Chapter 7
The Argumentative Potential of Doubt: From Legitimate Concerns to Conspiracy Theories About COVID-19 Vaccines

Dima Mohammed and Maria Grazia Rossi

Abstract Doubt is a double-edge sword. On the one hand, uncertainty is essential for epistemic progress, and yet, doubt can also make us vulnerable to deception, confused to the point of no longer knowing what is true. What distinguishes a doubt that is epistemologically beneficial from one which is deceptive, or even manufactured in the context of a conspiracy theory? In this chapter, we explore doubt, its role, and the way it is being handled in the context of the public controversy about the COVID-19 vaccine. We approach conspiracy theories as argumentative discourses and reconstruct the generic structure of a conspiracy theory macro argument. Through the structure, we look into the discourse of the twelve prominent anti-vaxxers known as the "Disinformation Dozen", focusing on the argumentative potential that doubt can have in the public controversy about the COVID-19 vaccine. We suggest to distinguish ambivalence from scepticism and denialism as three argumentative potentials that a motivated doubt can have. We argue that ambivalent doubt ought to be acknowledged, addressed and incorporated into the public health narrative, in order to avoid that an unnecessarily broad interpretation of conspiracy theory dominates the public debate and leaves an uncertain public a prey to it.

Keywords Argumentative potential · COVID-19 vaccine · Conspiracy theories · Public controversies

> If a man, holding a belief which he was taught in childhood or persuaded of afterwards, keeps down and pushes away any doubts which arise about it in his mind, purposely avoids the reading of books and the company of men that call into question or discuss it, and regards as impious those questions which cannot easily be asked without disturbing it–the life of that man is one long sin against mankind. (Clifford 1877, p. 5).

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7.1 Introduction

In a recent study of the spread of anti-vaccine information on Facebook, researchers from George Washington University leave us with a distressing warning: the data we have today predicts that by the end of the decade, anti-vax viewpoints will become predominant (Johnson et al., 2020). The prediction is based on an analysis of the map of contention surrounding vaccines on the popular social platform. The map reveals highly dynamic interconnected clusters of anti-vaxxers, highly entangled with undecided clusters, while pro-vaccines clusters are rather peripheral. Beyond the alarming prediction, the study mirrors an equally alarming reality characterised by an explosive growth in anti-vaccination views and movements. While in principle, anti-vaccination views may be part of a healthy public debate about vaccines and public health, the growing spread of anti-vax emerges in the context of the proliferation of conspiracy theories sustained by a propagation of misinformation. As philosopher Lynch (2016) best captures it, the use of social media to spread misinformation is a "*giant shell game*": a golden deception opportunity for propagandists. As he argues, the danger of the increasing spread of misinformation is not just that it might lead people to believe in falsehood. While that is surely disturbing, what is equally perilous is that even if you are saved from false beliefs, misinformation can at least "get you confused enough so that you don't know what is true" (ibid). It is this power of 'manufacturing doubt' (Oreskes & Conway, 2010), which disinformation exercises even on the critical mind, that is most dangerous.

Indeed, doubt is a double-edge sword. On the one hand, uncertainty is an essential component in epistemic progress, and yet, doubt can also make us vulnerable to deception, confused to the point of no longer knowing what is true. Consider the difference between a scientist who designs a new experiment in order to verify an alternative hypothesis he suspects might be at play, and a politician who argues that energy policies do not need to change as long as there is still doubt that fossil fuel consumption is responsible for climate change. Or compare a patient's doubt about the efficacy of vaccines in stopping transmission expressed in a medical consultation, or an epidemiologist's suspicion about a potential link between a vaccine and blood clots expressed in a scientific meeting, to the doubt about the efficacy of vaccines expressed by a medical expert in a media interview. While in some cases it is rather clear that what is at stake is an expression of doubt that is benign or even epistemologically beneficiary, in other cases, the doubt seems to be rather tricky or even a typical example of a doubt manufactured in the context of a conspiracy theory.[1]

In this chapter, we explore doubt, its role, and the way it is being handled in the context of the public controversy about the COVID-19 vaccine. We examine anti-vaccine conspiracy theories from an argumentative perspective and analyse the argumentative potential that doubt can have in this public health controversy. Our

[1] As a precautionary note, we would like to make it clear that the discussion of the public controversy about the COVID-19 vaccine is not intended to establish the validity of medical facts. Despite the importance of such endeavour, our focus in this chapter is rather on the functioning of doubts typical of the COVID-19 vaccine controversy in the context of conspiracy theory.

analysis shows the importance of distinguishing between the different argumentative potentials a certain doubt can have. That, we argue, is necessary for an adequate response to the growing spread of conspiracy theories.

7.2 Conspiracy Theories and the Argumentative Potential of Doubt

Broadly understood, a conspiracy theory (hereafter CT) is an alleged explanation of significant social and political events as the outcome of secret plots by two or more powerful actors (Aaronovitch, 2010; Byford, 2011; Coady, 2006; Dentith & Orr, 2018; Keeley, 2019). Following Oswald (2016, pp. 3–4), we examine conspiracy theories as argumentative objects: as communicative events that are embedded in controversy and disagreement, which intend to persuade a public of the conspiracy explanation by offering arguments in the premise-conclusion articulation. As argumentative objects, CTs have a common "argumentative profile": they make use of "source-related fallacies (…), hasty generalisations, arguments from analogy, inductive and abductive arguments, ad ignorantiam, and shifts in the burden of proof" (Oswald, 2016, p. 14). Furthermore, post hoc ergo propter hoc arguments are also very common, with anecdotal evidence and false correlations presented as scientific facts (Stolle et al., 2020). Argumentatively, CTs are "*refutational* narratives" (Byford, 2011) constructed in opposition to an official account of events rather than in justification of the conspiratorial account proposed (Oswald, 2016; Oswald & Herman, 2016; Wood & Douglas, 2013). Typically, CT's refutation is not much more than "the rhetoric of just asking questions" (Byford, 2011, pp. 88–93). Proponents of CTs pose questions to cast doubt on the official story (hereafter OS), focusing overly on data which the OS cannot account for and interpret the absence of answers as a cover up, a conspiracy to hide the truth (ibid; see also Stolle et al., 2020). Following Oswald's characterisation of the argumentative profile of CTs, in this chapter, we reconstruct the generic structure of a conspiracy theory macro argument. The reconstruction is based on a qualitative meta-analysis of conspiracy theories. In it, we propose a generic structure of the reasoning that links the different premises and argument types identified in the literature on CTs (e.g. Byford, 2011; Hofstadter, 1964; Jolley & Douglas, 2014; Lewandowsky et al., 2013; Nisbet, 2009; Oswald, 2016; Stolle et al., 2020; Zagarella & Annoni, 2019).

At the macro level, the explanation of social and political events as the outcome of secret plots by two or more powerful actors (Aaronovitch, 2010; Byford, 2011; Coady, 2006; Dentith & Orr, 2018; Keeley, 2019) may be considered the ultimate conclusion of any given CT. As such, CTs can be characterised as discourses advancing the claim that a certain official story x is the sinister work of powerful individuals and groups 'conspiring' against the general public. Challenging the official account (Oswald, 2016; Oswald & Herman, 2016; Wood & Douglas, 2013) is the main argument advanced in support of such a claim. Obviously, the justificatory

power of this argument is problematic in a way that reflects a central problem of CTs. At best, the justificatory power at work is an argumentum ad ignorantiam: even if indeed the OS at stake were not credible, it would be just a too "big leap from the undeniable to the unbelievable" (Hofstadter, 1964, p. 35) to conclude that this is evidence for a conspiracy. The "big leap", which we take to be a central element of CTs, turns the CT argument inherently fallacious. In supporting the argument that the OS is not credible, proponents of CTs present evidence (real and fake) that goes against the OS and attack the credibility of the sources—the supposed political and social elites which includes authorities and experts representing the OS. Mistrust of official sources has indeed been a crucial element in the success of any conspiracy theory (Jolley & Douglas, 2014; Lewandowsky et al., 2013; Nisbet, 2009; Oswald, 2016).

Unlike the main standpoint, (1) *An official story x is the sinister work of powerful individuals and groups 'conspiring' against the general public*, which is often left implicit, the main premise (1.1) *The official story is not credible* is often expressed explicitly. Nevertheless, the great bulk of CT explicit discourse supports premises 1.1.1 and 1.1.2. In arguing that *The 'official sources' of OS x cannot be trusted* (1.1.1), CT rely on 'source-related arguments' (Oswald, 2016), typical examples allege that the proponents of OS x have vested interests (among other types of ad hominem arguments). In supporting that *There is evidence against what the official story says* (1.1.2), CT advocates present examples (real and fake) that contradict the OS. Interestingly, the more examples we have to support 1.1.2, the more 1.1.1 is supported too. In other words, 1.1.2 supports 1.1.1 too.

While we reconstruct the argument underlying CTs, it is crucial to keep in mind that in any given CT, there is no single homogeneous unified argument made explicitly by a single CT proponent. Instead, conspiracy theories are made up of various argument lines, articulated more or less explicitly by different individuals and groups. The individuals and groups may be in conflict one with the other and may vary in the degree of doubt they cast on the official story, from moderate scepticism all the way to denialism (Capstick & Pidgeon, 2014; Dunlap, 2013; Grimes, 2021; Haltinner & Sarathchandra, 2021; Pierre, 2020). Nevertheless, the diverse contributions converge into a discourse that defends a conspiracy explanation of a certain significant event. The reconstruction we propose is meant as a generic structure that represents exactly that: the CT argument as a discourse—an argument that is made up by the various contributions of different arguers advanced at different occasions. As we propose such a structure, we make no claims about the intentions of groups and individuals that contribute to the CT discourse. Not every arguer who expresses a certain CT premise is necessarily intending to convey the conclusion of the CT argument. Nevertheless, even without that intention on behalf of the arguer, the premise would still contribute to the CT discourse by invoking the conclusions associated with it. It is important to distinguish the intention of the arguer from the contribution the argument can make. Of course, both are important, and obviously the two can overlap, but the argumentative potential an argument has is not restricted to the justificatory force intended by the arguer. Distinguishing between the two is important in order to

account for the way public arguments work without over-attributing commitments to arguers.

Generally speaking, the argumentative potential refers to the possible argumentative inferences a certain discursive choice can activate beyond what is explicitly stated. Think of the affirmation "my body, my rule". A common argumentative potential associated with the statement is opposing the control and criminalization of sexuality and reproduction. The affirmation has been associated with the defense of the position in such a way that the two have formed a premise-conclusion pair, an inference, that is publicly recognisable. Whenever the affirmation is made, the position is invoked, even if it is not explicitly articulated. One way of capturing the argumentative potential is to identify premise-conclusion pairs that have become publicly recognizable, and in the absence of evidence to the opposite, affirming (x) may be interpreted as also claiming (y), on the basis that x has become publicly associated with the justification of y (Mohammed, 2019a).[2] The starting point here is an understanding that public arguments do not start from void, nor do they happen in isolation: every time an argument is made, it builds on already existing (lines of) arguments in which some premise-conclusion pairs become recognisable. While arguers may not be held committed to the argumentative potential of their premises beyond doubt, the commitment is rather presumptive (ibid.), in the discourse, premises have the potential of invoking the conclusions which are typically associated with them. The point here is not making claims about the intention of the arguer, but rather about the interpretation of the argument. This is crucial in public arguments, where what matters is not just what meaning a speaker intends to convey, but also what meaning is conveyed, on the basis of the already recognised premise-conclusion pairs and independent of the intention of the arguer.[3]

That discursive choices acquire argumentative potentials beyond what is explicitly said is in line with the idea that there is an argumentative aspect inherent in every form of language (Anscombre & Ducrot, 1983) as well as with the understanding that intertextuality and interdiscursivity are two fundamental aspects of discourse (Reisigl & Wodak, 2016; Wodak, 2009).[4] Indeed, in today's networked public sphere

[2] The most basic argumentative potential might be found in enthymemes where the conclusion is unexpressed. But the argumentative potential is not necessarily always as obvious nor necessarily intended as the implicit conclusion of a typical enthymeme is. See Mohammed (2019b) for more on this.

[3] The activation of an unexpressed inference might be achieved by a certain choice of proposition, as well as by the word choice and formulations used in the propositions. A skilled arguer would carefully make her discursive choices in order to convey intended messages as well as to avoid conveying unintended ones, i.e. to activate desired argumentative potentials as well as to curb undesired ones (Mohammed, 2019a, 2019b). Paying attention to the argumentative potential of discursive choices is crucial for the analysis and evaluation of arguments, especially arguments about socio-political issues made publicly. It is beneficial in order to capture the strategic shape of arguments (Mohammed, 2019a), as well as to explain how public misunderstandings arise and polarisation in public controversies deepens (Mohammed, 2019b).

[4] Furthermore, Reisigl and Wodak (2016) consider that that discourse is characterised by (a) macro-topic-relatedness, (b) pluri-perspectivity related to various voices in a specific social field, and (c) argumentativity.

(Benkler, 2006; Kaiser et al., 2018; Pfister, 2014), the argumentative potential is hardly ever confined to a single text or even a discourse: at any point in time, there are countless interrelated controversies being fed with new premises and conclusions as well as by the new inferences that connect them. Arguments emerge to manage the disagreement (Jackson & Jacobs, 1980; Jacobs & Jackson, 1989) as part of a complex network where distinct lines in relation to different issues crisscross and overlap (Aakhus, 2002; Lewiński & Mohammed, 2015; Mohammed, 2019b). In such a complex network, where the boundaries are fluid and dynamic, the argumentative potential proliferates making it a tricky task to curb undesired potentials and activate only desired ones.[5]

In the next sections, we will examine the argumentative potential of doubt in the public arguments about COVID-19 vaccine. In particular, we examine how doubt functions in the context of conspiracy theories. We examine CT discourse through the generic argumentative structure sketched above. The structure allows us to see how the different parts of CT discourse hang together, to highlight what is common between the different CTs and to explain how they are interrelated, which is crucial for examining the argumentative potential of doubt. For example, the structure allows us to show how it is that "evidence for one conspiracy theory becomes evidence for all of them" (Byford, 2011); it shows how easily it is for a premise that discredits an 'official source' in a new CT to become just another piece of evidence for mistrusting the Official Story in general. Finally, as the analysis we conduct in the next sections will show, the reconstruction of the generic CT argument allows us to shed light on the manufacturing of doubt typical of CT discourse.

7.3 COVID-19 Vaccine: The Conspiracy Theory

Conspiracy theories about the COVID-19 pandemic emerged as soon as the pandemic itself became a global reality (Ellis, 2020). In these theories, which have been typically accompanied by disinformation campaigns, one may identify a few common themes (Grimes, 2021, pp. 3–4). The most general of these themes is the claim that COVID-19 is an outright hoax, or alternatively that it has been deliberately engineered, in both cases in order to suppress freedoms on a global scale.[6] Other main conspiratorial themes advance that COVID-19 is a pretext for a mass vaccination programme in which philanthropist Bill Gates is going to microchip people to spy on them and eventually control them, or that the pandemic has been caused by 5G electromagnetic radiations (ibid.). These and other themes have been circulated

[5] See Mohammed (2019b) for an example of the complexity of managing the argumentative potential in a public controversy.

[6] Interestingly, "While such narratives seem mutually opposed, they are frequently held in tandem by a cohort of believers despite mutual exclusivity—a not infrequent situation with conspiratorial thinking" (Grimes, 2021, p. 3).

widely by people from all walks of life including by "leaders and people in positions of trust and authority" (Douglas, 2021, p. 272). The role celebrities and public figures play in creating and feeding CTs cannot be exaggerated, especially considering social media. In late March 2021, a study by the Center for Countering Digital Hate (CCDH) and Anti-Vax Watch revealed that up to two thirds of anti-vaccine content circulating on major social media networking sites can be traced back to 12 individuals and their organizations. The twelve anti-vaxxers have since then been dubbed the "Disinformation Dozen" (CCDH, 2021).[7]

Vaccine conspiracy theories are by no means a new phenomenon. Since the first claims were made in the 1990s about a link between the MMR vaccine and autism, the anti-vax movement has never disappeared. It was only to be expected that as soon as talk of COVID-19 vaccine began, a new conspiracy theory emerged. Looking at the history of the modern anti-vax movement, Stolle et al. (2020) identify common argumentative patterns of anti-vaccination proponents. Medical mistrust and other forms of anti-system arguments (e.g., medicine as a profit-making enterprise); fear of adverse consequences, caused in the case of the MMR by the association with autism spectrum disorder, as well as of other neurological disorders, and finally fear of harmful ingredients contained by vaccines (ibid.). Many of the premises remained very similar when the COVID-19 vaccine CT emerged. In particular fears of side effects, and the chronic mistrust in medical authorities (Rief, 2021; Verger & Dubé, 2020). Just like other CTs, the COVID-19 vaccine conspiracy is characterised by central tenets which are reasonably consistent, and yet which manifest themselves in a diversity of narratives, worldviews and ideologies, and express varying degrees of doubt about the official story. From the libertarian gun rights advocates in the US, to leftist big pharma sceptics in France and anti-lockdown activists both on the far left and the far right in Germany, anti-vaccine conspiracy theories allege that we have been lied to about the pandemic: about its origin, magnitude but most importantly, about the vaccine story we are being told. The different anti-vaccine conspiracy theory narratives converge, without necessarily agreeing on the nature of the conspiracy, nor on the extent to which the conspiracy is the work of a sinister powerful elite that works against the general public. Furthermore, the COVID-19 vaccine CT is intertwined with other COVID-19 CTs (e.g., lockdown, masks … etc.) as well as other CTs in general (e.g., QAnon). As the analysis in the next section will show, this openness is an important power house for conspiracy theories.

In order to discredit the official story about the COVID-19 vaccine, conspiracy theories manufacture doubt in relation to five main areas. First, doubt is raised about the safety of the vaccine as a cornerstone of the vaccine OS: Is the vaccine really safe or does it cause serious dangerous side-effects? Doubt about vaccine safety is raised by focusing on the occurrence of side effects as well as by alleging that the clinical trials to produce the COVID-19 vaccine have been rushed in a way that compromises its safety. Second, doubt is raised about the effectiveness of the

[7] The "Disinformation Dozen" is made up of Ty and Charlene Bollinger, Robert F. Kennedy Jr., Joseph Mercola, Sherri Tenpenny, Rizza Islam, Rashid Buttar, Erin Elizabeth, Sayer Ji, Kelly Brogan, Christiane Northrup, Ben Tapper, and Kevin Jenkins.

vaccine: Is the vaccine really as effective in combatting the pandemic as it is claimed to be? Third, vaccine CT questions the threat of COVID-19 as alleged by the official story: Is COVID-19 as dangerous as it is being presented by medical authorities and experts? Fourthly, doubt is also raised in relation to the composition of the vaccine: is the vaccine ethically produced or does it contain harmful substances? This doubt links the vaccine CT to the QAnon CT which alleges that vaccines are bioweapons developed by elite paedophile networks. Finally, doubt is raised about trust in the official medical experts and authorities, the proponents of the official story: can we really trust the profit-making big pharma enterprises? Can we trust the medical authorities, for example in view of their history of unethical treatments of minorities and people of colour? Or yet more generally, can we trust that the 'system' is really trying to save us? Here too, the overlap with other CTs such as QAnon is obvious.

In what follows, we look into each of these lines of doubt. We spell out their argumentative role in the CT and give examples of their instantiations in its discourse, particularly in the discourse of the Disinformation Dozen.

(a) Is the vaccine really safe as claimed?

In the COVID-19 vaccine CT, doubt about vaccine safety is manufactured to discredit the OS by supporting the CT premise 1.1.2 (in Fig. 7.1), namely that there is evidence against what the COVID-19 OS says. Anecdotal accounts of people dying after they get vaccinated are the most common examples. Here is one, presented by Robert F. Kennedy, Jr., the head of the Children's Health Defense and probably the most visible and vocal member of the Disinformation Dozen. It is a piece of news that appears under the Big pharma news section on Kennedy's organisation's page. The news reads as follows:

(1) 58-Year-Old Woman Dies Hours After Getting First Dose of Pfizer Vaccine. Doctors said Drene Keyes, whose death is under investigation, died of flash

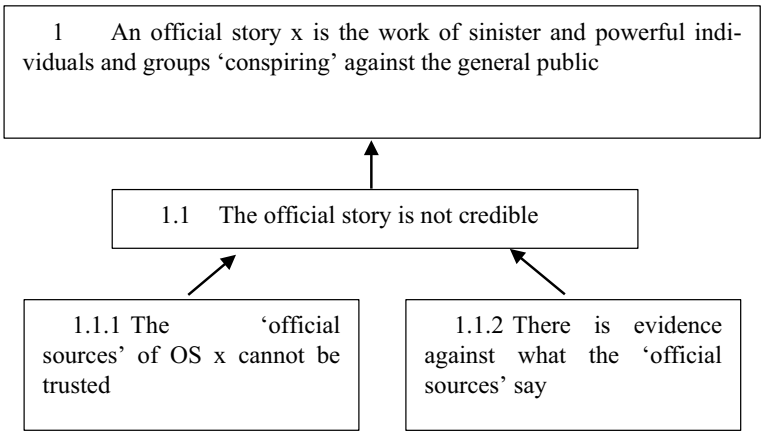

Fig. 7.1 Generic structure of a conspiracy theory argument

> pulmonary edema likely caused by anaphylaxis, a life-threatening allergic reaction, which some people have experienced after receiving the COVID vaccine (Children's Health Defense, 2021)

Leaving aside the factual accuracy of the news, it is interesting that the case, which is presented as evidence that the vaccine can kill you, can also cast doubt on what the OS says. The news has a clear potential of feeding mistrust in the official medical institution as well.

(b) Is the vaccine really as effective as claimed?

Anti-vaccine CTs employ the doubt about vaccine effectiveness as another line of evidence against what the COVID-19 OS says (CT premise 1.1.2 in Fig. 7.1). This is a line of argument that has been pursued by Joseph Mercola, the American alternative medicine proponent and co-author of the book *The Truth About COVID-19* (Mercola & Cummins, 2021). In the book, the authors do not understate their claims:

(2) Effectiveness of the vaccines has been wildly exaggerated and major safety questions have gone unanswered (Chelsea Green Publishing, 2021).

Here too, the formulation of the affirmation activates not just the argumentative potential to undermine the accuracy of the OS, but also that of undermining the trust in the official sources.

(c))Is the COVID-19 disease really the threat it is presented to be?

The seriousness of the COVID-19 disease is at the core of the OS about the pandemic. Therefore, raising doubt about it has the obvious argumentative potential of undermining the OS (CT premise 1.1.2 in Fig. 7.1). Interestingly, many national medical groups have also been expressing this doubt. For example, in a video shared at the World Doctors Alliance, Dutch general practitioner Elke De Klerk says:

(3) We do not have a pandemic. COVID-19 is a normal flu virus (Newswise, 2020).

This is one of the doubts most propagated by public figures, starting with the Brazilian president Jair Bolsonaro who spoke of COVID-19 as a "little flu" but not ending with Donald Trump who has in September 2020 retweeted a message claiming "the true number of COVID-19 deaths in the United States was a small fraction of the official numbers".

(d) Is the vaccine ethically produced¿

In the context of CT, alleging information that casts doubt on the production of the vaccine fulfils the argumentative potential of lending direct support to the premise that *The proponents of the COVID-19 OS cannot be trusted* (CT premise 1.1.1 in Fig. 7.1). Consider the following example. Reporting on an interview with obstetrics and gynaecology physician Christiane Northrup, another one of the Disinformation Dozen, the NOQ Report website (Scheuer, 2020) tells us that:

(4) Dr. Northrup discussed the questionable composition of the vaccines being readied, and noted that they likely include fetal materials coming from babies aborted in China, as well as other materials that allow the tracking of individuals and their movements. Oddly, it seems that China sent the disease to the United States, and now it is making a profit from supplying materials from aborted babies for the coming vaccines.

Interestingly enough, NOQ Report is a news and opinion website that states as its mission the fighting of "fake news by the mainstream media" (Scheuer, 2020). It is simply in line with the website's "mission" to manufacture doubt in order to foster the conspiratorial potential associated with discrediting the sources associated with the OS.

(e) Are the official medical experts and authorities worthy of public trust?

Casting doubt on the trustworthiness of official sources, experts and medical authorities is one of the most powerful doubts manufactured by CTs. Undermining the trust in the official sources does not just play directly into discrediting the OS. It also lends support to the ultimate CT claim that the OS is the work of a group conspiring against the general public. It is therefore not surprising that this doubt is often expressed in combination with other doubts, such as in examples (i), (ii) and (iii) above. In the context of the COVID-19 vaccine, two paths to undermine trust have been popular: big pharma purportedly using immunization as a mere profit-making enterprise, and medical authorities accused of continuing a history of unethical treatments of minorities and people of colour. Of the Disinformation Dozen, social media influencer Rizza Islam has an Instagram account dedicated to fuelling mistrust in the medical authorities. In his "Not Another Tuskegee Experiment", the African American activist invokes the legacy of the abusive Tuskegee Study[8] to feed an already existing trust problem. The argumentative potential is rather clear, and yet, it surely does not harm the CT to repeat it. In a Facebook live-stream, Kevin Jenkins (CEO of the Urban Global Health Alliance and another member of the Disinformation Dozen) spoke to the Balck community about the COVID-19 vaccine:

(5) They are spending a trillion dollars to convince you that it's OK to kill yourselves (McGill Office for Science & Society, 2021).

Undermining an already shaky trust in medical authorities is a fast track towards supporting the ultimate claim of the COVID-19 vaccine CT. Moreover, it is an unignorable contribution in support of other CTs that would flourish every time trust is undermined in another official story.

Having seen how the different manufactured doubts typical of the COVID-19 vaccine controversy are employed in the context of conspiracy theory, in the next

[8] The Tuskegee Study of Untreated Syphilis in the Negro Male was conducted between 1932 and 1972 by the United States Public Health Service and the Centers for Disease Control and Prevention. The purpose of the study was to observe the natural history of untreated syphilis. To achieve it, black men with syphilis were left untreated to essentially see what would happen (Brawley, 1998; Centers for Disease Control and Prevention, 2021).

section, we will look more into how doubt about the vaccine functions beyond the CT discourse. We will analyse doubt about vaccine safety in general and discuss different argumentative potentials of this doubt. The discussion will explain how the same doubt can be considered a legitimate expression of ambivalence but may also be used as part of a more articulated sceptic position, or even as evidence for a conspiracy theory that casts doubt on an official story altogether.

7.4 Handling the Argumentative Potential: Doubt About the Safety of COVID-19 Vaccine

In general, doubt about vaccine safety is one of the main doubts expressed when considering the COVID-19 vaccine. Concerns about safety arose as early as talk about the vaccine began, especially given the speed in which COVID-19 vaccines were developed and approved compared to previous vaccines. As news was reporting the progress in developing the new vaccines, the public was being reminded that "The vaccine development process has typically taken a decade or longer" (Thompson, 2020). The impression was created that in order to respond to the urgency of developing a vaccine, the clinical trials phase was cut short which might eventually compromise the certainty about vaccine side-effects. The doubt about safety, in particular, concerns about serious side-effects, grew as the trials got repeatedly halted because of suspicions about side-effects. Eventually the trials resumed, and vaccines were approved. Nevertheless, doubt about safety re-emerged and grew yet stronger as a result of the repeated news about the occurrence of blood clots post vaccination, as well as the recurrent halt in administering the vaccine by the medical authorities (Wise, 2021).

Doubt about safety of vaccines is in principle legitimate. In general, this doubt is an integral part of the development of any vaccine: it is the doubt that underlies the clinical trials, and which guides the precautionary halt in both trials and the roll-out once there is suspicion that a certain vaccine is causing an unforeseen side-effect. In its lightest manifestation, the doubt is a form of incertitude about the possibility of side-effects that can compromise the safety of the new vaccine: clinical trials are designed for scientists to rule this doubt out and present a convincing case in support of the vaccine's safety. Yet, the doubt about side-effects can be stronger, for example, as it happened with the *Oxford-AstraZeneca* vaccine, it can be motivated by a repeated occurrence of blood clots post vaccination, or by a recurrent halt in administering the vaccine by the medical authorities (Wise, 2021). Although these may be legitimate reasons to cast doubt on the safety of a vaccine, such motivated doubt needs to be handled carefully (Wadman, 2020). Unless the *argumentative potential* of doubt is controlled, it is a slippery slope where doubt can slither quickly from natural ambivalence to legitimate scepticism all the way to conspiracy theory denialism. As the analysis below will show, what distinguishes between these three

are the different argumentative potentials that can be associated with the reason motivating the doubt.

Let us take the example of the doubt about the safety of the Oxford-AstraZeneca vaccine motivated by the fact that several people have died from unusual blood clots after getting the vaccine (EMA, 2021, April 7). The reason motivating the doubt, namely that *several people have died from unusual blood clots after getting the Oxford-AstraZenec vaccine*, has at least three argumentative potentials:

1. Ambivalence

Considering that *several people have died from unusual blood clots after getting the Oxford-AstraZeneca vaccine* may give rise to the minimum degree of doubt about the safety of the vaccine: ambivalence on whether or not the vaccine is safe, without necessarily leaning to any of the positions. From an argumentative perspective, expressing ambivalent doubt amounts to assuming the dialectical role of the antagonist in a non-mixed dispute (Van Eemeren & Grootendorst, 1992, pp. 16–22) concerning the standpoint challenged by the reason motivating the doubt. The position may be reconstructed as: *several people have died from unusual blood clots after getting the Oxford-AstraZeneca* therefore *I am not sure if the vaccine is safe or not*. In this case, what underlies the ambivalence is uncertainty about the causal link between the vaccine and the reported blood clots. In other words, even though the doubt is motivated by the possibility of such a link, the link itself is subject of doubt.[9] Ambivalent doubt is the type of doubt that gave rise to the precautionary measures taken by medical authorities in countries that halted vaccine roll-out until the causal link is investigated and doubt about the safety is ruled out.

On its bearer, ambivalent motivated doubt incurs no obligation apart from the willingness to give up the doubt if the reasons motivating the doubt get adequately addressed. On the proponents of the position challenged, the obligation is obviously higher: medical authorities, as well as the pharma, are expected to adequately respond to the ambivalent doubt by addressing its motivating reasons. Ambivalence is the minimum argumentative potential that a motivated doubt can have. It can be that it is all there is at stake in an argumentative situation, but more often than not, motivated doubt can activate higher argumentative potentials.

2. Scepticism

In addition to *ambivalence* about whether or not the *Oxford-AstraZeneca vaccine is safe*, the fact that *several people have died from unusual blood clots after getting the vaccine* can give rise to *vaccine safety scepticism*. Assuming that there is a causal link between the vaccine and the unusual blood clots, the motivated doubt acquires the potential to function as an argument against the position that the vaccine is safe. The position of sceptic doubt may be reconstructed as: *several people have died from*

[9] A relevant factor here might also be related to the definition of drug safety in general. Even if it is accepted that there is a causal link between the harm observed and the drug, how much risk is tolerated before a certain drug is no longer considered safe? Ambivalence can be the result of uncertainty about that, and misunderstanding can result from a mismatch about the definition of drug safety between communicators.

unusual blood clots after getting the vaccine therefore *I do not think that the vaccine is safe*. In argumentative terms, this amounts to assuming the dialectical role of the protagonist in a mixed dispute about the safety of the vaccine. A sceptic position about the safety of the Oxford-AstraZeneca vaccine incurs on its bearer an obligation that mirrors the obligation of the opponents of the vaccine safety thesis. Medical authorities and pharma ought to justify why the vaccine may still be considered safe despite the unusual blood clots, and vaccine safety sceptics ought to defend that in view of the unusual blood clots the vaccine may not be considered safe.

Scepticism is a medium range argumentative potential when it comes to doubt about vaccine safety. Scepticism goes further than ambivalence in that it assumes a position concerning vaccine safety while ambivalence does not, but just like in ambivalence, the argumentative potential of a sceptic doubt remains within the dispute over vaccine safety. While that is surely possible, doubt about vaccine safety may also have argumentative potential that extends beyond that dispute.

3. Denialism

An important far-reaching argumentative potential of the vaccine safety doubt is the one associated with anti-vax CT movements. As we have seen in the previous section, doubt about vaccine safety makes an important line in the vaccine conspiracy theory argument. Conspiracy theorists take advantage of every new case of serious vaccine side-effects, presenting it as yet another evidence against the *official story* which alleges that the vaccine is safe. Interpreted within the conspiracy theory argument, the doubt motivated by the occurrence of unusual blood clots can acquire the following CT denialist potential:

> Several people have died from unusual blood clots after getting the Oxford-AstraZeneca,
>
> This is (yet another) evidence that the vaccine is not safe,
>
> Therefore, the official story about the vaccine is not credible

The doubt motivated by possible serious side-effects has been used in its denialist potential over and over by vaccine conspiracy theories, i.e. as an argument to discredit the *official story* about vaccines altogether. What we have here is an inference, a premise-conclusion pair, which has become publicly recognisable: new evidence that the vaccine is not safe is a sign that the official story about the vaccine is not credible. The conclusion, namely that *the official story about the vaccine is not credible*, is hanging out there as a standing standpoint (Mohammed, 2019a) waiting for the premise to be expressed so that it may take effect. The denialist argumentative potential functions by virtue of this public inference, that is by virtue of the premise-conclusion pair being recognised and invokable. Whenever there is a new reason motivating the doubt about the vaccine safety, there is an argumentative potential for the doubt to take the denialist direction. Furthermore, another publicly recognizable inference at work here is the one that leads to the main CT claim: *The OS about the vaccine is not credible therefore The COVID-19 vaccine official story is the work of sinister and powerful individuals and groups 'conspiring' against the general public*. In both cases, the potential is there; whether it materialises or not depends on the way arguers interpret each other's arguments.

Obviously, the denialist potential is problematic. To start with, it is based on a flawed inference. At best, it is a hasty generalisation to discredit the official vaccine story altogether even if it were true that the vaccine is not safe (which in itself is the conclusion of another hasty generalisation). But that is not all. In the discourse of conspiracy theorists, flawed reasoning is typically combined with the spread of misinformation. False accounts of vaccine-related deaths as well as exaggerations of side-effects reports are circulated to sustain the false generalisation, which leads to growing levels of vaccine hesitancy, one of the main public health challenges in the context of the current COVID-19 pandemic (Pullan & Dey, 2021; Weintraub et al., 2021; World Health Organization, 2020).

Furthermore, what may be even more problematic than the flawed reasoning underlying the denialist argumentative potential is the way that potential can distort positions and unnecessarily polarise the public discussion. It is indeed a tricky task to know which argumentative potential is most adequate when an arguer expresses a motivated doubt. It is not always easy to know whether a speaker who reports that *Several people have died from unusual blood clots after getting the Oxford-AstraZeneca* is expressing ambivalence on whether the vaccine is safe or not, or if she is being rather sceptic that the vaccine is safe, or if she is even presenting the news as evidence that we cannot trust official authorities and their vaccine claims. Misunderstandings can happen if an arguer and their interlocutor interpret the doubt in terms of different argumentative potentials. Ideally, a competent arguer should be capable of curbing an argumentative potential that is undesired to her. The simplest way to do that is using a disclaimer: for example, an arguer who is aware that their ambivalence might be misunderstood as scepticism might choose to explicitly affirm that they are "not saying that the vaccine is not safe".[10] Nevertheless, in public controversies, arguers may not be always aware of a certain argumentative potential that can be ascribed to them, which eventually complicates the task of controlling how they are being interpreted (see examples in Mohammed, 2019a, 2019b). Furthermore, the task is even more difficult in a polarised context, characterised by conspiracy theories. The louder the conspiracy theories, the more present their public inferences are, and the more likely it is that the denialist argumentative potential is wrongly attributed to expressions of motivated doubt that are meant in non-denialist potentials. Indeed, in the public discussion about the COVID-19 vaccine, doubt has too often been misinterpreted as an expression of the denialist stance leaving people feeling misinterpreted and alienated (Douglas et al., 2019; Stolle et al., 2020).

In spite of the difficulty of identifying the argumentative potential at stake, medical experts and authorities, proponents of the vaccine safety thesis in general, are under the obligation of responding to doubt about their thesis. Ambivalent and sceptic doubt can disappear if evidence is provided. In response to the doubts motivated by post-vaccine blood clots, an effective answer has been provided by comparing the risk of blood clots post-vaccination with that associated with other medication

[10] Obviously, such a disclaimer might be interpreted as a case of a rhetorical apophasis. The arguers might watch out for that for it can backfire.

considered safe. For example, experts explained that the risk of clots with the Oxford-AstraZeneca vaccine is roughly 1:250,000, while the risk of clots for the contraceptive pill is 1:2000 (Mahase, 2021). The comparison would probably not remove a denialist doubt, but it is quite likely that it is effective in overcoming cases of ambivalent and even sceptic doubt. While non-denialist doubts can be overcome, doubts ignored are prone to getting hijacked by conspiracy theories who transform the neglect into yet another reason to discredit the official story and its proponents. The official sources do not respond because they do not have an adequate answer, or because they do not even care, goes the typical conspiracy theory.

7.5 Discussion

How to respond to conspiracy theories is undoubtedly a pressing urgent question. For as Douglas (2021, p. 271) puts it, "conspiracy theories are consequential, and in many studies have been linked to climate denial, vaccine refusal, political apathy, apathy in the workplace, prejudice, crime, and violence". Various strategies for addressing the consequences of CT have been suggested in the literature. One strategy has been confrontation. For example, Romer and Jamieson (2020, p. 113355) argue that "Because belief in COVID-related conspiracy theories predicts resistance to both preventive behaviours and future vaccination for the virus, it will be critical to confront both conspiracy theories and vaccination misinformation to prevent further spread of the virus in the US." Romer and Jamieson recommend "continued messaging by public health authorities on mainstream media and in particular on politically conservative outlets that have supported COVID-related conspiracy theories" (ibid.). In the same vein, Douglas (2021, p. 272) suggests that " 'inoculating' people with factual information can stem the influence of conspiracy theories". However, confronting the conspiracy is a risky choice. The allure of conspiracist explanation lies to a great extent in their simplification, rather oversimplification, of complex realities. It might be overly optimistic to believe that the rather more complex truth would simply win the public's mind once they are presented with it. Just consider how little success it has yielded to fact-check the misinformation presented as part of the different CTs in the last decades. Furthermore, explicitly engaging with conspiracy theories risks giving them more presence.

There is a danger that the more we engage with CTs, the more publicly present conspiracist inferences become, and the harder it gets to avoid interpreting uncertainty in a denialist argumentative potential. But while engaging with conspiracy theories is surely not the answer, ignoring them is not either. It might be understandably tempting to think that the right thing to do is to ignore, or even delegitimize the doubts that fuel conspiracy theories. Indeed, that has been the predominant attitude when it comes to vaccine-related CTs. The history of the never-ending MMR vaccine controversy is a good example (see Jackson, 2020). But conspiracy theories fuel on doubts, and ignored doubts do not disappear. To the contrary, ignoring them is turned in itself into another piece of evidence in favour of the conspiracy. What is needed

is an approach that addresses the doubts hijacked by CTs without giving presence to the CTs themselves. That would be an approach that engages with doubt, but not with its denialist argumentative potential.

There is indeed a need to reconsider the ease in which doubt is being interpreted as an expression of a conspiracy theory, for as it signals irrationality, the CT label can neutralize valid concerns and delegitimize people (Douglas et al., 2019; Harambam & Aupers, 2017; McKenzie-McHarg & Fredheim, 2017; Orr & Husting, 2018; Räikkä & Basham, 2018). But reconsidering the CT label only begins by acknowledging the legitimacy of doubt, and it is not completed until different argumentative potentials are assigned to the different types of doubt. Distinguishing between different argumentative potentials is a crucial element in a response that acknowledges legitimate concerns without empowering conspiracy theories. It is in a sense a way to avoid that an unnecessarily broad interpretation of conspiracy theory dominates the public debate and leaves an uncertain public a prey to it. It is important to distinguish between different argumentative potentials but when that is not possible, medical authorities should interpret doubt in the ambivalent potential. Ambivalent doubt ought to be addressed by experts and health authorities who have the adequate knowledge to respond to the reason motivating it.

A final word, on the argumentative potential of doubt in its relation to trust. Indeed, CTs cannot be countered without addressing the question of trust. In order to reduce the impact of conspiracy theories, Nisbet (2009) suggests that "trusted messengers" are employed. As she explains, combating the conspiracy theory may be likely to have more success if the counterarguments come from trusted sources such as valued ingroup members, instead of outgroup members who are typically associated with mistrust (ibid.). The "trusted messengers" strategy seems to have been guiding Dr. Anthony Fauci, Director of the US National Institute of Allergy and Infectious Diseases, as he fostered partnership with African American groups and religious leaders. Also in the same vein, it has been a news highlight that Moderna's COVID-19 vaccine is being studied by a team of scientists led by a black woman, Dr. Kizzmekia Corbett. While it is surely helpful to present the public with sources they trust, an adequate response ought to also curb the argumentative potential that doubt can have in undermining trust. In CT discourse, doubt is presented as evidence against the OS. But that can be successful only if doubt is not already part of the OS. In other words, the argumentative potential of doubt to discredit the OS might disappear if doubt is integrated in the OS. While ambivalent doubt is surely already part of the vaccine OS, more communicative effort is needed to present it as such: to present an OS that is more realistic and therefore not easily discredited by doubt.

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