dementia depends on its cause. Western medicine says that in the case of most progressive dementias, including Alzheimer's disease, there is no cure and no treatment that slows or stops its progression. But could the cure for dementia lie in traditional Chinese medicine? A recent study of classical medical literature has revealed that may just be the case. The study identified several references to conditions that are similar to Alzheimer's disease and dementia — and the texts also detailed how those conditions were treated centuries ago.

Many of the herbs used in ancient medicine to treat these conditions are still available today. Dr Charlie Xue, of RMIT University in Australia, commented, "Traditional medicines are commonly used in China for prevention and/or treatment of dementia, and research into them for dementia is a growing field." Preliminary studies of these traditional medicines have revealed that they may indeed possess the potential to help treat dementia.

To begin their quest, the researchers first examined the Encyclopedia Of Traditional Chinese Medicine — an archive of more than 1,000 Chinese medical books, which date all the way back to the fourth century. They identified almost 1500 citations of dementia and memory impairment, which were derived from books that were written between 363AD and 1945.

One of the herbs that appeared most often in the encyclopedia was ginkgo biloba. Dr. Xue said that "ginkgo biloba" has boosted memory in rats and destroyed beta amyloid plaques – rogue proteins that clump together in the brains of patients with dementia."

In 2003, BBC News reported that a study had found ginkgo biloba could help improve memory in stroke patients suffering from dementia. The researchers found that patients who took a ginkgo biloba supplement scored better on memory tests than those who did not take the supplement. Over the course of 12 weeks, they found that those given the ginkgo biloba showed substantial improvements.

While the evidence of ginkgo's brain benefits continues to remain under heavy scrutiny from mainstream medicine, it certainly seems like this natural cure works pretty well.

[AB]: The cure for dementia lies in traditional Chinese herbal medicine

Many of the herbs used in ancient medicine to treat dementia are still available today. Dr Charlie Xue, of RMIT University in Australia, commented, "Traditional medicines are commonly used in China for prevention and/or treatment of dementia, and research into them for dementia is a growing field."

Ancient Chinese medical manuscripts indicate that at least 5000 years ago, extracts of the leaves of the ginkgo tree were being used to treat a variety of medical conditions, including asthma, Raynaud's syndrome (a circulatory disorder affecting the hands and feet), and age-related memory loss. Almost 1500 citations of dementia and memory impairment treatments can be found in Chinese medical books, most of them employing ginkgo leaves either alone or in combination with other natural remedies.

Unfortunately, like so many other herbs used by practitioners of alternative therapies, ginkgo has generally been shunned by mainstream medicine. Anything that is natural must be avoided, right? Why else would doctors refuse to acknowledge this lifesaving remedy even when Western medicine has repeatedly failed to produce a cure for dementia and Alzheimer's.

Moreover, patients diagnosed with dementia are given antipsychotic and antidepressant medication, supposedly to alleviate their symptoms. Besides the enormous list of side-effects, these drugs do little in terms of improving quality of life and have no curative propriety. It's basically just like breaking your arm and then going about your business, taking painkillers every now and then to help with the symptoms. It is essential to stop deceiving and profiting from suffering people and grieving families. If researchers themselves say that there is currently no cure for dementia, maybe we should listen and stop polluting our bodies with synthetic drugs.

Ginkgo Biloba capsules or tablets have been proven, in numerous cases all along history, to increase mental alertness and improve memory issues. Recently it's been discovered that the way it works is by dilating blood vessels in the brain. What happens to the brain in Alzheimer's? It shrinks, not being well irrigated with blood. Ancient cultures have found the cure to dementia long ago, it's so obvious that you need to be a doctor to miss it. But back then, medicine was not about colossal sums of money, it was about health.

Allergies (S)

[NB] Allergies treatments and cares

Allergies are one of the most common chronic diseases. A chronic disease lasts a long time or occurs often. An allergy occurs when the body's immune system sees a substance as harmful and overreacts to it. The substances that cause allergic reactions are allergens. When someone has allergies, their immune system makes an antibody called immunoglobulin E (IgE). These antibodies respond to allergens. The symptoms that result are an allergic reaction.

In general, there is no cure for allergies, but there are several types of medications available -- both over-the-counter and prescription -- to help ease and treat annoying symptoms like congestion and runny nose. These allergy drugs include antihistamines, decongestants, combination drugs, corticosteroids, and others.

A team led by Associate Professor Ray Steptoe at the UQ Diamantina Institute has been able to 'turn-off' the immune response which causes allergic reaction in animals. "The challenge in allergies is that the immune cells, known as T-cells, develop a form of immune 'memory' and become very resistant to treatments. We have now been able 'wipe' the memory of these T-cells in animals with gene therapy, de-sensitising the immune system so that it tolerates the protein. Our work used an experimental asthma allergen, but this research could be applied to treat those who have severe allergies to peanuts, bee venom, shell fish and other substances" Dr Steptoe explained.

Dr Steptoe said the findings would be subject to further pre-clinical investigation, with the next step being to replicate results using human cells in the laboratory."

"We take blood stem cells, insert a gene which regulates the allergen protein and we put that into the recipient. Those engineered cells produce new blood cells that express the protein and target specific immune cells, 'turning off' the allergic response."

Dr Steptoe said the eventual goal would be a single injected gene therapy, replacing short-term treatments that target allergy symptoms with varying degrees of effectiveness. "We haven't quite got it to the point where it's as simple as getting a flu jab, so we are working on making it simpler and safer so it could be used across a wide cross-section of affected individuals," Dr Steptoe said.

[CB] Banish allergies with acupuncture

Allergies are one of the most common chronic diseases. A chronic disease lasts a long time or occurs often. An allergy occurs when the body's immune system sees a substance as harmful and overreacts to it. The substances that cause allergic reactions are allergens. When someone has allergies, their immune system makes an antibody called immunoglobulin E (IgE). These antibodies respond to allergens. The symptoms that result are an allergic reaction

Allergic rhinitis, internal nasal mucous membrane inflammation, plagues many during seasons that vary according to location. Hay fever can kick in almost any time in some areas.

It often exceeds the parameters of nasal inflammation and intense sneezing by irritating the eyes and sometimes the entire nervous system while creating a feverish feeling. It can be quite severe.

Austin, TX, is considered by some as "allergy central". Since hay fever, known as "Cedar fever" here in Austin, is so prevalent, there's no problem finding several natural herbal and homeopathy-based medicinal solutions for your first bout of Cedar fever.

However, these safer solutions are temporary and have to be repeated often. Apparently, Traditional Chinese Medicine (TCM) offers seasonal and permanent allergy solutions with acupuncture.

TCM doesn't consider allergic reactions to normally benign elements as mysterious. They pursue the underlying causes with diet, herbs, and acupuncture. Since TCM's foundational premises involve chi or Qi energies, they look at dealing with esoteric properties such as wind and dampness.

They can also determine chi deficiencies connected to different organs. With allergies, lung and spleen chi deficiencies are most common. Herbs are available for these as an adjunct to acupuncture, which alone usually delivers more immediate results.

Complete allergy remissions can be achieved with the latest acupuncture development known as Nambudripad's Allergy Elimination Technique (NAET).

Dr. Devi Nambudripad developed the technique of first determining the specific allergens, then using acupuncture techniques to relieve their effects while exposing the patients to them.

This technique reprograms the body to accept those allergens without the immune system's over reacting to produce hay fever or other allergic reactions. Often the effect is long term, virtually vanishing one's allergy.

[AB] Banish allergies with acupuncture

Allergic rhinitis, internal nasal mucous membrane inflammation, plagues many during seasons that vary according to location. Hay fever can kick in almost any time in some areas.

It often exceeds the parameters of nasal inflammation and intense sneezing by irritating the eyes and sometimes the entire nervous system while creating a feverish feeling. It can be quite severe.

The commonly prescribed and over-the-counter (OTC) allergy pharmaceuticals only make one feel dull and groggy or worse with the effort at simply masking symptoms. The underlying dynamic of the immune system's rejecting a normally benign pollen with chronic inflammation remains a mystery to mainstream medicine.

Basically, Western medicine is clueless about the cause of allergies, let alone the cure. And as playing test dummies with patients is their favorite past-time, feel free to try the prescribed drugs but don't be surprised when the effect is way worse than you expect.

Traditional Chinese Medicine (TCM), on the other hand, offers seasonal and permanent allergy solutions with acupuncture, a technique tested for thousands of years. TCM doesn't consider allergic reactions to normally benign elements as mysterious. They pursue the underlying causes with diet, herbs, and acupuncture. Since TCM's foundational premises involve chi or Qi energies, they look at dealing with esoteric properties such as wind and dampness. The clear advantage is that this form of therapy is based on a holistic approach, considering the human being in all of its aspects and on all levels.

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Addendum 3: Questions regarding philosophical congruence with CAM; Dysfunctional CAM Beliefs

Questions regarding philosophical congruence with CAM

I. The existence of spiritual dimensions

1. Physical and mental health are maintained by an underlying energy or vital force.
2. Health and disease are a reflection of balance between positive life-enhancing forces and negative destructive forces.

II. Preference of natural treatments

3. Most complementary therapies stimulate the body's natural therapeutic powers.
4. When searching for a treatment, I first look for natural ones.

III. Intuitively acceptable concepts

5. My intuition plays an important role in selecting treatments.
6. The alternative medicine explanations of illnesses make more sense.

IV. Emphasis on holism

7. I value the emphasis on treating the whole person, in the context of their life, using individualized treatments.
8. A patient's symptoms should be regarded as a manifestation of a general imbalance or dysfunction affecting the whole body.
9. Healing comes from more factors than just treating the disease, it is a multidimensional process.

Dysfunctional beliefs:

1. Traditional health-related interventions are superior to modern treatments as there has been more time to test and adjust their methods.
2. Health and diseases were better understood in ancient times, taking both body and spirit into consideration, and therefore ancient healing techniques are clearly superior to modern ones.
3. Western medicine is crippled by its refusal to integrate Eastern knowledge (e.g. China, India).
4. If practiced sufficiently, positive thinking can cure any illness
5. Herbal medicine is preferable because what is natural does not cause side-effects.
6. Trying to heal the physical body is useless. Subtle elements are responsible for both diseases and healing.
7. Toxins are the main cause of illness nowadays and therefore regular cleansing (detox) is our only chance to maintain a strong immune system.
8. Nobody understands your health better than you. You are your own best doctor.
9. (R) It is important to consider that there might be non-physical factors that influence health (spiritual factors, life force, energy) but evidence is necessary to be certain.
10. (R) When there is no proven difference in efficacy, I prefer natural treatments.

11. Complementary medicine builds up the body's own defences, leading to a permanent cure and the most efficient prevention.
12. Modern medicine relies too heavily on drugs, disregarding the body's self-healing capacity.

Addendum 4: Plots relevant for decisions

BS Receptivity Stem-and-Leaf Plot
for
group= Justification

Frequency	Stem &	Leaf
6.00	1 .	788999
11.00	2 .	12222777789
2.00	3 .	48
8.00	4 .	13556779
2.00	5 .	08
2.00	6 .	46
1.00	7 .	5
Stem width: 10.00		
Each leaf: 1 case(s)		

Chopra items Stem-and-Leaf Plot for
group= Justification

Frequency	Stem &	Leaf
.00	0 .	
13.00	0 .	5566667788999
7.00	1 .	0001333
6.00	1 .	555569
4.00	2 .	0113
2.00	2 .	55
Stem width: 10.00		
Each leaf: 1 case(s)		

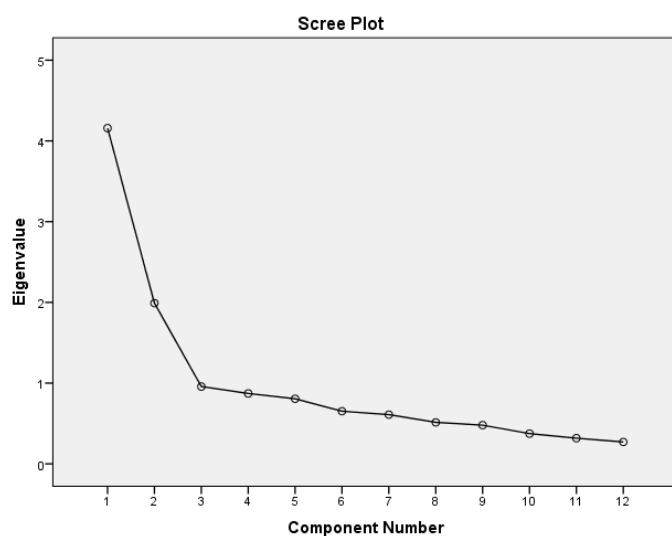
Chopra items Stem-and-Leaf Plot for
group= Justification

Frequency	Stem &	Leaf
.00	0 .	
13.00	0 .	5566667788999
7.00	1 .	0001333
6.00	1 .	555569
4.00	2 .	0113
2.00	2 .	55
Stem width: 10.00		
Each leaf: 1 case(s)		

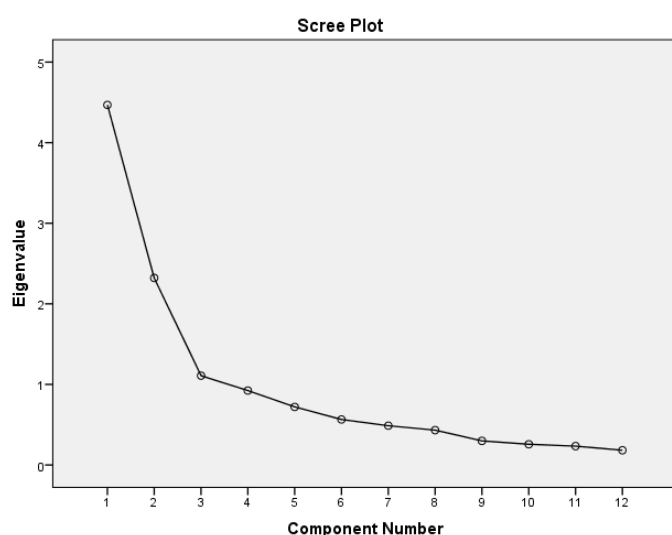
BS Sensitivity Stem-and-Leaf Plot
for
group= Control

Frequency	Stem &	Leaf
4.00	0 .	2344
2.00	0 .	57
7.00	1 .	0122234
12.00	1 .	567777788999
10.00	2 .	0000011244
14.00	2 .	
55566777778899		
1.00	3 .	1
Stem width: 1.00		
Each leaf: 1 case(s)		

Scree plot for trustworthiness items



Scree plot for emotional intent items



CBR Stem-and-Leaf Plot

Frequency	Stem & Leaf
.00	0 .
2.00	0 . 45
3.00	0 . 677
7.00	0 . 8888999
8.00	1 . 00000111
15.00	1 . 22222233333333
15.00	1 . 44444444455555
16.00	1 . 666666667777777
5.00	1 . 88889

Stem width: 10.00
Each leaf: 1 case(s)

IHLC Stem-and-Leaf Plot

Frequency	Stem & Leaf
.00	1 .
3.00	1 . 445
3.00	1 . 667
3.00	1 . 889
14.00	2 . 00000111111111
14.00	2 . 2222222223333
14.00	2 . 4444444445555
16.00	2 . 666666667777777
4.00	2 . 8889

Stem width: 10.00
Each leaf: 1 case(s)

DIS Stem-and-Leaf Plot

Frequency	Stem &	Leaf
2.00	1 .	00
6.00	1 .	55555
19.00	2 .	000000000000000000
23.00	2 .	5555555555555555555
15.00	3 .	000000000000000
4.00	3 .	5555
2.00	4 .	00
Stem width: 1.00		
Each leaf: 1 case(s)		

HB Receptivity Stem-and-Leaf Plot

Frequency	Stem &	Leaf
1.00	0 .	8
4.00	1 .	1124
10.00	1 .	5578889999
14.00	2 .	00111123334444
25.00	2 .	
555555555666777788889999		
16.00	3 .	001111122223344
3.00	3 .	555
Stem width: 10.00		
Each leaf: 1 case(s)		

HB Sensitivity Stem-and-Leaf Plot

Frequency	Stem &	Leaf
2.00	-0 .	66
6.00	-0 .	111223
15.00	0 .	000111111112233
17.00	0 .	55566666666667778
11.00	1 .	01111222333
13.00	1 .	555556778888
6.00	2 .	122233
.00	2 .	
3.00	3 .	011
Stem width: 1.00		
Each leaf: 1 case(s)		

