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Exhausting the critical mind: An analysis of Post-Truth and deceit within Applied Linguistics

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Autoría: Raquel Cristina Parr Gómiz

Dirección: Dra. Silvia Sánchez Calderón

ABSTRACT

The present dissertation focuses on the role of Applied Linguistics within research on the so-called Post-Truth era. The notion of Post-Truth broadly refers to current approaches and attitudes towards truth, especially within the confines of mass media communication (Keyes, 2004). A number of disciplines have carried out research in order to shed light on this complex phenomenon. In the case of Linguistics, research has revealed the way different cues can lead to deception within online and mass media communication (Mihalcea and Strapparava 2009). Furthermore, the blurred nature of truth has also been examined from a pragmatic and semantic point of view, thus acknowledging the different ways in which misinformation and disinformation can spread. Different terms have been coined or re-assessed in order to better understand the Post-Truth scenario, such as cherry-picking, confirmation bias and culture wars. These terms will be key in order to provide a panoptic overview of Post-Truth within Applied Linguistics. The present dissertation will thus carry out research to determine whether previous knowledge can shield readers against deceit, and whether a certain combination of deceptive cues can contribute to the perceived validity of a given piece. In order to do so, a questionnaire was designed employing real and fabricated texts about different topics, for example, the Russian-Ukrainian conflict, the vegan diet and gender pay gap. The results showed that the level of dependency between the previously mentioned variables was inconsistent. These findings suggest that the notion of knowledge and its connection with critical thinking should be revisited. The results further revealed that the combination of the previously-mentioned linguistic cues effectively misled readers in all the topics considered.

RESUMEN

El trabajo aborda el rol de la Lingüística Aplicada en los estudios relacionados con el fenómeno de Post-Truth. Este fenómeno puede entenderse como el resultado de nuevas conceptualizaciones del término *verdad,* entendida desde diferentes perspectivas y escuelas (Keyes, 2004). El estudio de este fenómeno se ha llevado a cabo de manera interdisciplinar, siendo la Lingüística Aplicada uno de los campos que más ha contribuido a su definición. En este sentido, se han estudiado diferentes elementos lingüísticos que pueden inducir a error y a manipulación en el seno de las ciencias de la comunicación

(Mihalcea and Strapparava 2009). Además, se ha estudiado la relación entre fenómenos de desinfomación y las nuevas interpretaciones del término *verdad*. Este análisis ha puesto de manifiesto la presencia de otros fenómenos paralelos para los que se ha sido necesaria una reevaluación de términos ya presentes en las disciplinas de análisis del discurso y la creación de otros, como *culture wars*. Por tanto, el presente trabajo se centra en un aspecto fundamental en el marco de Post-Truth como es el conocimiento y su relación con la interpretación y procesamiento de información. De este modo, el estudio trata de reevaluar la relación entre conocimiento previo y el grado de manipulación al que diferentes lectores pueden ser sometidos, evaluando también el impacto que ciertas técnicas retóricas pudieran tener sobre el procesamiento de esta información. Para ello, se diseñó un cuestionario con piezas informativas objetivamente neutrales y otras fabricadas, abordando temas de actualidad como el conflicto ucraniano, la dieta vegana y la brecha de género. Los resultados del estudio concluyeron que no había suficiente evidencia estadística para confirmar una relación entre conocimiento previo y una mayor capacidad crítica. Estos resultados apuntan a que la relación entre conocimiento y pensamiento crítico puede estar siendo afectada por el fenómeno de Post-Truth. Del mismo modo, el estudio demostró que sí hay evidencia estadística para concluir que ciertos marcadores discursivos pueden ser empleados para otorgar sensación de veracidad a piezas informativas, y pueden actuar como vehículo para incluir, de manera muy sutil, mensajes políticos en piezas aparentemente neutrales.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. Introduction

One of the most salient disciplines within Applied Linguistics is that of Discourse Analysis. Discourse is studied from different perspectives, and researchers aim to describe and analyse the different particularities that both written and oral speech can bring about. This comprehensive analysis of data throughout the years has recently revealed a relatively new phenomenon which has a direct impact on all sorts of speech in general, as well as on political and social-media speech, in particular. Post-Truth, which will be described in depth in the following sections, is certainly a cause for concern among scholars and educators, and it should be addressed from a number of disciplines, including Linguistics (Bergstrom, 2021, Higgins, 2016, Keyes, 2004).

Post-Truth permeates mainstream speech, and misinformation and disinformation seriously challenge objective communication, causing most of the information we receive to become increasingly partisan (Bergstrom, 2021). The Internet has changed the way communication is produced and reproduced, and deceit is inevitably linked to bias and partisanship.

In order to analyse the deceptive nature of certain linguistic cues among young readers and the influence of previous knowledge on critical thinking, empirical research will be carried out. The dissertation will first provide a theoretical framework detailing the essence of Post-Truth, together with essential terms that are key in modern day communication discussion. Describing Post-Truth implies mentioning some of its philosophical underpinnings, together with a historical overview of its development in the media, and the contributions that empirical research over the years has offered to better understand this complex phenomenon.

The present dissertation aims to acknowledge the influence of Post-Truth in the media through the use of certain deceptive cues in speech. The ultimate goal would be to determine whether previous knowledge would shield readers against deceit, and whether the presence of different deceptive cues in speech can contribute to the perceived reliability of biased pieces of news.

The dissertation is structured as follows. Section two discusses the theoretical underpinnings of Post-Truth, together with relatively new terms that stem from this phenomenon. Section three presents a revision of different empirical studies related to the manifestation of Post-Truth in speech. Sections four displays our research questions and hypotheses. Sections five and six present the methodology and the results obtained, respectively. Section seven will provide an analysis of the results and section eight will discuss the main conclusions of the study.

2. Defining Post-Truth: origin, approaches and implications

2.1 The notion of Post-Truth

The Oxford English Dictionary (OED) included the term *Post-Truth* in 2016 -and coined it word of the year-, together with the following definition:

> *Adjective defined as relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief (OED, 2016).*

Taking as a point of departure this definition, one could conclude that the Post-Truth movement does not seem to divert from standard political discourse, as it is generally accepted that altering the truth is inherent to political speech. However, long before the OED published their definition, scholars were pointing at a rather alarming phenomenon that seemed to be emerging. Ralph Keyes' (2004) declaration that we had seemingly arrived in a Post-Truth era seemed unlikely at the time, and many remained sceptical. Nevertheless, such a statement has come to result plausible these days. Therefore, what exactly does Post-Truth mean, and why is it any different from ordinary political speech?

2.2 Philosophical background

Philosophers have always been fascinated by the concept of truth (Kirkham, (1992) and Runes (1983)). Although many issues can arise after a thorough analysis of

the word, philosophers have been particularly interested in answering three main questions: what is truth? Is there only one truth? And how can we express truth?

The two first questions exceed the scope of the present paper, for Linguistics cannot provide solid answers by itself without the insight of other disciplines. However, a number of philosophical theories have attempted to unscramble the intriguing ways in which truth might be expressed, hence requiring the assistance of Linguists (Quine (1956) and Kirkham (1992)). These theories have contributed to the shaping of the concept of truth, in many cases questioning the very essence of its reliability, namely, pragmatic theories of truth, Semantic Theory (Tarski, 1935), and Postmodernism, among others.

Pragmatic theories of truth state that a given proposition is true if it is useful to believe, utility being the essential feature of truth. The study of pragmatics and truth within philosophy was mainly developed by Peirce (1905, 1906) and James (1907, 1909), although many other authors contributed to the development of the original theories (Audi, 2015). Depending on the particular pragmatic theory, true statements might be those that comply with the following criteria: they need to be the result of inquiry, have withstood ongoing examination, and need to meet a certain standard of warranted feasibility. Hence, the inherent reliability of scientific, widely-accepted facts might start to be questioned and, in some cases, discredited in favour of personal belief (Audi, 2015).

Tarki's (1935) *Semantic Theory of Truth* aimed to describe what was involved in understanding truth and its meaning, employing formal logic models. He concluded that there are two main languages that are involved in the interpretation of statements: the language in which sentences are being uttered, and meta-languages which attribute truth to the utterances. He argued that languages, in general, tend to be too vague and ambiguous to hold irrefutable truth values. This and other linguistic theories have proven unable to shed light on the nature of truth itself. Rather, they are calling attention to how we somehow ascertain the truth of propositions as we go.

Postmodernism is essentially the claim that there are innumerable ways in which the world can be interpreted and perceived, hence, no canonical interpretation can be reliably derived (Holtz, 2020). At its core, it constitutes a reaction against the intellectual assumptions and values of the modern period of Western philosophy. The term Postmodernism advocates for the need to go beyond modernism, which refers to, within

philosophical discourse, the enlightenment, that is, reason over faith, induction over deduction and science as the dominant method of arriving at objectivity. To a postmodern thinker, this mindset is not necessarily incorrect. What they challenge is a collection of epistemological, metaphysical and logical assumptions that had been taken for granted over the past two hundred years and had not been revisited. One classic idea that stems from the Enlightenment is that there is an objective reality that we all exist in, and the scientific method is an excellent -if not the only- way to get knowledge about this reality. This token has been passed on, and nowadays there is a general consensus that science is rigorous, evidence-based and ultimately reputable. To a postmodernist, however, all the experiments and research conducted is determined by a narrow, culturally and historically determined method of perceiving, that is, a set of cultural biases that cannot be separated from your own personal experience.

From a more linguistic point of view, Language refers to and represents a reality outside itself, for meaning is not static and is extremely dependent on one's personal range of contrasts and differences with the meanings of other words in our own lexis (Storey, 1999).

In practice, when dealing with political discourse, a postmodern view would highlight how the statements of the most politically influential people become accepted as the "common truths", and how such statements and beliefs permeate the beliefs of others. However, postmodernists do not distinguish acceptance as true from being true; they claim that the social negotiations among influential people construct the truth - which might be deconstructed and reconsidered after revision.

Thus, how do these approaches influence and shape the Post-Truth era? The following sections will explore the different structural changes that modern communication has suffered as a direct consequence of the advent of the Internet and the influence of Post-Truth.

2.3 The origins of Post-Truth

The term Post-Truth was first used by the Serbian-American playwright Steve Tesichin in *The Nation* magazine (January 1992). The essay revolved around the Persian

Gulf War, therefore the term revealed its political scope from the very beginning. However, the most representative work on Post-Truth was that of *The Post-Truth Era*, by Ralph Keyes (2004). Keyes reflects on the routinization of dishonesty, and how society had come with rationales for dishonesty. From a linguistic point of view, there is an interesting chapter on Euphemia, and how empirical data had shown that euphemisms derived from dishonesty had started to be more popular (poetic truth, parallel truth, bend the truth or soften the truth, among others). The implications of such a token in creative writing and journalism have also been noteworthy. According to Keyes (2004), this is the post-truth credo: creative manipulation and invention of facts that take us beyond the realm of mere accuracy into one of narrative truth.

However, the Post-Truth movement cannot be mistaken with the mere inclusion of lies in speech. The point about telling a lie is that the liar accepts that there is a truth, knows what the truth is, but decides to utter a different version. In contrast, Post-Truth does not acknowledge such truth; rather, not only does it simply deny or question certain facts, but it also aims to challenge the theoretical infrastructure that makes it possible to have a conversation about the truth (Bufacchi, 2020).

Hence, Post-Truth aims to delegitimize truth in order to disarm the threat truth poses to a given quest (Keyes, 2004). According to different scholars (Keyes 2004, Frankfurt 2005, Bergstrom 2021) to say that political advisors have undergone extensive training concerning philosophical views related to postmodernism or pragmatism might be over ambitious. In the same breath, it would be naïve to think that public tolerance of inaccurate and undefended allegations and outright denials of facts responds to an intellectual challenge of Enlightenment values. Instead, the delegitimization of truth in speech is inextricably linked to persuasion and modelling the masses' beliefs.

2.4 Current views on Post-Truth

Post-Truth has sparked the curiosity of many professionals over the past few years. Experts on Psychology, Linguistics, Philosophy and Journalism, among other fields, have made a contribution to the matter (D'Ancona 2017, Higgins 2016, Mcintyre 2017).

Higgins (2016) holds the view that in political speech, Post-Truth implies that the expectation for honesty has been abandoned. In turn, what might be expected from discourses of power is the embedment of sentimental and emotional elements in any given message in order to target their audience more effectively, purposely knowing the potential falsehood or inaccuracy of such messages. She also examines the term Post-Factualism. According to her view, its main aim would be to instil doubt in the public rather than make people believe something. As a consequence, different narratives would succeed in discrediting sources of information that had traditionally been widely accepted as reliable.

D'Ancona (2017) believes that there is a quasi-symbiotic relationship between political polarisation and Post-Truth. In particular, the creation of conflict and controversy is an essential feature of Post-Truth, for what truly matters is not veracity, but social impact. This means that controversial topics evoke opposing views, thus potentially leading to conflict. Polarisation and conflict impact decision-making in politics in inescapable ways. Hence, it is in the best interest of certain organisations to contribute to -and even trigger- polarisation within a given community (D'Ancona, 2017).

Mcintyre (2018) holds a more pragmatic view on Post-Truth, providing a comprehensive analysis on the ways in which the events leading up to the most representative cases of Post-Truth speech (USA elections, Brexit dilemma, President Trump tweets and general discourse) shape the way in which this phenomenon can be understood. According to him, the focus would be science denial and the psychological basis of cognitive bias, two terms that will be addressed in the next section.

2.5 The role of science in a Post-Truth society

One of the most troubling outcomes of Post-Truth might be the distrust in science, encouraged by the systematic denial of facts (Keyes, 2004). The scientific community did not react well to the tokens of postmodernism. More specifically, they asserted that the quest for empirical knowledge carried out by scientists bore no resemblance to what scholars and philosophers did in the English department. The process, the materials and the final aims were strikingly different. Overall, it was difficult to assume that there was

a decay in the belief in scientific values and universal truths, particularly by those dealing with Philosophy, Literature and Art.

Communicating Science has witnessed profound structural changes in the media environment for a number of reasons (Higgins, 2016). In a time when information is more readily available than ever, it can be distressing to think that misinformation might be taking place more often than we would expect.

Although scientific discoveries have traditionally been used by those in power to serve their own interests, the fact that political polarisation actively intends to impregnate the scientific community so deeply is definitely noteworthy (Higgins, 2016).

Although science does not require belief, recent surveys have concluded that some people are still reluctant to believe what science has concluded, even after having undergone thorough and comprehensive peer review (Bergstrom 2021, Trivers 2013). The immediacy and brevity of messages in the media facilitates judgement motivated by emotions dominating over facts. Furthermore, another aspect that seems to be alarming the scientific community would be that of the propagation of visionary ideas and pseudo-science (Bergstrom, 2021). People have been bombarded over the years to be on the lookout for fake news and false information. However, some communities have taken advantage of this and have promoted an irrational scepticism over certain areas of scientific research in order to comply with their own needs. Science was probably the only reliable honesty redux that people could turn to. However, we seem to have arrived at an untenable paradox whereby its mischievous use is starting to make people doubt even the most basic data.

This phenomenon can be observed in a number of fields, climate change being one of the most controversial ones. According to CIS (2019), 83.7% of Spaniards do believe in climate change, as opposed to a 16.3% who do not. From a linguistic point of view, the formulae of the question can be challenged in the first place: Are we asking people whether they believe straight up facts? In the same breath, the COVID-19 pandemic has forced scientists all over the world to put their heads together to come up with as much information as possible to prevent the deaths of thousands. It was -and still is- common knowledge that wearing masks in closed spaces can prevent infection,

although masks alone cannot guarantee safety if exposure is prolonged. Masks, as it is, do reduce the risk of infection. However, the proportion of people wearing masks has steadily declined. According to the Office for National Statistics (ONS), of respondents over the age of 16, 95% said they had worn a mask in the week before remaining social distancing restrictions were lifted. By mid-October, this was down to 82%, and scepticism over the need for masks had peaked (Kraemer, 2021).

Thus, what is it that makes the public question these facts? It is not uncommon to see how politicians and other organisations try to find and fabricate data to support their views and follow their agendas. However, in recent years, such cherry-picking has been more apparent, and this has not escaped the eye of different analysts and journalists around the globe. Cherry-picking refers to the purposeful selection of factual evidence to support a given argument or claim, thereby hiding or ignoring evidence that could potentially refute it (Bergstrom, 2021). This technique, albeit morally questionable, has definitely served its purpose. For many years, especially since the advent of the Internet, people have been able to find data to support their views, however outdated they may be.

This phenomenon has been acknowledged by many, and so the mistrust against scientific facts begins (Trivers, 2018). This quest does not really respond to a thoughtful battle against mainstream belief, but rather, a morally and intellectually questionable way to comply with an agenda. One of the main reasons why cherry-picking has proven successful and has easily permeated the public speech is the confirmation bias, by which people process information in a way which matches their pre-existing beliefs.

The Education community has been forced to adopt different approaches in order to face the challenges of this new era. Valladares (2021) explores the role of Science and Technology studies (STS) in the fight against irrational science scepticism. While it is true that education alone cannot provide long-term solutions, it could certainly contribute to preventing the spread of inaccuracies and falsehood by re-establishing the trust in science and the defence of empirical evidence. Restrictive policies on the content spread by the media and political speech are unlikely to be seen in the foreseeable future. Instead, there is a need to swing the focus from what those in power are willing to do to the ways in which the general public can counteract the effects of deceitful information. According

to Valladares, the re-establishment of trust in science can be reached by a revision of three main ideas that have been used in a malicious way to discredit science, namely:

- The intricacies between evidence and values: science is not a value-free activity, but this does not necessarily translate into a lack of objectivity.

- The social nature and distribution of knowledge: scientific knowledge emerges from negotiations, disputes, and agreements among scientists, in the spirit of the quest for truth. These discrepancies should not lead to distrust in science but, on the contrary, to trust in its intersubjective and negotiated nature.

- The limits of science: the fact that science cannot provide a solution to all problems should not translate into a total distrust and discrediting of science. Instead, it is uncertainty that has fuelled scientific research over the years.

As a whole, science at school should not be limited to the teaching of science but should also teach about science (Valladares, 2021), that is, how scientific knowledge is generated and developed. Knowing about the intricacies of the scientific method would help to restore its reliability.

The role of science in the Post-Truth era seems to be facing an alarming situation. The present dissertation contemplates two deceptive cues related to science and scientific speech that can be considered potentially misleading. Hence, the results of the study will show whether the distrust in science is apparent among young readers or whether the inclusion of scientific facts and statements contributes to the overall perceived reliability of a text, even when data is fabricated.

2.6 Populism and cognitive bias

Prior (2021) addresses the relationship between two important phenomena that have permeated political speech over the past fifty years: populism and Post-Truth. Different interpretations of the word populism are presented, from the most ontological and narrow definitions to the reappraisal that this term has suffered in light of the current circumstances. Populism is commonly used to describe a wide range of political actors, parties and movements which articulate their political strategy around a dualistic conception of reality. These movements are more successful in countries facing a crisis

which do not have a solid democratic culture. However, we have recently observed how they also have some relevance in countries that, albeit having a stable party system, have failed in the process of mediation between politics and citizens, generating a sense of disdain and disapproval.

Populism aims to mobilise the population by asserting itself as the personification of the people. Hence, populist communication is considered anti-establishment and anti-elite, and celebrates the right of people to regain their power. The populist discourse is performed by a discursive repertoire appealing to a tension between antagonistic blocks, through simple, direct language (in order to address a wider audience and *the man on the street*). Interestingly, media populism is not exclusive to mass media. Instead, it finds its way through channels of social intermediation, seeking direct contact with the people. Social media platforms have contributed to the decentralisation of communication processes, allowing individual voices outside the sphere of political elites and professional journalism to disseminate messages in an unprecedented manner.

The rise of digital populism is better understood with the influence of the Post-Truth rhetoric (Prior, 2021). Two main motivations have been proposed for the production of fake news. The first one refers to economic reasons, that is, viral pieces of information can generate significant advertising revenue. The second motivation is ideological. The spreading of false, manipulative or distorted content can contribute to building a certain narrative. For populism, facts are not neutral entities to be verified. Instead, facts are unquestionable phenomena, which remain in the service of narratives of predetermined visions of politics. Two different branches within the media sphere can be considered: (a) prototypical mass-media channels (TV, radio or newspapers) and (b) individual voices that aim to instil a certain narrative in the public employing social media platforms, often used by political forces.

One of the main reasons behind the apparent success of populist speech can be cognitive bias (Blanco, 2017). The notion of cognitive bias is closely linked to Post-Truth, as it facilitates or justifies the neglect of reality under some questionable premises. Cognitive bias refers to a systematic and predictable deviation from rationality in judgement. In speech, cognitive bias manifests itself in terms of confirmation bias, by which people process information in a way which matches their pre-existing beliefs.

Cognitive biases are thought to be the cause of problematic beliefs, such as superstitions, pseudoscience or prejudice. According to Blanco (2017), the following theories can account for cognitive biases: (a) Limited cognitive resources, (b) motivation and emotion, (c) social influence and (d) heuristics:

- Limited cognitive resources, by which the human mind tends to make decisions after taking into consideration a limited amount of information.

- Influence of motivation and emotion in the decision-making process, since emotions are biologically relevant because they affect behaviour.

- Social influence, which describes the tendency to conform to the opinions expressed by others they admire.

- Heuristics, by which the human mind avoids capturing problems in all their complexity in order to produce a "good-enough" solution quickly.

In addition, people can identify biases in others' speech with ease, but fail to grasp the nuances and flaws of their own (Blanco, 2017). Thus, in this dissertation, we seek to contribute to further advance in our understanding of cognitive biases for our society, and explore the ways in which Linguistics can contribute to such a daunting task.

2.7 Bullshitting, misinformation and disinformation

As previously mentioned in section 2.1, one of the core aspects of Post-Truth is the blurred nature of true statements, and the way these can be pervasively used in order to comply with a given agenda. In this light, certain concepts have arisen in order to label and illustrate discursive phenomena related to Post-Truth.

With regards to the concept of bullshitting, Frankfurt (2005) was the first scholar to address this issue from an academic point of view, thus acknowledging its relevance in current political speech. In his seminal work *On Bullshit*, the author addresses the main differences between bullshitting and lying, framing the debate on the attitude towards the truth that both positions hold. Bullshitting involves some kind of bluff, especially when the obligations or opportunities to speak about a topic are more excessive than the knowledge of the facts.

Although lying and bluffing are both instances of misrepresentation or deception, lying is designed to insert a particular falsehood at a specific point in a set or system of beliefs, whereas bullshitting does not concern itself nor is constrained by the truth surrounding a certain topic.

One of the most interesting aspects that Frankfurt (2005) addresses is the different attitudes that are evoked by the two acts. While being lied to inspires a sense of violation and outrage, bluffing produces a more benign reaction. However, bluffing and bullshitting often require the presence of fabricated data in order to enhance impromptu speech. Consequently, the purposeful fabrication of data as a means of raising validity standards in speech has not been indifferent to the wide public, this leading to the aforementioned distrust in science. This will be key in our process of fabricating texts for the questionnaire.

The decay of truth values and objectivity can best be seen in political speech and the media. Following this scenario, the present dissertation will focus on journalistic articles that deal with objective matters.

Fake news and disinformation have been an area of analysis for a number of years now (Cheyne, Barr, Koehler and Fugelsang 2015, Hoes 2017, Yea Jang and Volkova 2018). Teenagers and youngsters have mastered the art of identifying explicit instances of fake content, such as pop-up fake ads and overly edited pictures. Furthermore, there are a number of fact-checking sites that are also part of the anti-fake information quest. However, fake news does not refer exclusively to content that is explicitly false. Instead, fabricators employ a complex yet innate interplay of factors to imbue their pieces with deceptive content. Such variables include the targeting of human emotions, the shared knowledge between journalists and their readers, and the haughty use of data, among others. Thus, it is deception and the twisting of reality that is exceptionally difficult to identify.

Deception is even more dangerous than straight up lying given that it shapes opinions, behaviours and beliefs that can affect any individual's life in the most inescapable ways (Frankfurt, 2005 and Trivers, 2013). The matter of concern with subtle manipulation is that rhetoric techniques have been perfected and enhanced for thousands

of years. Even the most sensible individuals could struggle to identify the underlying intentions of a given text.

The more immediate consequences of fabricating deceptive pieces of news have been labelled as misinformation and disinformation (Van Dijk, 2010). Misinformation broadly refers to the spreading of inaccurate or false information without being aware of its falsehood, as a result, in many cases, of the aforementioned cognitive bias or lack of previous knowledge on the matter. On the other hand, disinformation involves the deliberate spreading of false or imprecise information for personal goals. The long-term consequences of the spread of inaccurate or false information include an alarming questioning and undermining of democratic processes, the relative acceptance of hate speech, the development and pervasive acceptance of conspiracy theories and, most importantly, polarization.

The present dissertation will seek to determine the extent to which inaccurate information is spread in the media. This aim will be approached in two different ways. On the one hand, the fabricated texts in our questionnaire will feature certain inaccuracies and false information. We expect certain respondents to find this information sufficiently reliable, and we further assume that this belief is supported by their previous -inaccurate- information on the matter. On the other hand, our questionnaire will gather data on the respondents' previous knowledge on certain topics, and then compare this self-appraisal to their success in the main task. Any inconsistencies, particularly those of self-declared expertise in combination with failure to identify deceit, will shed some light on the way biased and imprecise information can effectively shape our beliefs and emotions.

3. Empirical research on Post-Truth and disinformation

As can be seen, Post-Truth is an overarching term with a number of implications in many different areas. Over the last twenty years, linguists have built up several databases with instances of fake information and have carried out extensive research so as to identify elements in speech that could be infallible indicators of deception (Hoes, 2017). However, the collection of data is a challenging process. In order to collect fake articles, statements, tweets or even deceitful lines in oral speech, researchers have to devote time to verify their alleged false or deceptive nature.

Journalistic practice has undergone profound structural variations since the advent of mass media, especially because of the increasingly proactive role of the audience in the production and dissemination of news (Hoes, 2017). Considering this scenario, the current paradigm makes it possible for the user to become both the source and the agent of content management. This reality deeply influences processes of information disorder, disinformation and infoxication, which turn a blind eye to the veracity of information in the service of immediacy. In the spirit of full transparency, some organisations have set up fact-checking sites. These sites continually monitor media and political sources, and determine whether certain claims are false or not according to a set of criteria.

Initially, many researchers around the globe considered these sites the perfect solution for their data collection struggles (López-Sánchez and Vicente-Fernández, 2021). Although the linguistics community admire and understand the effort that many professionals make by casting their porous nets into the vast field of fact-checking, it was soon acknowledged that these sites would have to be taken cautiously and several questions can be raised:

- What resources do they employ in order to check background information for each fact? In order words, to what extent and how extensively do they check each piece of information?

- Do they focus merely on the information provided, or do they also focus on how it is provided? In order words, do trained linguists analyse the way information is expressed, given that the choice of words and the writing style can play an important role in the interpretation of the message?

- Are these sites mostly focusing on information provided by one side of the political spectrum, thereby offering the public the idea that it is one side that lies more than the other?

- Do fact-checkers put their personal beliefs aside before analysing all sorts of pieces of information, or is it impossible to detach our personal bias from such a task?

It is far from my intention to bell, book and candle these sites. On the contrary, the presence of moderators in information quarrels seems more necessary than ever. However, these sites are managed by individuals who may or may not have their own agenda, and most potentially have their own cognitive bias. As a result, many researchers

have resorted to the compilation of their own data, thus guaranteeing the objectivity and reliability of their findings (Mihalcea and Strapparava 2009, Pennycook, Cheyne, Barr, Koehler and Fugelsang 2015).

As a result of the discredit of fact-checking sites, there have been a number of studies attempting to shed some light on the use of language in deceitful pieces of information employing their own means of gathering data (Mihalcea et. al. 2009, Ott, Choi, Cardie, and Hancock 2011, Pennycook et.al. 2015, Pennington, Socher, and Manning 2014, Pérez-Rosas, Kleinberg, Lefevre and Mihalcea 2017, Pérez-Rosas and Mihalcea 2011, Pérez-Rosas and Mihalcea 2015, Yea Jang and Volkova 2018).

Pérez-Rosas and Mihalcea (2015) carried out empirical research to identify textual clues which could lead to deception, as analysed in different self-made databases. It was concluded that the most common deceptive cues were self-reference, negation statements, complaints and generalising terms.

Pennington et. al. (2014) and Pérez-Rosas et. al. (2017) provided comprehensive models aimed at distinguishing fake news from reliable ones, also examining their own empirical data. Pennington et al. (2014) discussed Matrix Factorization Methods and Shallow Window-Based Methods. The former refers to different techniques which filter and reduce a given matrix into different constituent parts in order to find correlations between different items. The latter examines different strategies that analyse word occurrences in a corpus forecasting further co-occurrences. They also implemented their own GloVe Model, which explores word-word co-occurrence within a given corpus. Alternatively, Pérez-Rosas et al. (2017) introduced the analysis of Crowdsourced Datasets employing two main models, namely, Learning Curves and Cross-domain analyses. In the case of Learning Curves, the study examined whether large amounts of training data could improve the identification of fake content. As for Cross-domain analyses, the main hypothesis was that all the models they had designed in previous works could be applied across domains, particularly across six news domains within the FakeNewsAMT dataset. They concluded that their best performing models resembled human ability in deceit-spotting tasks.

Yea Jang and Volkova (2018) aimed to analyse and contrast moral foundations and connotations across deceptive news types. In order to do so, research was structured in three different phases. First, the study focused on the examination of different linguistic

realisations across deceptive strategies (misleading / falsification) and types (disinformation, propaganda and hoaxes). In this study, disinformation refers to false facts that are spread in order to deliberately deceive the audience. Propaganda is regarded as a form of persuasion that attempts to influence the emotions, attitudes, opinions, and actions of specified target audiences for political, ideological, and religious purposes. A hoax is a type of misinformation that aims to deliberately deceive the reader.

Secondly, the researchers analysed connotations among agents of deceptive news across different types of deceptive content to provide deeper understanding of writers' perspectives and intentions. Finally, the findings were incorporated into a database to build predictive models for deception detection. The results of the study were compartmentalised into three main categories, namely, (a) classification, (b) linguistic analysis and (c) suspicious news retweet patterns. It was observed that misleading vs. falsification deceptive strategies were carried out in linguistically different ways across domains (news, tweets, speech…). The only shared linguistic signals were subjective language, harm, moral foundation, and negation.

Ott et. al. (2011) conducted research in the field of online product reviews, motivated by the increasing tendency of consumers to rate and review products on the web. As reported in this study, deception can also be found in these reviews, especially those written under the baton of certain companies. The study addressed deceptive opinion spam, which refers to fictitious opinions designed in a malicious way to sound authentic. The researchers created a model drawing on previous work from psychology and computational linguistics. In order to build the corpus, the study recruited 400 volunteers to articulate deceptive opinions on different hotel experiences (provided by the study). Those 400 deceptive opinions constituted the deceptive corpus. On the other hand, 400 real reviews were retrieved from TripAdvisor. In order to check their reliability, a set of criteria was applied. Then, the study employed three human judges and two virtual meta-judges (majority and sceptic). The human judges had to decide whether the reviews were genuine and honest, or deceiving. The results showed that all three human judges suffered from truth-bias. In particular, they believed that most reviews were honest. It was concluded that the detection of deceptive opinion spam was well beyond the capabilities of human judges. From a more linguistic point of view, the results suggested the importance of considering both the context (unigrams, bigrams…) and the

motivations underlying a deceptive piece. Additionally, the research shed light on a plausible relationship between deceptive opinion spam and imaginative writing, based on POS (point of sale) distributional similarities.

Mihalcea and Strapparava (2009) aimed to investigate whether automatic classification techniques represented a viable approach to identifying truths and lies in written texts. Research was carried out with the assistance of computational techniques so as to give an answer to the following questions: Are truthful and deceptive texts separable, and does this property hold for different datasets? and, provided that truths and lies are separable, what are the distinctive features of deceptive texts?

In order to carry out the research, a corpus was required with explicit labelling of the truth value associated with each statement. Since such a dataset had not been created beforehand, the first phase of the study was to articulate it. The researchers focused on three different topics, namely, abortion, death penalty and best friends, for which they relied on the Amazon Mechanical Turk service. For the first two topics, the contributors were asked to imagine they were taking part in a debate, so they had around 10-15 minutes to express a genuine opinion about the topic, and also to articulate an opinion they did not really believe in. For the third topic, the respondents were asked to provide true information about a friend of theirs, and then to write another statement about a person they could not stand, pretending it was a close friend of theirs. At the end, two hundred statements were collected for each topic (100 false and 100 true). These statements underwent manual verification to ensure the quality of the contributions. For the experiments, two classifiers were used, namely, Naïve Bayes and SVM, which were selected based on their performance and diversity of learning methodologies. In order to gain a better understanding of the features of deceptive texts, a method was devised to calculate a score associated with a given class of words. The results showed that in both truthful and deceptive language, three of the top five dominant classes are related to humans (cues: person, child, human, baby, man, girl, humans, individual, male, person, adult…). In deceptive texts, however, the human-related word classes represent detachment from the self. Instead, the words that are closely connected to the self (I, friends, self) are dominant in truthful statements.

Furthermore, the fact that words related to certainty are more dominant in deceptive texts is noteworthy, which is probably motivated by the need of the speaker to emphasise the (fake) truth. Also, belief-oriented terms (believe, feel, think…) are more frequent in truthful statements.

Deceit almost always comes in the form of bullshit. Pennycook et al. (2015) analysed the propensity of readers to interpret pseudo-profound bullshit as real, genuine information. Pseudo-profound bullshit, according to the researchers, consists of seemingly impressive assertions that are typically vacuous in meaning. Their main hypothesis revolved around the fact that the more complicated the bluff, the more people would be inclined to believe it. In order to gather data, respondents were presented with ten randomly-organised buzzwords which had no discernible meaning (e.g., "Wholeness quiets infinite phenomena"). The participants had to rate those statements according to their profoundness on a 5-point scale. Furthermore, participants underwent five cognitive tasks intended to assess their analytic cognitive style, components of cognitive ability and heuristics and biases. After gathering data, the researchers established two mechanisms that could explain why people might rate bullshit as profound, even when the meaning of those claims was unintelligible. They discovered a type of response bias wherein some individuals were more prone to relatively high profundity ratings, showing an uncritical open mind. In addition, bullshit sensitivity was associated with lower paranormal belief rather than with conspiratorial ideation or unorthodox religious beliefs.

The aforementioned studies discuss the difficulties in identifying deceit in speech. While some attempt to battle the spread of inaccurate information online employing technological means (creating models and algorithms), others evaluate human cognitive resources to identify and remove faulty content online. The present dissertation will focus on the latter. Nonetheless, all of them include different tools and strategies to collect quantitative data, which were taken into serious consideration in the present dissertation. Furthermore, the studies discussed in this section feature statistical strategies to codify and analyse both qualitative and quantitative data, which were further considered in our own research.

4. Research questions and hypotheses

Taking as a starting point previous formal studies (section 2) and empirical works (section 3) on Post-Truth, we formulate two research questions (RQs).

RQ 1. Does previous knowledge shield readers against deceit in argumentative and informative pieces of news?

Based on this RQ, we expect respondents with self-alleged background knowledge to successfully identify the fabricated texts in our questionnaire. This RQ is built upon the premise that knowledge is key to developing critical thinking, as shown in previous works by Atkinson (1997), Chrobak (2018), D'Ancona (2017) and López Aymes (2012). We seek to determine whether this direct relationship between knowledge and critical thinking skills still holds. In order to do so, we will assume that there is in fact a connection between the two. Any deviation from the expected results could effectively point to the influence of Post-Truth as stated in section 2.

RQ 2. Does the combination of Argument from Authority, manipulation of empirical data and extra-vocalisation heteroglossia contribute to the perceived validity of argumentative or informative pieces of news?

Based on RQ 2, we expect respondents to be misled by the fabricated texts in the questionnaire. The aforementioned deceptive cues have been analysed in isolation in previous works (Pennycook et al. 2015, Yea Jang and Volkova 2018, Wróbel 2015) and their effectiveness has been attested. Furthermore, different theoretical approaches have examined the implications of including such cues in speech (Aristotle and Kennedy 1991, Arnold 1960, Martin and White 2005), arguing that they could result in logical fallacies.

Consequently, we put forward two main hypotheses, namely, (a) The more people know about a topic, the more likely they are to identify deceit in that field in particular and (b) The combination of three concrete deceptive cues contributes to the perceived reliability of biased pieces of news.

5. Methodology

This dissertation seeks to determine the extent to which the combination of three concrete deceptive cues in speech contributes to the potential perceived validity of

different pieces of news. We will also try to examine whether this combination in particular could serve as a vehicle to promote certain ideas following different political agendas. Furthermore, a connection will be established between the previous knowledge readers had on different topics and the deception index that different sets had. In order to do so, a questionnaire (Appendix I) was designed targeting different deceptive cues in speech, namely argument from authority, use of empirical data and extra-vocalisation heteroglossia, as will be discussed in section 5.2. The study will gather quantitative data.

5.1 Participants

The study targeted 100 participants aged sixteen to twenty-six. The only requirement criteria was for the respondents to hold an official certificate in Advanced or Proficiency in English in order to ensure the full understanding of the sample texts. The respondents were mainly students or young workers occupying a variety of positions, including teachers, administrators, architects and engineers. The initial sample was recruited from a British high school located in Madrid. The initial sample included Y12 and Y13 students, together with young teachers and members of staff. The initial purposive sample soon evolved to snowball sampling, thus gathering a hundred answers from different places in Spain and England. The research was aided by teachers from the aforementioned school who ensured the participants answered the questionnaire without the assistance of electronic devices. They further ensured that the participant's proficiency in English was attestable.

All the respondents signed a general informed consent form at the beginning of the year regarding their voluntary participation in research carried out at school by members of staff. In the case of the participants under 18, the consent form was signed by their legal tutors.

The questionnaire was made available in Google Forms and the participants were sent a link to their institution emails to complete it. There were no demographic questions involved.

5.2 Deceptive cues and research variables

The questionnaire included five different sets of texts covering current affairs, namely, the Russian-Ukrainian conflict, mask use and COVID-19, veganism, eating

disorders and gender pay gap. Each set consisted of two texts. One of the texts was retrieved from a reputable source and included mostly neutral and objective information. Therefore, the nature of this text was purely informative. The second text was purposely fabricated for this study employing different deceptive cues. All the fabricated texts included some hidden political messages, thus employing factual/fabricated, out-of-context data to support their political claim in a subdued and underlying manner. The respondents were asked to identify the deceptive text, without knowing about the deceptive cues involved (Appendix I).

The deceptive cues at stake involve argument from authority, use of empirical data and extra-vocalisation heteroglossia. Argument from authority describes a logical fallacy by which arguments are introduced in speech using the words of experts or authorities without any further supporting evidence. The use of empirical data per se does not lead to deception; rather, it raises perceived validity standards as it is part of the logos (Wróbel, 2015). Extra-vocalisation heteroglossia refers to the inclusion of different voices in speech.

These three deceptive cues do not correspond to a single set of criteria by any scholar in particular. Instead, they are widely-used resources and techniques that are said to have an impact on the overall validity and potential reliability of a text. Aristotle and Kennedy (1991) proposed three main areas within persuasive speech, namely, Logos (logic), Ethos (authority) and Pathos (emotion). These areas are intertwined, and different fallacies have stemmed from them. One of the most salient fallacies of credibility or authority is known as *Argumentum ad verecundiam* (argument from authority*)*. This fallacy is mostly used when the topic discussed requires some degree of expertise and is foreign to the populace. Therefore, this cue was included in most of the fabricated texts, but it was particularly present in those which revolved around more scientific matters. Another powerful technique to achieve deceit in speech is the use of inaccurate or false empirical data (Bufacchi, 2020, Frankfurt, 2005, Mcintyre, 2018, Trivers, 2013). Common fallacies of logos include *Post hoc ergo propter hoc* (creating causal relationships between events that are not directly linked), *Dicto Simpliciter* (providing overly simplified conclusions, neglecting evidence) and *Non sequitur* (providing conclusions that cannot be logically derived from the arguments or propositions provided) (Williamson, 2018). These fallacies have been included in the fabricated texts. Extra-vocalisation heteroglossia stems from Martin and White's Appraisal Theory (2005). The

heteroglossic nature of persuasive pieces can be linked to the fallacy *Argumentum ad populum*, which appeals to common knowledge and shared beliefs.

Argument from Authority is typically considered one of the most representative examples of fallacious arguments (Cummings, 2015). These are arguments that are deductively invalid or inductively very weak, thus containing unjustified premises or ignoring relevant evidence. These faulty arguments involve false judgements of factual evidence, and they inevitably lead to untenable conclusions.

Thus, Argument from Authority broadly refers to the claim that the speaker is an expert, and so their arguments should be held in high regard. However, the expert does not necessarily have to be the main voice of a text for it to make use of this fallacious argument. Sometimes, an Appeal to Authority is made, but the authority is not specified, as in "Experts agree that ..." or "scientists say ...". The case becomes even more sanguine when fabricators appeal to non-existent authorities, thus blatantly inventing quotes and fictional characters to support their claims.

Sometimes fabricators (that is, individuals who deliberately alter or create facts in speech) pervasively include the testimony of real experts displaying some sort of misquotation. This makes their statements fit a given argument and cater for the reader's need for external support.

In the questionnaire that was designed for this study, the fabricated texts one to four include some type of Argument from Authority. Examples are illustrated in Table 1.

Table 1. Argument from Authority

SET 1 Text A	- Dmitro Kuleba, Ukranian *Minister* of Foreign Affairs, has just confirmed Russia's invasion in Ukraine. - According to experts on international affairs, Russian tanks and troops (…)	-False quote. -Appeal to Authority.
SET 2 Text A	- Panagis Galiatsasos, (M.H.S) is an expert on lung disease at John Hopkins Bayview (…) - As such, he advocates for the immediate removal of masks (…)	-Real quote and Appeal. -Fake inference and quote.
SET 3 Text B	- "(…) present for too long," says Janet Cade	-Real quote and Appeal + Fake conclusions.
SET 4 Text B	- Darshan Jhala (1965-) is an expert on eating disorders and (…) - In her words, "it can all be narrowed down to a matter of solidarity (…)"	-Fabricated persona and quote. -Fabricated quote.

Argumentative and Informative texts equally provide evidence on a given topic either to lend support to or refute a certain hypothesis, or simply to provide a comprehensive revision of the current state of a particular situation. In most cases, evidence is linked with the use of empirical data. However, the fact that using empirical data strengthens arguments has not escaped the eye of crafty writers down the years. In fact, this apparently auspicious technique has become a double-edged sword in the service of pugnacious authors.

The importance of supporting ideas with evidence is so rooted in our way of understanding communication that it is now possible to find evidence to all theories and ideas on a simple click. Evidence, as mentioned in Section 2.5, can come in many forms, but it is scientific data that is still primarily used to raise validity standards of a given argument.

Employing questionable sources and data in speech is a powerful tool to deception, as numbers are ideal vehicles for propagating bullshit. They feel objective, but can be manipulated with ease. Exact counts and exhaustive measurement can be almost impossible to achieve. In this light, there are many ways for deceit to creep into facts and figures that seem entirely factual. However, there is an overarching issue that can compromise research as a whole. As Goodhart (1984) puts it, “When a measure becomes a target, it ceases to be a good measure”.

It is known that employing unreliable conclusions drawn from questionable research is commonplace in political communication (Trivers, 2018). But what about the use of reputable research and sources? How does this translate into bullshit and deceit?

The media and politicians themselves employ data, results and conclusions from reliable sources to strengthen their points within a certain narrative. However, this pervasive technique can quickly turn to a logical fallacy if only data that supports their viewpoints are taken into consideration. Cherry-picking refers to the purposive selection of data that supports your claim (see section 2.5). This technique can be deliberate or accidental, as cognitive and confirmation bias typically prevent even the most skilled writers from finding faulty elements in data that backs their arguments. Furthermore, accidental Cherry-Picking can stem from a general misunderstanding of the nature of statistics.

In addition, sometimes fabricating data is the easiest and quickest way to elevate reliability standards in political speech. The perpetrators of such actions will most likely claim that science today does not provide an unerring conduit to the heart of reality (See Section 2.5). They will turn scientific imprecisions, changes of paradigm, certain mistakes over the years and peer review into political profit (Higgins, 2016).

An inaccurate interpretation of data inevitably reduces the value of the body of results (Bergstrom, 2021). Regardless of the moral foundations of this practice and the hidden intentions of a writer, the general audience still holds arguments with the presence of empirical data in high regard, especially those which lead to conclusions that match their pre-existing beliefs. In light of the above, the fabricated texts in the questionnaire present misleading empirical data, as displayed in Table 2.

Table 2. Use of empirical data

SET 2 Text A	- After extensive research, it has been observed that patients (…) - (…) in the most severe cases	Source is not specified. Data proves insufficient
SET 3 Text B	- The number of Vegans in the UK having quadrupled between 2006 and 2018, according to research by The Vegan Society.	This quote is actually real, but it has been used to support a fallacy.
SET 4 Text B	- (…) more than 76% of respondents with chronic eating disorders…	Fabricated data.
SET 5 Text A	- (…) stands at a whopping 14.1% and has only changed minimally over the last decade - Research on the matter has revealed that the main reasons (…)	Real quote + fabricated evaluation (whopping) Fake reference: research has been carried out but the main reasons have been fabricated

Early studies on the evaluative and emotional dimension of language were carried out towards the last decades of the past century (Krzeszowski, 1990, Osgood, 1980). These and other studies (Hunston and Thompson, 2000, Lago, 2003) contributed to Martin and White's Appraisal Theory (2005), which is the most elaborate model of evaluation in the literature to date (Alba Juez, 2022). The theory was formulated in an attempt to better understand the social function of interpersonal linguistic cues, and to create a model that could facilitate the study of intersubjectivity in discourse (Oteíza, 2017). The appraisal framework considers three different domains of analysis, namely,

attitude, graduation and engagement. This multidimensional framework seeks to achieve a systematic organisation of the resources employed to negotiate emotions and judgements.

The system of attitude considers the different ways in which feelings are addressed in discourse, and three main areas are considered, namely, emotions (affect), ethics (judgement) and aesthetics (appreciation). The system of graduation aims to frame the way the aforementioned values of attitude can be raised or lowered in discourse, by intensifying or diminishing meanings. The system of engagement serves the purpose of analysing the source of attitudes, this having a monoglossic or heteroglossic nature.

Current attempts to categorise Post-Truth and analyse it within Discourse Analysis frameworks have resorted to this theory to shed light on the different pragmatic mechanisms that lead to deception in speech (Hasibuan, 2020, Martel, Pennycook, and Rand, 2020). Indeed, manipulation is typically achieved by misrepresenting engagement to convey judgements, therefore, manipulating sub-systems of appraisal.

Consequently, one of the most salient techniques has been that of including multiple voices in speech (heteroglossia). This can be seen with the inclusion of common knowledge formulae (for example, "it is believed" or "we all know that"), assimilated extra-vocalisation (for instance, "researchers typically hold that"), impersonalised probability (e.g., "x will most likely" or "it would be difficult to find"), hearsay (e.g., "it is said that") and quotatives.

Table 3. Extra-vocalisation heteroglossia

SET 1 Text A	- It is clear that Russian President V. Putin	Fabricated general belief.
SET 3 Text B	- (…) but we all know the little impact - (…) it is believed that this diet - (…) so, it is unlikely to see	Fabricated general belief. Hearsay. Impersonalised Probability.
SET 4 Text B	- (…) and other colleagues	Fabricated peer support.
SET 5 Text B	- The more conservative voices will (…) - It has been proved that all (…)	Assimilated Extra Vocalisation. Fabricated general knowledge data.

Thus, not all fabricated texts include all three deceptive cues. Instead, some texts have been designed to determine the extent to which certain cues influence others.

At the end of the questionnaire, the respondents were asked to answer some questions revolving around previous knowledge on the different topics. Based on these questions, we will shed light on knowing whether the respondents had read about the different topics beforehand, therefore having some contextual knowledge to help them decide whether the different texts were deceptive or not. Hence, our two main variables will be (a) success in spotting deceit and (b) previous knowledge.

5.3 Statistical methods for data analysis

Once the data were collected, answers were codified and translated into quantitative data, as shown in Table 4.

Table 4. Codification of test results

Test	**Right guess**	**Uncertain**	**Wrong guess**
	1	0	-1
Previous knowledge	**No knowledge**	**Some knowledge**	**Expertise**
	0	1	2

The codification of results was essential to build contingency tables. The results (see section 6) will be presented in five different contingency tables, which refer to the five Sets of the questionnaire (see Appendix I). Contingency tables are tabular representations of categorical data, which show frequencies for particular combinations of two discrete variables: X refers to previous knowledge and Y addresses the answers (See Table 5). Consequently, each cell in the table displays a mutually exclusive combination of X-Y values. Each table will show both the observed results and the expected results, which will be addressed later on. The former will be shown in blue, and the latter will be shown in orange. Table 5 has been retrieved from Table 6 (Set 1 results), which will be addressed in section 6. Table 5 shows that 19 respondents claimed expertise on the Russian-Ukrainian conflict. The table further shows that out of those 19 respondents, 14 of them managed to identify the biased text, 1 respondent was uncertain, and 4 respondents were not able to identify the fabricated text.

Table 5. Set 1 results - observed and expected results of knowledgeable respondents

	Information	
	A lot	
Observed/ Expected	O	E
Right	14	12.35
Uncertain	1	1.33
Wrong	4	3.32
Observed results	**19**	

Our main aim was to compare the dependency of the variables answer and information (previous knowledge) so as to examine the level of correlation between the respondent's success in spotting deceit and their previous knowledge. If our two variables were independent, no correlation between previous knowledge and success in spotting deceit could be derived. If our two variables were dependent, it would be safe to claim that there is in fact a direct relation between previous knowledge and success in spotting deceit, which goes in line with our RQ1 (see section 4). Thus, we put forward two hypotheses for data analysis, namely (a) H.0: There is no relationship between previous knowledge and success in spotting deceit and (b) H.1: There is a relationship between previous knowledge and success in spotting deceit. In order to analyse the relation that holds between the two, Chi-Square tests of independence were run in Excel. These tests were conducted by comparing the observed data with the expected values. The Chi-Square formula employed was as follows:

$$\chi^2 = \sum(O_i - E_i)^2/E_i,$$

where O represents the observed frequency, E is the expected frequency under H.0 and computed by:

$$E = \frac{row\ total\ x\ column\ total}{sample\ size}.$$

Thus, the following section will display the results of the five Sets of the questionnaire together with the level of dependency of our two variables. The latter will be represented in p-values. If a given p-value is under 0.05, we can conclude (at a significance level of 5%) that the association between the variables is statistically significant, thus confirming our first hypothesis (RQ1, see section 4).

6. Results

The results obtained from the questionnaire discussed in the previous section have revealed that the level of dependency between the two variables under analysis (that is, success in spotting deceit and previous knowledge) is not consistent within the five sets established for the present study (see section 5.2).

The results of the first set of texts of the questionnaire show that 65% of the respondents were able to identify the real and fabricated texts, while 28% of the participants were misled and a remaining 7% could not tell the difference between the two text types.

Furthermore, the results reveal that 64 out of the 65 participants claimed they knew a lot or something about the Russian-Ukrainian conflict. On the other hand, 26 out of the 28 participants who did not offer the right answer claimed to have previous knowledge on the matter, 4 of them even claiming expertise, as can be seen in Figure 1 and Table 6. The right answer in Set 1 was "A is fabricated, B is real".

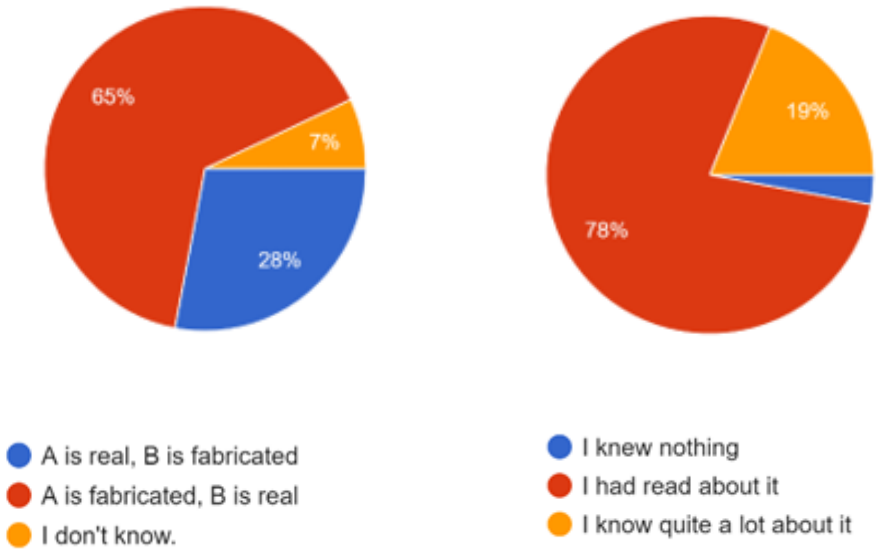

Figure 1. Set 1 results - Ssuccess in spotting deceit and previous knowledge about the Russian-Ukrainian conflict

The following table shows the observed and expected results regarding the participants answers (right, uncertain, wrong) and their self-appraised level of previous knowledge (a lot, some, none), as discussed in section 5.3. The table was built in accordance with the options displayed in the questionnaire (See Appendix I). As shown in Table 6, 78% of the respondents claimed to have previous knowledge on the matter. Out of these, 64% of the respondents managed to identify the fabricated text, but 28% failed to do so. The table further shows that only three respondents admitted to knowing nothing about the conflict, and two of them were effectively misled by the fabricated text.

Table 6. Set 1 codified results: observed and expected results on the Russian-Ukrainian conflict.

	Information						
	A lot		Some		None		
Observed/ Expected	O	E	O	E	O	E	
Right	14	12.35	50	50.7	1	1.95	**65**
Uncertain	1	1.33	6	5.46	0	0.21	**7**
Wrong	4	3.32	22	21.84	2	0.84	**28**
Observed results	**19**		**78**		**3**		**100**

The chi-square test of independence run in Set 1 shows that we do not have statistical evidence to reject H.0 (X^2 (4, 100) = 2.96881256, p = 0.56305804), thus, we cannot assume there is a dependency between previous knowledge and success in spotting deceit.

The second Set revolved around mask use and lung conditions derived from COVID-19. The results of the second set show that 63% of the respondents were able to identify the real and fabricated texts, 22% of the participants were misled and the remaining 15% were not certain, as displayed in Figure 2. The right answer in Set 2 was "A is fabricated, B is real"

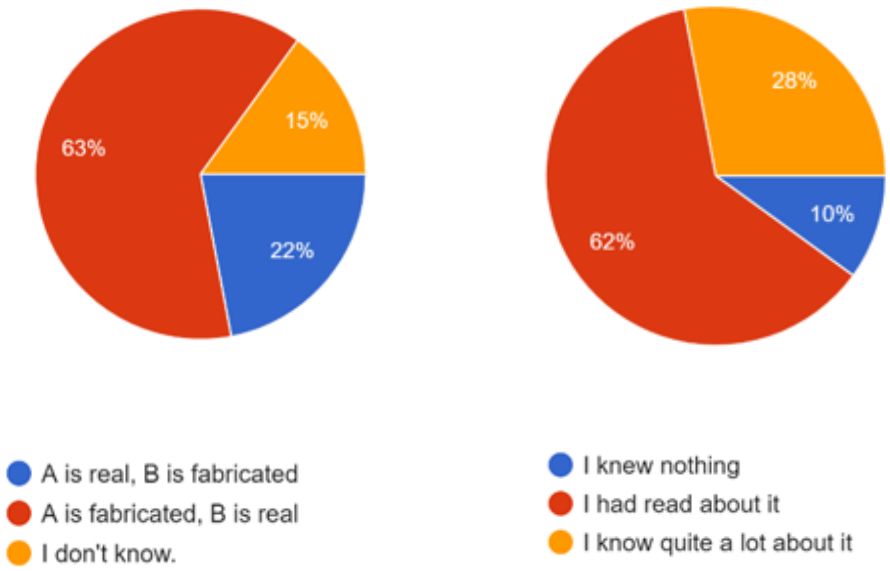

Figure 2. Set 2 results – Success in spotting deceit and previous knowledge on mask use and lung conditions related to COVID-19

The results further show that out of the 63 respondents who were right, 55 of them claimed to know something about the topic before taking the test. On the other hand, out of the 22 respondents who did not complete the task successfully, 21 also claimed to have previous knowledge. Similarly, there were 15 respondents who were uncertain, 14 of them claiming they had read about COVID-19 and lung conditions before taking the test. The results further reveal that there were 7 respondents who claimed expertise and did not manage to identify the biased text, as shown in Table 7.

Table 7. Set 2 codified results: observed and expected on mask use and lung conditions related to COVID-19

	Information						
	A lot		Some		None		
Observed/ Expected	O	E	O	E	O	E	
Right	18	17.64	37	39.06	8	6.3	**63**
Uncertain	3	4.2	11	9.3	1	1.5	**15**
Wrong	7	6.16	14	13.64	1	2.2	**22**
Observed results	**28**		**62**		**10**		

The chi-square test of independence run in Set 2 shows that we do not have statistical evidence to reject H.0 (X^2 (4, N = 100) = 2, 17358908, p = 0,70386735), thus, we cannot assume there is a dependency between previous knowledge and success in spotting deceit.

The results of Set 3 reveal that 57% of the respondents were able to identify the real and fabricated texts, 25% of the participants were misled and 18% remained uncertain, as displayed in Figure 3. The right answer in Set 3 was "A is real, B is fabricated".

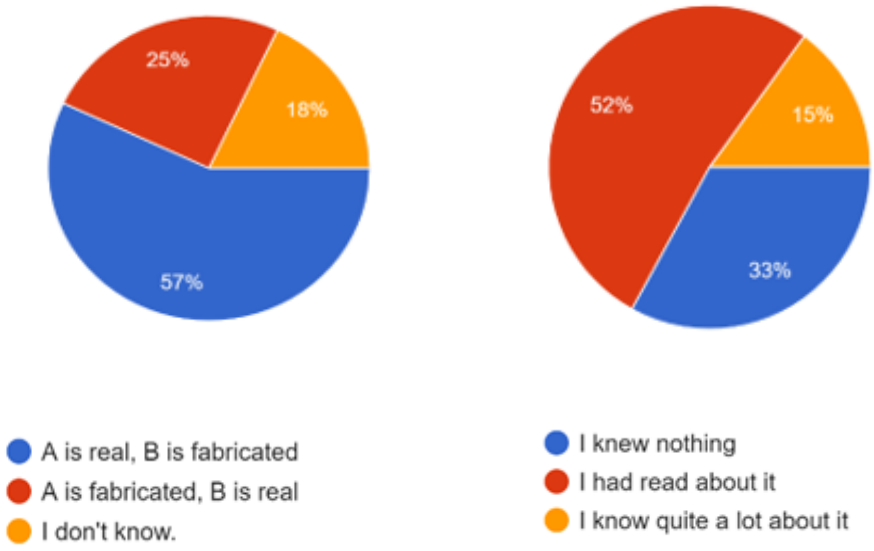

Figure 3. Set 3 results – Success in spotting deceit and previous knowledge on the vegan diet

Out of the 57 respondents who were right, 46 had previous knowledge on the vegan diet, and 11 participants did not report to have previous knowledge in this respect. In addition, out of the 18 respondents who were uncertain, 72% of them did not have any previous knowledge at all. On the other hand, out of the 25 respondents who were not right, 64% of them claimed they had read about veganism before taking this test (Table 8).

Table 8. Set 3 codified results: observed and expected results on the vegan diet

	Information						
	A lot		Some		None		
Observed/ Expected	O	E	O	E	O	E	
Right	10	8.55	36	29.64	11	18.81	**57**
Uncertain	1	2.7	4	9.36	13	5.94	**18**
Wrong	4	3.75	12	13	9	8.25	**25**
Observed results	**15**		**52**		**33**		**100**

The chi-square test of independence run in Set 3 shows that the association between the variables is statistically significant (X^2 (4, N = 100) = 17,5460734, p = 0,00151338), thus, our null hypothesis (H.0) is rejected and dependency between previous knowledge and success in spotting deceit in this set in particular can be established.

Set 4 revolved around eating disorders and visual triggers in supermarkets. The results of the fourth Set indicate that 51% of the respondents were able to identify the real

and fabricated texts, while 30% of the participants were misled and 19% were uncertain, as indicated in Figure 4. The right answer in Set 4 was "A is real, B is fabricated"

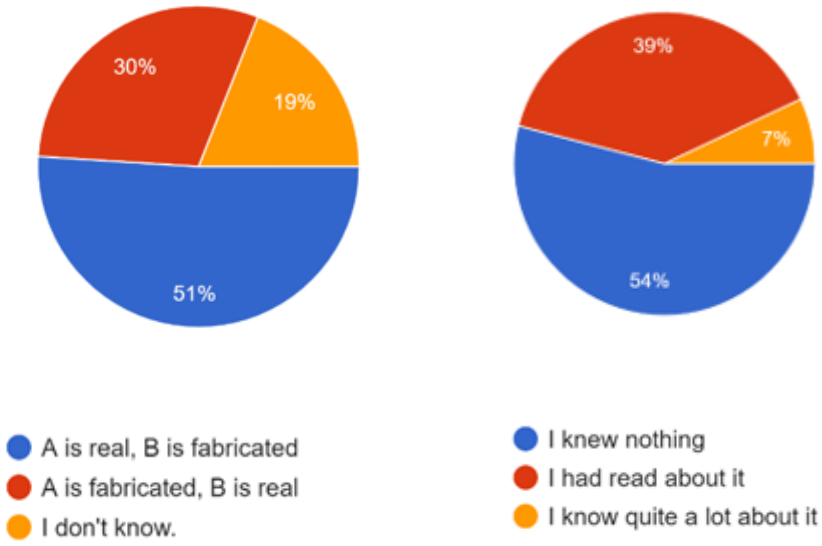

Figure 4. Set 4 results – Success in spotting deceit and previous knowledge on eating disorders and visual triggers in supermarkets

The results obtained in Set 4 reflected that the topic of eating disorders and visual triggers in markets was unfamiliar to most of the respondents (see Table 8). Out of the 51 respondents who were right, 46 of them claimed either some or no previous knowledge. Similarly, all 19 uncertain respondents claimed either some or no knowledge, as did 28 out of 30 misled respondents. In addition, out of 7 respondents who claimed expertise on the matter, 2 were effectively misled.

Table 9. Set 4 codified results: observed and expected results on eating disorders and visual triggers in supermarkets

	Information						
	A lot		Some		None		
Observed/ Expected	O	E	O	E	O	E	
Right	5	3.57	20	19.89	26	27.54	**51**
Uncertain	0	1.33	4	7.41	15	10.26	**19**
Wrong	2	2.1	15	11.7	13	16.2	**30**
Observed results	**7**		**39**		**54**		**100**

The chi-square test of independence run in Set 4 shows that we do not have statistical evidence to reject H.0 (X^2 (4, N = 100) = 7.31622294, p = 0.1200915), thus, we

cannot assume there is a dependency between previous knowledge and success in spotting deceit.

The data obtained in Set 5 revealed that 48% of the respondents managed to identify the real and the deceptive texts, 29% of the participants were misled and 23% of them were uncertain, as shown in Figure 5. The right answer in Set 5 was "A is real, B is fabricated".

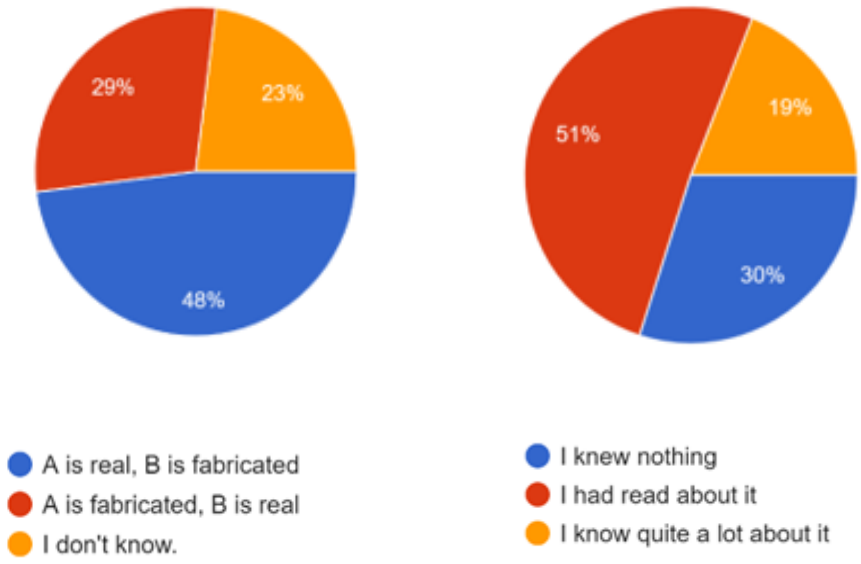

Figure 5. Set 5 results – Success in spotting deceit and previous knowledge on gender pay gap

With regards to confidence in their knowledge, 75% of the respondents who were right were either very confident in their knowledge or they knew something about gender pay gap. Similarly, 75.8% of the respondents who were not able to spot deceit and were wrong, also claimed they knew either a lot, or they had read about the topic before taking the test. The results further reveal that 52% of the respondents who were wrong admitted to having read about gender pay gap before taking the test, as shown in Table 10.

Table 10. Set 5 codified results: observed and expected results on gender pay gap

	Information						
	A lot		Some		None		
Observed/ Expected	O	E	O	E	O	E	
Right	8	9.12	28	24.48	12	14.4	**48**
Uncertain	4	4.37	8	11.73	11	6.9	**23**
Wrong	7	5.51	15	14.79	7	8.7	**29**
Observed results	**19**		**51**		**30**		**100**

The chi-square test of independence run in Set 4 shows that we do not have statistical evidence to reject H.0 (X^2 (4, N = 100) =5.43542986, p = 0.24546382), thus, we cannot assume there is a dependency between previous knowledge and success in spotting deceit.

The results of the study suggest that dependency between self-appraised previous knowledge and success in spotting deceit cannot be established, as only Set 3 showed that the association between the variables was statistically significant. Nonetheless, it cannot be concluded that the variables previous knowledge and success in spotting deceit are completely independent either.

7. Discussion of results

The results of the first set show that almost two thirds of the respondents were able to identify deceit and bias in text A. There are several factors that can account for these results, such as the multiple references to authority and other voices (perhaps too many), and a quite revealing last statement that was observed in Set 1, Text A: "it is about time Europe started thinking about its rather austere military expenses". (See Appendix 1).

Furthermore, in this Set in particular there seems to be a correlation between previous knowledge and relative success at first sight: the more people know about something, the less likely they are to be deceived. However, even though 97% of the respondents claimed to know about this topic -some of them even considering themselves experts on the field- 35% of the respondents were not able to spot the hidden message and fake content in Text A.

These results indicate that the vast majority of the respondents may have the same opinion on the topic. That is, the general analysis of the conflict in the Media (both in Spain and the UK) has been quite unanimous, as far as causes, consequences and order

of events are concerned. This suggests that there are not many political elements involved in this respect. The only issues that could be prone to political bias could be the course of action after the economic problems that Europe is facing as a result of the conflict, and other issues related to military expenses, which was featured in Text A.

In addition, many respondents may not have considered the last statement deceitful because of Opinion Journalism (D'Ancona, 2017, Frankfurt, 2005, Giusti and Piras, 2021). This term refers to informative pieces that report a personal interpretation of events, therefore, displaying a subjective viewpoint. This type of journalism, which rather conveniently is often not labelled as such, gives leeway to the author to imbue their pieces with hidden messages and partisanship. According to Sullivan (2015), society is so used to getting their information from these pieces that it is hardly worth notice anymore. Sullivan (2015) warned about the many risks of not labelling this type of journalism appropriately, claiming that there should be a careful separation of news and opinion, as quoted in the following lines:

> But readers ought to know what they're getting. They should never be confused — or get the feeling of whiplash — when opinion suddenly appears in what they thought was news. In the disaggregated world of digital reading, where readers encounter stories without the context of the newspaper page, something as clear as a "commentary" label is not just helpful. It's necessary. (Sullivan, 2015)

This concept is closely linked to Higgins's (2016) and D'Ancona's (2017) revision of Post-Truth. The former claimed that there is a tendency to imbue informative pieces with personal input and evaluation, and the latter considered controversy and conflict key elements in media communication (see Section 2.4).

Although 97% of the respondents claimed to have read about the conflict, it would be interesting to know how many of them actually read some kind of academic analysis, or just got their knowledge from mainly visual sources. According to the 2017 AEDE's annual report, (Asociación de Medios de Información), five years ago more people chose to read online journals than paperback versions, estimating 7 million readers for the former, and 6.5 million for the latter. The report also revealed that it was estimated that 56.8% of news-consumers in Spain gathered information directly from social media, 93% watched the news on TV regularly, and 19% listened to the news broadcasted on the

radio. More recently, the annual Digital News report (2021) estimated that 64% of the population still watched the news on a daily basis (TV), 55% of Spaniards chose social media to get their information, 25% preferred both written and online press, and 20% chose to be informed by listening to the radio (Amodeo, Vara-Miguel, Negredo and Kaufmann, 2021). Thus, there is every likelihood that most of our respondents gathered information about the Russian-Ukrainian conflict online or from visual sources in the news.

The use of visual materials within media communication has also been influenced by Post-Truth tokens (Ford, 2018, Marzal-Felici, 2021). Many individuals are prone to believe what they can actually see. Therefore, the media industry has mastered different techniques to cater for the unquenchable appetite of the audience for visual stimuli. These techniques have been fuelled by the development of image analysis and edition software. The alteration of visual images can be tremendously effective to raise perceived validity standards of different pieces of news, for the audience may not have been sufficiently trained to find the kernel of truth in all the images they are presented with. Hence, it is relatively simple to imbue informative visual materials with deceptive language and covert political messages. This could explain why 35% of our respondents did not identify Text A as politically biased even though they knew about the conflict before taking the test.

The results of the second set of the questionnaire revealed that most respondents were able to accurately spot deceit. However, 37% were either misled or did not feel confident to provide an answer. Perhaps the most interesting part of the body of results is that ten respondents out of a hundred claimed they knew nothing about mask use and related health conditions, considering that we have been bombarded with news on the matter since early 2020. We believe that it was the last statement in Text A that led most respondents to believe it was deceitful: *"*As such, he advocates for the immediate removal of masks indoors…". Nevertheless, it is unclear whether this statement could be considered manipulative for offering a personal conclusion per se, or for the obvious faulty piece of advice it offered. This is an example of the *non sequitur* fallacy explained in Section 5.2.

Although policies revolving around mask use should be based on scientific criteria, the media has been offering glimpses of politicization regarding mask use for the

past two years. Recent studies on political bias with respect to mask use (Lang, Erickson and Jing-Schmidt, 2021, Yeung, Lai and Luo, 2020) have revealed that there is indeed a rhetorical polarization divided along partisan lines. It was observed that populist narratives challenged the use of masks under the premise that the state should not impose the use of masks on the general public. This phenomenon has been particularly evident in the USA, where supporters of different parties have made mask use a sign of their political leanings. This great divide has split the country in a time when partisan factionalism and social media are already achieving similar ends. This resonates with D'Ancona's (2017) revision of Post-Truth and its relation to polarisation. The controversy regarding mask use is part of a broader phenomenon known as Culture Wars (Taviss Thompson, 2010). These conflicts are triggered and fuelled by political parties or groups in order to increase tension within the populace. They do so by choosing an emotive topic which people can easily identify with or against, thus increasing polarisation.

Although this phenomenon is more apparent in the USA, some voices in Spain have also been advocating for mask-removal since it was first imposed. However, there has been a general consensus in our country with regards to mask use: a relatively recent study by CIS (2020) asserted that 99.2% of the respondents were in the habit of using masks on a daily basis. Almost two years later, CIS conducted research again and concluded that, although many advocated for revisiting policies on COVID-19, 96.3% were in favour of maintaining the use of masks indoors (CIS, 2022).

The Covid-19 pandemic exacerbated many of the problems related to misinformation in the media, some authors even employing the term infodemic to refer to the blatant spread of false and inaccurate information related to the virus. Deeply rooted in prejudice and (un)founded fear, themes of xenophobia, racism, government deception, secrecy, and misconduct were intertwined with those of a more scientific nature. Fear fuels the spread of rumours within individuals, often in an effort to warn others, to protect them or just find solace in those who share similar non-mainstream beliefs (Giusti and Piras, 2021).

Despite the debatable efforts of social media platforms, institutions and individuals to control the false or deceptive information about Covid-19, misleading information continues to spread to this day. As can be seen in this set, it is relatively easy

to employ real quotations from reputable experts in the field, and then provide political conclusions that do not necessarily reflect either correlation or causality, therefore being just false *(Post hoc ergo propter hoc & non sequitur*, See Section 5.2). As a general conclusion, it could be argued that taking advantage of the general's public lack of cognitive and/or linguistic resources to understand scientific lingo has been commonplace for the past two years, and COVID-19 pandemic has exacerbated issues related to misinformation, disinformation and a growing distrust of science (see Sections 2.5 and 2.7).

Set 3 is particularly interesting for several reasons. Firstly, there now appears to be a correlation between no knowledge and deceit: 33 of the respondents claimed to know nothing about veganism, of which 25 did not find instances of bias in Text B. Furthermore, the number of uncertain respondents is significantly higher than in the other two texts, which could be pinned to this lack of previous knowledge.

However, uncertainty can also be due to the effectiveness of the different deceptive cues employed in Text B, particularly extra-vocalisation heteroglossia and Argument from Authority. By employing the same quotes and empirical information in both texts, the respondents had to look for other elements in both excerpts to decide whether they were factual or were permeated with political ideas.

Veganism is thought to be highly politicised. Although many vegans adhere to this diet because of dietary reasons, and simply do not enjoy meat and other products derived from animals, many others consider themselves moral vegans, thus, rejecting industrial farming, food waste and environmental damage derived from meat consumption. In this light, veganism and vegetarianism can still be perceived as left-wing phenomena, often met with scepticism and criticism by those who hold more conservative views (Doggett, 2018).

Our intention for Text B was to create an underlying tone of dismissal and disapproval towards veganism: "We all know the little impact individual actions can have" / "this diet runs short on other nutrients" / "it is unlikely to see the vegan diet hailed as the healthiest"…(See Appendix I, Set 4 Text B). The central hypothesis was that those respondents who held rather conservative views and had read pieces mocking or challenging this diet and the political group it supposedly represents, would not be inclined to notice instances of deceit in Text B. Our hypothesis was mainly based on the

notion of cognitive and confirmation bias, which is key within Post-Truth linguistic frameworks (See Section 2.6).

The fact that a left-wing vegan connection has some historical basis has had many implications. On the one hand, people in more traditional environments would feel more prone to reject it, considering it a public declaration of one's left-wing political identity. On the other hand, information revolving around veganism and vegetarianism has ceased to be mostly scientific and informative (nutrients, recipes, long and short-term consequences…) to now include very explicit evaluations -both overly positive and negative- and even fabricated data to support different claims (Greenebaum, 2012).

Consequently, being able to identify the tone of a given piece of news is essential, as the author's tone is closely associated with their purpose (Sullivan, 2015). Particularly in opinion pieces and biased articles, writers will use a certain voice to effectively convey the main idea of a passage, therefore revealing their attitude and position towards the subject. These pragmatic considerations are key to identify bias in speech.

Veganism and Vegetarianism have been on the rise for the past five years. For example, the Guardian stated in 2018 that it "is the year of mainstream veganism, as every trend forecaster and market analyst seems to agree" (The Guardian, July 2018). The fact that 33% of the respondents admitted to knowing very little about it could have different interpretations: Some of them may not know the difference between veganism and vegetarianism, others may have felt that the information they had come across was not of sufficient quality for them to really know about veganism, and some of them may have felt really uncertain during the task and opted for admitting they knew very little.

As the test progresses, it seems clearer that the less people know about a topic, the less certain they are about the reliability of different pieces of information, and the easier it is for them to be misled. However, it is also becoming apparent that having previous knowledge on a given topic does not really shield respondents against deceit.

The fabricated text in Set 4 (Text B) mainly featured Argument from Authority, including the voice of a fabricated expert in the field. The topic selected for Set 4 was rather extraneous to common knowledge so as to see the extent to which the respondents would feel misled by the inclusion of different deceptive cues in speech. The findings obtained in Set 4 displayed the problems related to visual triggers in markets and other

stores, and the impact these would have on people with eating disorders. Text A was eminently objective, featuring objective data provided by a reputable source (University of Cambridge). On the other hand, Text B was predominantly emotional, including different words to trigger sympathy towards those with eating disorders (anxiety levels, anxiety crises, solidarity, respect, suffer tremendously…)(See Appendix I, Set 4, Text B).

In addition, a more reputable persona was fabricated as the main voice of the text by including references to her professional activity and the support of her alleged colleagues. Although not considered in this study, the combination of fabricated sources and strong emotional words can be key to lower the guard of readers so that they would be keener to believe certain messages. This goes very much in line with the Appraisal Theory (See Section 5.2), and the way sub-systems of appraisal can be manipulated to convey deception in speech. Several authors maintain that loading discourse with emotion makes the readers more vulnerable to lies and deceit (Ben-Ze'ev, 1997, Valori, 2018, Zloteanu, 2015).

The results of Set 5 reveal that 51% of the respondents were able to accurately spot deceit, the remaining 49% being either misled or wrong. Out of the 30 respondents who did not spot the biased text, 17 claimed to have read about the topic before taking the test. Similarly, out of 51 respondents who managed to identify the fabricated text, 25 of them claimed they had read about visual triggers and eating disorders beforehand. In this case, previous knowledge was not the main tool respondents used to choose the biased text. Instead, most of the respondents used intertextual and pragmatic strategies (thus, cognitive means) to identify deceit. In this light, out of the 33 respondents who claimed that they knew nothing about the topic, only 27% were misled. Hence, it could be argued that the combination of deceptive cues in Fabricated text 4 is not effective in raising perceived validity and reliability standards (See Tables 1, 2 and 3).

The results of Set 5 are very interesting from an academic point of view, especially the fact that only 48% of the participants were able to spot deceit. Text B was crafted in an effort to make it noticeably biased, employing a number of techniques, namely, Argument from Authority, distorted empirical data, heteroglossia, negative evaluations and explicit references to political forces (See Tables 1, 2 and 3). The results revealed that 70% of the respondents claimed to have read about gender pay gap -19% of them even claiming expertise- yet 52% of the respondents were not able to identify the

fabricated text. Therefore, the results of this set clearly challenge our first hypothesis: knowledge prevents deception. Thus, what could be the rationale behind these results?

Firstly, it is clear that some topics are more politicised than others. Although feminism is highly heterogeneous, and has evolved tremendously down the years, the general public still associates feminism and subsequent related issues with left-wing narratives. Similarly, the approach to feminism also varies according to the different sections within the left-wing spectrum.

In the last few years, some political parties in Spain have adopted very specific positions with regard to feminism and the different policies that could be applied to improve the situation of women in Spain. Just like with any given topic, the successful spread of certain feminist messages can be attributed to the repetition of certain mantras, buzz words or catchy phrases. These statements can be found in multiple places, from ads in mass media, to well-known influencers' posts to institutional messages targeting the populace. These messages, however innocuous may seem, do not necessarily have to be true, and they permeate society in inescapable ways (Prior, 2021). Feminism is a very sensitive topic to consider, and polarisation has been more apparent in the last few years. As it also occurred with other previously-mentioned topics, feminism is now a sign of identity, and any constructive criticism of the rationale behind its theoretical pillars or its application in government policies tends to be refuted with sweeping dismissal, even when it comes from within the Feminist Movement (Rothermel, 2020).

Whether all the mottos and fixed-phrases that can be easily found in mainstream feminist speech are true and empirically reliable is out of the scope of the present dissertation. However, there was something particularly noticeable in our test that could prove that mottos sometimes overshadow facts. For example, Text A, retrieved from the European Commission official website, featured the following statements:

"The principle of equal pay is enshrined in the European Treaties (article 157 TFEU) since 1957."

And,

"The far largest part of the gender pay gap remains unexplained in the EU and cannot be linked to worker or workplace characteristics such as education, occupation, working time or economic activity"

On the other hand, Text B dismissed the fact that the principle of equal pay has been part of European regulations since 1957 by stating that *"(...) never-ending problem that does not seem to concern our current leaders and regulations"*.

Further, even though there are no straightforward, clear-cut elements that can inevitably account for gender pay gap and research is still being conducted to this day to shed some light on these differences, text B asserted that *"it can all be attributed to sexism in the workplace"*.

There is a popular tendency to use a reductive approach to sensitive issues, that is, to reduce the complexities of any issue to an oversimplified, sometimes binary perspective (*Dicto Simpliciten*, see Section 5.2). This happens generally as a way of dealing with complicated problems without effort and, particularly, issues that would require an in-depth analysis. In more politicised issues, this attitude can also be a symptom of a lack of genuine interest in engaging with the core elements of a given situation. Consequently, oversimplification and reductionism of complex phenomena could be interpreted as an expression of an already biased approach.

Thus, politicisation could explain the results obtained in Set 5. Out of the 19% of respondents who claimed expertise, 37% of them were wrong, and 21% were uncertain. It could be argued that the respondents who claimed expertise may have received their information from already biased sources, in some cases featuring the mottos and buzz words employed in the fabricated text of this set. Consequently, they would not recognise this text as biased or fabricated, since it would be in line with their previous knowledge on the matter.

The results of the previous set (Set 4, see Figure 4 and Table 9) revealed that some respondents who did not claim any previous knowledge on the matter may have resorted to their cognitive skills to identify deceit. This approach was successful in 48% of the cases, thus leading us to question the effectiveness of the deception cues involved. Similarly, the results of this set (Set 5) show that out of 30% of respondents who admitted to knowing nothing about gender pay gap before taking the test, only 40% of them were able to spot deceit. This decline could be due to two main issues in particular, namely, the potential effectiveness of the combination of deceptive cues involved; or the potential effectiveness of the mantras and buzzwords employed in the media when dealing with

gender pay gap, which respondents may have overheard and therefore can be slightly familiar with.

Hence, this study has shown that there is no statistical evidence that the variables previous knowledge and success in spotting deceit are dependent. Consequently, no direct correlation between these two variables can be confirmed. There are several facts that could explain these results. Firstly, the information that the respondents received may not have been meaningful and thorough enough, so readers may have not been informed in depth. Secondly, the information they may have come across or willingly read could have been biased, some of the respondents even falling in echo chambers and getting used to polarised and biased information. Thirdly, it is possible that some of the respondents were not able to translate their previous knowledge on the matter addressed in the task, potentially pointing to cognitive issues. Lastly, some respondents may have been ashamed to admit they knew very little about more than one or two topics, therefore claiming to have read about the rest of the topics. Furthermore, it is also possible that some respondents may have felt psychologically exhausted after taking the questionnaire not giving much thought to the answers provided.

The study has further revealed that the combination of Argument from Authority, Use of Empirical Data and Extra-Vocalisation Heteroglossia seems to have an impact on the perceived reliability of informative pieces. Although, on average, more than half of the respondents were able to identify the fabricated texts in each Set, the rest of the respondents were either wrong or uncertain, regardless of their previous knowledge. Thus, a purposeful use of these strategies could contribute to facilitate the spread of faulty content and covert political messages. Indeed, since previous knowledge may not be an infallible tool to beat deceit, readers should be instructed in other areas, such as linguistics. This will help readers identify different fallacies and deceptive cues.

8. Conclusions

The present dissertation targeted deception in speech, and the observable connections that it holds with Post-Truth and the emergence and influence of social media. The basic premise of the thesis was that individuals all over the world are being confronted with a deluge of questionable pieces of information, which has led to a

misinformation pandemic of unprecedented proportions. Knowledge is thought to be key in order to elevate critical thinking skills among individuals. Consequently, RQ1 aimed to determine the extent to which previous knowledge would make readers less prone to being deceived by biased pieces of news, anticipating the potential effect that Post-Truth could have on self-alleged previous knowledge. On the other hand, RQ2 further examined the impact that a certain combination of deceptive cues, namely, Argument from Authority, use of empirical data and extra-vocalisation heteroglossia, could have on young readers.

The results showed that some respondents with self-alleged previous knowledge on a given topic were deceived by the aforementioned combination of deceptive cues. These results could challenge the notion that knowledge is central to critical thinking, in so far knowledge may be a much more ambiguous and complex term than we had anticipated. Consequently, the study showed that self-appraised previous knowledge does not shield young readers against deceit. One of the main tokens of the Post-Truth era is that attention is diverted from the logic and empirical nature of facts, and is in turn directed to a new paradigm built upon narrative truths. In this light, the dissertation covered the notions of cognitive and confirmation bias, which are inevitably linked to deceit. Self-awareness is key to understanding our own approach to information, as our own susceptibility to accept claims that confirm our pre-existing beliefs will make us more vulnerable to deceit.

The study further revealed that the combination of three linguistic cues (See section 5.2) did lead to deception, thus, there was a correlation between the use of these cues and the perceived validity standards of informative and argumentative pieces of news.

Although the study has shed some light on the influence of Post-Truth in modern communication, it goes without saying that it has some limitations. Firstly, the fact that the study was conducted in advanced English meant that only a very concrete part of the population could participate in it. Furthermore, the study did not contemplate demographic questions. However, it would have been very interesting to see how the different age groups performed in different topics, and whether women and men performed differently in more sensitive topics, such as the gender pay gap. It would also

be interesting to collect the political leanings of the participants. In addition, the questionnaire was conducted online, most of the respondents employing their smartphones. This may have not been particularly convenient for questionnaires of this nature, thus, a paperback format would have been more comfortable for the respondents. Lastly, the second part of the questionnaire only included three options, namely, I knew nothing, I had read about it and I know quite a lot about it. The answer to that question depends on an entirely subjective auto-appraisal. Furthermore, the options are not equally weighted: the second answer can cover a much larger range of the population than the other two. The problem with this is that someone who genuinely knows a lot could have provided the same answer as someone who had a more superficial familiarity with the issue.

This study could serve as a starting point, and there are numerous ways in which it could be taken a step further. Firstly, by considering demographics, many more variables could be analysed to understand the cognitive processes that different groups undergo when trying to identify deceit. Secondly, the deceptive cues involved in the fabricated texts could be modified, in an effort to create a comprehensive panel of the different strategies that biased writers could use to propagate their political agendas. Thirdly, it would be interesting to see whether respondents are equally critical with oral speech (TV debates and news, YouTube videos, Instagram posts…) as they are with written pieces. In addition, in order to know the extent to which the use of English could have distorted the body of results, the questionnaire could be articulated in Spanish employing the same variables. Lastly, further research should contemplate psychological variables so as to examine whether impulsivity and dichotomous thinking influence confirmation bias, and, by extension, make readers more vulnerable to deceit.

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APPENDIX I

Text A

Dmitro Kuleba, Ukranian Minister of Foreign Affairs, has just confirmed Russia's invasion in Ukraine. Experts believe that the reason behind this invasion is the threat Ukraine poses to modern Russia, especially in terms of oil and gas trading, together with extremist ideas. It is clear that Russian President V. Putin will try to justify this invasion as a quest against Ukraine's fascist regime. Airports and military headquarters were hit first. According to experts on international affairs, Russian tanks and troops will be rolling into Ukraine from the North, East and South aided by Belarus forces, who have been loyal allies for the past sixty years. In light of these events, it is about time Europe started thinking about its rather austere military expenses.

Text B

Russian troops are advancing on Ukraine's capital from several directions after Russia's leader ordered the invasion. Airports and military headquarters were hit first, near cities across Ukraine, then tanks and troops rolled into Ukraine from the north, east and south - from Russia and its ally Belarus. President Putin has frequently accused Ukraine of being taken over by extremists, ever since its pro-Russian president, Viktor Yanukovych, was ousted in 2014 after months of protests against his rule. It is unlikely to see NATO troops advancing on Ukrainian territory in the foreseeable future. This situation has made society reflect on the apparent fragility of western welfare.

- ○ A is real, B is fabricated
- ○ A is fabricated, B is real
- ○ I don't know

Text A

After extensive research, it has been observed that patients with COVID-19 can suffer complications such as pneumonia and, in the most severe cases, acute respiratory distress. Panagis Galiatsasos, (M.H.S) is an expert on lung disease at John Hopkins Bayview, and argues that, among the most common complications of COVID-19, sepsis and other critical inflammatory conditions can be found. He further states that the prolonged use of masks in closed spaces as a result of COVID-19 indoors regulations can worsen these conditions, for the air our lungs receive is not "high-quality". As such, he advocates for the immediate removal of masks indoors in order to prevent further complications related to SARS-CoV-2.

Text B

Panagis Galiatsatos, M.H.S., is an expert on lung disease at Johns Hopkins Bayview Medical Center and sees patients with COVID-19. COVID-19 can cause lung complications such as pneumonia and, in the most severe cases, acute respiratory distress syndrome, or ARDS. Sepsis, another possible complication of COVID-19, can also cause lasting harm to the lungs and other organs.

"As we have learned more about SARS-CoV-2 and resulting COVID-19, we have discovered that in severe COVID-19, a significant pro-inflammatory condition can result in several critical diseases, complications and syndromes," Galiatsatos says.

- ○ A is real, B is fabricated
- ○ A is fabricated, B is real
- ○ I don't know

Text A

The number of people cutting down on meat and dairy, or cutting these foods from their diets entirely, has been rising over the last decade. The number of vegans in the UK, for example, quadrupled between 2006 and 2018, according to research by The Vegan Society. This could be due to a number of reasons, although more and more Brits are starting to be aware of the implications that following a green diet can have on our planet.

One common motivation for shunning steak and stilton and going vegan is the promised health benefits. The vegan diet is generally considered to be higher in fibre and lower in cholesterol, protein, calcium and salt than an omnivorous diet – but there are still misconceptions and concerns around cutting meat, fish, eggs and dairy completely from our diets.

One common concern is whether a vegan diet provides enough vitamin B12. B12 helps prevent nerve damage, and is found in meat, fish, eggs and dairy, but not in fruit or vegetables. It's recommended that adults consume 1.5 micrograms of the vitamin per day.

"A B12 deficiency can lead to neurological symptoms such as numbness, and it's irreversible if the deficiency is present for too long," says Janet Cade, of the Nutritional Epidemiology Group, School of Food Science and Nutrition.

Text B

The number of people cutting down on meat and dairy, or cutting these foods from their diets entirely, has been rising over the last decade, the number of Vegans in the UK having quadrupled between 2006 and 2018, according to research by The Vegan Society.

Vegan diets broadly refer to the ones that exclude any food that comes from animals, including eggs, dairy, meat, fish, and even honey. Some people take a vegan diet even further seeking a greener lifestyle, but we all know the little impact individual actions can have on the environment.

Vegans eat vegetables, fruits, and whole grains, among others. However, it is believed that this diet runs short on essential nutrients, including vitamin B12 and a number of proteins.

"A B12 deficiency can lead to neurological symptoms such as numbness, and it's irreversible if the deficiency is present for too long," says Janet Cade, of the Nutritional Epidemiology Group, School of Food Science and Nutrition.

So, it is unlikely to see the vegan diet hailed as the healthiest, since it does not exclude a lot of processed foods, sugar, or gluten, and sometimes includes the presence of fake meats which are highly processed.

- ◯ A is real, B is fabricated
- ◯ A is fabricated, B is real
- ◯ I don't know

Text A

Policies aimed at removing sweets and crisps from checkouts could lead to a dramatic reduction in the amount of unhealthy food purchased to eat 'on the go' and a significant reduction in that purchased to take home, suggests new research led by the University of Cambridge.

The study, published in the journal PLOS Medicine, found that 17% fewer small packages of sugary confectionary, chocolate and potato crisps were bought and taken home from supermarkets immediately after introducing a checkout food policy. Even more dramatically, 76% fewer purchases were bought and eaten 'on-the-go' from supermarkets with checkout food policies compared to those without.

Text B

Darshan Jhala (1965-) is an expert on eating disorders and affective conditions, and an active collaborator in well-known peer-reviewed journals such as the International Journal of Clinical and Health Psychology and Frontiers in Psychology. Her latest works dwell on the necessity of removing fast food from checkouts, for their impact on the anxiety levels among individuals with eating disorders should not be overlooked (more than 76% of respondents with chronic eating disorders claim to feel triggered every time they proceed to checkout).

The author and other colleagues express their concern from a number of points of view, emphasizing the critical situation of teenagers and youngsters alike who suffer from anxiety crises when confronted with appetizing snacks on their way out of the supermarket. In her words, “it can all be narrowed down to a matter of solidarity and respect towards those who suffer tremendously from food addiction and other related conditions”.

- ○ A is real, B is fabricated
- ○ A is fabricated, B is real
- ○ I don't know

Text A

The gender pay gap in the EU stands at 14.1% and has only changed minimally over the last decade. It means that women earn 14.1% on average less per hour than men.

The gender pay gap measures a broader concept than pay discrimination and comprehends a large number of inequalities women face in access to work, progression and rewards, namely Sectoral Segregation (overrepresentation of women in relatively low-paying sectors, such as care, health and education), Unequal share of paid and unpaid work, The Glass Ceiling (The position in the hierarchy influences the level of pay: less than 8% of top companies' CEOs are women) and Pay Discrimination, since, in some cases, women earn less than men for doing equal work in violation of the principle of equal pay enshrined in the European Treaties since 1957.

The far largest part of the gender pay gap remains unexplained in the EU, and cannot be linked to worker or workplace characteristics such as education, occupation, working time or economic activity the person works for. More transparency in pay would help uncover unjustified gender-based pay differences for equal work or work of equal value and help victims of pay discrimination to seek redress and enforce their equal pay right.

Text B

The gender pay gap in the EU stands at a whopping 14.1% and has only changed minimally over the last decade, which means that women earn 14.1% on average less per hour than men.

The gender wage gap refers to the historical difference in earnings between women and men. This difference can be explained from a number of points of view, and the more conservative voices will try to point to a myriad of factors to account for this phenomenon, being oblivious to the fact that it can all be attributed to sexism in the workplace. Research has revealed that the main reasons behind this prevalent wage gap include Sectoral Segregation, Unequal share of paid and unpaid work, The Glass Ceiling and Pay Discrimination, all of which being obviously linked to insidious patterns of patriarchal discrimination.

Not surprisingly, people living intersectional realities -such as impaired and/or immigrant women – also experience the compounding negative effects of multiple biases on their earnings. It has been proved that almost all female workers have suffered some sort of discrimination in the workplace at some point, but earnings are perhaps the most visible element of a seemingly never-ending problem that does not seem to concern our current leaders and regulations.

SECTION 2

Thank you for taking this questionnaire. Now I'd like you to tell me whether you were familiar with the aforementioned topics before taking this test:

SET 1: Ukraine and Russia *

- ◯ I knew nothing
- ◯ I had read about it
- ◯ I know quite a lot about it

SET 2: COVID-19: lung disease and masks *

- ◯ I knew nothing
- ◯ I had read something about it
- ◯ I know quite a lot about it

SET 3: Veganism *

- ◯ I knew nothing
- ◯ I had read something about it
- ◯ I know quite a lot about it

SET 4: Eating disorders and visual triggers in supermarkets *

- ○ I knew nothing
- ○ I had read something about it
- ○ I know quite a lot about it

SET 5: Gender Pay Gap *

- ○ I knew nothing
- ○ I had read something about it
- ○ I know quite a lot about it