

When THUNCing Trumps Thinking: What Distant Alternative Worlds Can Tell Us About the Real World

*Stephan Lewandowsky**, *Elisabeth A. Lloyd***
*Scott Brophy****

**University of Bristol and University of Western Australia,*

***Indiana University,*

****Hobart and William Smith Colleges*

Abstract

By and large, our cognition is a truth-tracking device. There is much evidence that people's cognition can be optimal in many circumstances. Non-conventional forms of cognition, such as conspiracist ideation and belief in the paranormal, are considered less suited as a reality-tracking device. We suggest that actual conspiracies are preferentially identified by conventional cognition, whereas non-existent conspiracies that are the objects of conspiracy theories fall within the domain of conspiracist cognition. We explore the implications of this suggestion through an analysis of President Donald Trump's Twitter discourse.

Keywords: Conspiracist cognition, Trump's twitter irrationality, irrational cognition and conspiracies, counterfactual conspiracist claims, inconsistent beliefs

1. Introduction

By and large, our cognition is a truth-tracking device. There is now much evidence and theorizing that supports the notion that people's cognition can be considered "optimal" in many circumstances. That is, human performance has frequently been shown to conform to Bayes Theorem, the acknowledged normative gold standard for how to update prior beliefs in light of new evidence (Chater, Tenenbaum & Yuille 2006; Knill & Pouget 2004). Even in remarkably esoteric tasks, such as estimating the duration of the reign of Egyptian Pharaohs, people's performance has been found to be finely attuned to the actual statistical properties of the environment (Griffiths & Tenenbaum 2006; Lewandowsky, Griffiths & Kalish 2009). Even seemingly biased behaviors, such as the over-reliance on extreme events when judging probabilities (Lichtenstein, Slovic, Fishhoff, Layman & Combs 1978), reveal themselves to be arguably rational when the constraints of cognitive resource limitations are considered (Lieder, Hsu & Griffiths 2014).

Likewise, when considered in the aggregate, the scientific enterprise has proven itself to be a useful truth-tracking device. Many of the defining features of science, such as updating hypotheses in light of new evidence, are explicitly compatible with normative optimality criteria for human cognition (Friedman 2002; Thagard 2004).

There are, however, exceptions to this general pattern of cognitive rationality and optimality. For example, explanations for why people hold certain delusional beliefs—for example, that their partner has been replaced by an impostor—have had to invoke non-Bayesian, irrational processes (McKay 2012; Parrott 2016). Specifically, a man who believes that his wife has been replaced by an impostor—the Capgras delusion—is thought to rely entirely on the Bayesian likelihood function, without any regard to the prior probability of the array of possible hypotheses (McKay 2012). It is only by ignoring the rather infinitesimal prior probability of a wife being replaced by an impostor that perceptual evidence can yield the delusion that this has actually happened. Likewise, paranormal and pseudoscientific claims are typically considered to be epistemically unwarranted (Lobato, Mendoza, Sims & Chin 2014).

In this article, we are concerned with a puzzle in philosophy; namely, the extent to which conspiracy theories are epistemically warranted (Keeley 1999). Any analysis of conspiracist discourse is immediately faced with a dilemma: Unlike beliefs in the supernatural or other cognitive delusions that have no discernible echo in reality, conspiracies sometimes do exist. Oliver North did sell weapons to Iran from the basement of the White House, and Richard Nixon's White House was involved in the Watergate break-in, and so on. However, in other instances, conspiracy theories have been spun that—at least to date—have no echo in reality. For example, there is no credible evidence that AIDS was invented by the CIA or that climate change is a hoax, even though adherents of those theories are disseminating reams of “evidence” in their favor.

Given that some conspiracies exist, how can we determine whether a conspiracy theory refers to an actual, existing conspiracy or is a figment of the beholder's imagination—as is tacitly implied by the dismissive connotations associated with calling someone a “conspiracy theorist”? We argue that an analysis of the cognition and argumentation involved in the theorizing can be a potential indicator of whether we are dealing with an epistemically defensible analysis of a potential conspiracy, or with conspiracist cognition that is a candidate for rejection.

2. In Defence of Discovering Conspiracies

Some philosophers have defended conspiratorial thinking from charges of irrationality, and argue instead that a valuable service is performed by theorizing about conspiracies. For example, Dentith argues that theories about conspiracies must be examined on a case-by-case basis, and that because not all conspiracies are *prima facie* unlikely, inferring a conspiracy can often be a viable explanation of events (Dentith 2016).

A particularly forceful variant of that argument was advanced by Coady, who suggested that “conspiracy theorists are performing an important task on behalf of the community” (Coady 2007: 196) because they exercise the vigilance that is required to maintain our democracy by scanning the political horizon for potential conspiracies. Although Coady does not suggest that we should endorse

all conspiracy theories by default, he argues that in terms of adverse impacts on democracy, we should often be more concerned with “official” epistemologies—such as the U.S. government’s claims about Weapons of Mass Destruction in the lead-up to the invasion of Iraq in 2003—than with conspiracy theorists whose presumed epistemic independence renders them more resilient to becoming entrapped in false “official” narratives. Coady’s argument is based on the supposition that because some conspiracies exist, therefore the activities of conspiracy theorists—that is, people who are dedicated to examining potential conspiracies—must be of value to society because they might uncover conspiracies. The tacit underlying assumptions of this argument are that (a) conspiracy theorists sometimes uncover true conspiracies, and that (b) those true conspiracies would not have been uncovered without the vigilance of conspiracy theorists.

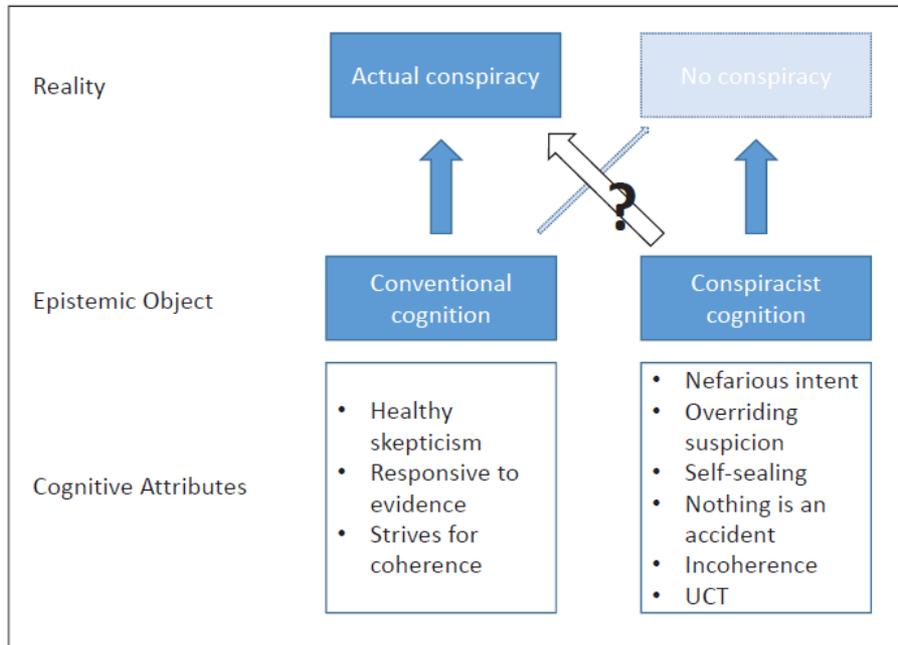
We agree that conspiracies can exist and that they may not be as unlikely as one might intuit—for example, who would have thought it a priori likely that Volkswagen would design engines that reprogram themselves to be less polluting whenever they sense that an emissions test is being conducted. However, we propose that it was conventional reasoning and cognition—rather than epistemically impoverished conspiracist cognition—that uncovered the Volkswagen conspiracy, or indeed any other now-acknowledged conspiracy, such as Watergate or the Iran-Contra affair. We can question the White House’s story or VW’s clean Diesel engines, or conversely, we can question mainstream journalists whom the White House has rejected as “among the worst people in the world”, without engaging in conspiracist patterns of thought. We thus agree with Dentith that there are occasions “when inferring to a conspiracy might be the best explanation” (Dentith 2016: 572). It does not follow, however, that conspiracy theorists and their discourse should be ascribed an equal epistemic status—on the contrary, we agree with Sunstein and Vermeule that conspiracy theorists typically suffer from a “crippled epistemology” (Sunstein and Vermeule 2009: 204). This, of course, begs the question and introduces a risk of circularity unless conspiracist cognition, whatever that is, can be identified by independent means.

3. In Defense of Rejecting Conspiracist Cognition

How can we defend attempts to discover potential conspiracies while at the same time rejecting conspiracist cognition? Figure 1 summarizes our approach and resolves this apparent conundrum. The top layer in the figure refers to an actual state of the world, in which there either exists (on the left) or does not exist (on the right) a conspiracy. The next layer refers to the “epistemic object”; that is, the cognitive construct in people’s minds that pertains to the particular reality being examined. The final, bottom layer represents the cognitive attributes of that epistemic object, which are subject to examination by observation or psychological experimentation.

Our contention is twofold: first, we suggest that identification of the cognitive attributes—and hence inference of the epistemic object—is empirically possible. The identification may not be perfect and may involve some statistical error, but for present purposes we consider it to be sufficiently accurate. Indeed, we have taken this approach in the past, by empirically investigating and describing the content of the beliefs and the reasoning put forth by a sub-group of conspiracy theorists (Lewandowsky *et al.* 2015; Lewandowsky, Cook & Lloyd 2016). Second, we suggest that actual conspiracies are preferentially identified by conventional

Figure 1. Schematic overview of the argument advanced in this paper. See text for details.



cognition, whereas non-existent conspiracies are the domain of conspiracist cognition. We base this proposal on the demonstrably successful track record of conventional cognition (e.g., in the scientific domain, but also in discovering actual conspiracies), and the demonstrable lack of such success of conspiracist cognition, as we will highlight shortly.

Turning first to the involvement of conventional cognition in the discovery of actual conspiracies, a brief survey reveals that most were revealed by conventional means, such as government leaks that were then reported in the media. We list those true conspiracies and the means of how they were uncovered, in Table 1. Although our list is far from exhaustive, the table comprises several rather famous true conspiracies.

Table 1. *A sample of true conspiracies and how they were uncovered.*

Conspiracy	Source of revelation	Type of source
Iran-Contra	Lebanese newspaper <i>Al-Shiraa</i>	Print media
Gulf of Tonkin	Letter to editor (John White)	Whistleblower, among others
NSA PRISM	Leaktomedia (Edward Snowden)	Whistleblower, among others
Tuskegee Syphilis Study	Whistleblower (Peter Buxton)	Whistleblower, U.S. Senate
FBI forensic scandal	Whistleblower (Dr. Frederic Whitehurst)	Whistleblower, DOJ report

In no case is there evidence that the “theory” was first postulated or revealed by conspiracy theorists. Instead, in all cases the revelation involved conventional

means of discovery, such as media reports based on leaks or testimony by whistleblowers.

By contrast, conspiracist cognition is characterized by certain patterns of reasoning that are less truth-seeking or reliable than “standard cognition.” We summarize those cognitive patterns in Table 2, based on one of our earlier analyses (Lewandowsky *et al.* 2015).

Table 2. *Summary of cognitive patterns observed in conspiracist ideation.*

Questionable motives
Persecution-victimization
Overriding suspicion
Nothing is an accident
Something must be wrong
Self-sealing reasoning
Thinking in Unreflective Counterfactuals (THUNC)

The first criterion is that the presumed motivations behind any assumed conspiracy are invariably assumed to be nefarious: We know of no conspiracy theory that would acknowledge the benign motivations of the presumed conspirators (Keeley 1999).

A corollary of the first criterion is that the person engaging in conspiracist ideation perceives and presents her- or himself as the victim of organized persecution, while at the same time, at least tacitly, also perceiving themselves as brave antagonists of the nefarious intentions of the conspiracy. Conspiracist cognition thus involves a self-perception of being a victim but also a hero.

Third, conspiracist ideation involves “an almost nihilistic degree of skepticism” towards the “official” account (Keeley 1999: 125). This extreme degree of suspicion prevents belief in anything that does not fit into the conspiracy theory. Accordingly, low trust (Goertzel 1994) and paranoid ideation (Darwin, Neave & Holmes 2011) feature prominently among personality and attitudinal variables known to be associated with conspiracist ideation.

Fourth, the overriding suspicion frequently entails the belief that nothing occurs by accident: Small random events are re-interpreted as evidence for the theory (Barkun 2003). For example, the conspiracy theory that blames the events of 9/11 on the Bush administration invokes “evidence” (e.g., intact windows at the Pentagon: Swami, Chamorro-Premuzic & Furnham 2009) that is equally consistent with randomness.

Fifth, although conspiracist cognition may entail the abandonment of specific hypotheses when they become unsustainable, those “corrections” do not impinge on the overall abstraction that “something must be wrong” and the “official” account must be based on deception (Lewandowsky *et al.* 2016; Wood, Douglas & Sutton 2012). Thus, the specific claims and assumptions being invoked by conspiracist ideation may well be fluctuating, but they all revolve around the fixed belief that an official version is wrong. In consequence, it may not even matter if hypotheses are mutually contradictory, and the simultaneous belief in mutually exclusive theories—e.g., that Princess Diana was murdered but also faked her own death—has been identified as an aspect of conspiracist ideation (Wood *et al.* 2012).

Sixth, conspiracist cognition is inherently self-sealing: that is, evidence that counters a theory is re-interpreted as evidence for a conspiracy (Bale 2007; Keeley 1999; Sunstein & Vermeule 2009). This reflects the ideation that the stronger the evidence against a conspiracy (e.g., the FBI exonerating a politician from allegations of having misused a personal email server), the more the conspirators must want people to believe their version of events (i.e., the FBI is part of the conspiracy to protect that politician).

Our final attribute of conspiracist cognition is a pattern we first identified and reported in 2015 (Lewandowsky *et al.* 2015). We initially termed this attribute “Unreflexive Counterfactual Thinking,” but we now prefer to call it “Thinking in Unreflective Counterfactuals”, or THUNC for short. From here on we are particularly—though not exclusively—concerned with THUNC.

4. The THUNC of Conspiracist Cognition

THUNC is characterized by two attributes: First, it involves hypotheses that are built on a non-existent, counterfactual state of the world, even though knowledge about the true state of the world is demonstrably available. Second, in the context we had initially investigated it, we proposed that THUNC additionally involved conclusions that are logically unwarranted even if the counterfactual state of the world were true.

To illustrate, consider first a counterfactual that might be true, such as “A would have replied, had B asked.” Based on our knowledge of A and B, we might assert that this counterfactual is true, and our assertion can be evaluated with some degree of confidence irrespective of whether or not B had actually posed a question. By contrast, the assertion that “pi is a rational number because 4 is odd” involves a false and illogical conclusion because even if 4 were an odd number (which it is not), the status of pi could not be logically derived from that premise. (For a related discussion, see Sorensen (2012)’s detailed analysis of how conditionals can enable lying.)

Our initial understanding of THUNC thus involved the chaining of an erroneous premise with a logically unwarranted inference (Lewandowsky *et al.* 2015). Those are, however, extreme cases. In our revised understanding of THUNC, the counterfactual has been imagined precisely to account for a conspiratorial thesis, so the second feature, the invalid inference, is not a necessary feature of this type of counterfactual. What is necessary is that THUNC is unreflective in the sense that its coherence with other, more ordinary, beliefs is sacrificed when asserting in ad hoc fashion that there is a reason for obvious contrary evidence to be inapplicable in this case. We now explore the implications of our approach to THUNC by using the discourse of Donald Trump as the target of analysis.

5. Donald Trump’s THUNC

Donald Trump’s discourse is particularly suitable for analysis because he has been in the public eye for a long time and his favorite medium, Twitter, provides a succinct and searchable archive. Twitter is also of particular relevance because it has been said to promote public discourse that is “simple, impetuous, and frequently denigrating and dehumanizing”, and that “fosters farce and fanaticism, and contributes to callousness and contempt” (Ott 2017: 60).

During the campaign and what had barely been a month in office, Donald Trump had proffered several conspiracy theories on Twitter with elements of THUNC: For example, when the mainstream media reported, based on the National Park Service's photos and estimates, that the crowds attending his inauguration were modest compared to other inaugurations, President Trump dismissed this because the Park Service should not be trusted; they are part of the plot to make him look bad.¹ Similarly, President Trump attributed his loss of the popular vote (by nearly 3,000,000) to the presumption that three to five million "illegal aliens" had voted fraudulently in the election.² We next present a detailed analysis of two such claims that involved THUNC; namely, first, the accusation that President Obama had wiretapped Mr. Trump during the campaign, and second, that millions of illegal aliens voted for Hillary Clinton.

5.1 The Alleged Obama Wiretap

Early on a Saturday morning, after a week when his Attorney General, Jefferson Beauregard "Jeff" Sessions III, had recused himself from any future Justice Department investigations of possible connections between Russian officials and the Trump campaign and its surrogates (the Attorney General was one of them), the president of United States took to Twitter and unleashed the following, now-famous bombshell: Barack Obama, while president, had ordered the "wire tapping" of Trump during the campaign. The tweets compared this to the persecution of the McCarthy era and the abuse of executive power that took place during Watergate. Mr. Trump called the former president a "bad (or sick) guy."

Released intermittently over less than 30 minutes, there were only 84 words in the president's four early morning messages, and none of them were devoted to the evidence on which such a momentous accusation was based. There was no mention even of classified information that, as president, he might have access to but could not publicly share:

- *Terrible! Just found out that Obama had my "wires tapped" in Trump Tower just before the victory. Nothing found. This is McCarthyism! 6:35 AM - 4 Mar 2017*
- *Is it legal for a sitting President to be "wire tapping" a race for president prior to an election? Turned down by court earlier. A NEW LOW! 6:49 AM - 4 Mar 2017*
- *I'd bet a good lawyer could make a great case out of the fact that President Obama was tapping my phones in October, just prior to Election! 6:52 AM - 4 Mar 2017*
- *How low has President Obama gone to tapp [sic] my phones during the very sacred election process. This is Nixon/Watergate. Bad (or sick) guy! 7:02 AM - 4 Mar 2017*

Reports had circulated that the president and his advisors were aware of a story about the alleged wiretapping on the website Breitbart.com, which had been edited by Stephen Bannon until he became the president's chief strategist and trusted aide. In its Thursday evening post, Breitbart cited no evidence, but mentioned that the claim had been made by radio talk show host Mark Levin, who

¹ <http://www.foxnews.com/politics/2017/01/27/trump-reportedly-wanted-additional-photos-inauguration-day-crowd-size.html>

² https://www.washingtonpost.com/news/fact-checker/wp/2017/01/24/recidivism-watch-trumps-claim-that-3-5-million-people-voted-illegally-in-the-election/?utm_term=.9eac365c1bed

offered the story to illustrate the “police state tactics of Obama”.³ Breitbart considered Levin a trustworthy source of information, and the president trusts Bannon and Breitbart. The New York Times and CNN, on the other hand, and others have repeatedly been called “fake news” by President Trump, who has also called the press pool “some of the most dishonest people and despicable human beings around.”

Cynics dismissed the president’s accusations as merely an attempted distraction from the Attorney General having recused himself the day before from any investigations of the Trump campaign’s ties to the Russian government. No doubt reflecting what a large number of skeptical viewers were wondering, even the Sunday morning news shows asked if this really happened, or whether, as Princeton historian Julian Zelizer put it on CNN, this was just another of President Trump’s many conspiracy theories.⁴

It may be true that Mr. Trump wished to divert attention from Jeff Sessions’s recusal, but the lengths to which he had gone this time were unprecedented: a sitting president of the United States was publicly accusing the former president of having committed a felony, or, at best, vastly overreaching his authority to order surveillance over United States citizens. A spokesman for Obama immediately denied the charges, and Obama spokesperson Kevin Lewis and others were quick to point out that President Obama’s office had instituted a firewall policy with regard to intelligence agency investigations.

A spokesman for former President Obama swiftly issued the following response: “A cardinal rule of the Obama Administration was that no White House official ever interfered with any independent investigation led by the Department of Justice. As part of that practice, neither President Obama nor any White House official ever ordered surveillance on any U.S. citizen. Any suggestion otherwise is simply false.”

As this essay goes to press, no evidence in support of the conspiracy cited by Donald Trump—that is, that the Obama White House conspired with others in government to wiretap Trump Towers—has been provided.⁵

The absence of evidence is notable in particular because the President could have hinted that there was secret evidence based on intelligence briefings that could not be made public.

It is worth pausing to consider the following simple question: What would have to be true for the Obama wiretapping conspiracy to be true? Indeed, what would have to be true for any of the conspiracies imagined by Donald Trump to be true? Attention to this question brings us into increasingly remote possible worlds, ones whose implications do not cohere with ordinary beliefs about the world. The THUNCs that are proffered by Donald Trump explain these events, but they do so at a cost.

Take, for example, the accusation that President Obama had “wiretapped” Trump Tower. If true, then either it was done after obtaining a FISA (Foreign Intelligence Surveillance Act of 1978) warrant from a judge presiding over a United States Foreign Intelligence Surveillance Court of Review, or else it was

³ <http://www.breitbart.com/big-government/2017/03/03/mark-levin-obama-used-police-state-tactics-undermine-trump/>

⁴ <http://edition.cnn.com/2017/03/04/opinions/trump-conspiracy-theories-zelizer/>

⁵ <https://www.washingtonpost.com/news/fact-checker/wp/2017/03/05/trumps-evidence-for-obama-w>

done without such a warrant. President Trump has not indicated which of these he believes, but each possibility stretches credulity in different ways.

Consider first the possibility that a FISA warrant had been granted to an agency such as the FBI. For this possible world to have existed, that agency would have had to have presented evidence of serious criminal activity. A federal judge would only have approved a warrant to wiretap Trump's phones if he or she had found probable cause that Trump had committed a federal crime or was a foreign agent. Former Obama deputy national security adviser Ben Rhodes echoed the point in a tweet responding to Trump on Saturday morning: "No president can order a wiretap. Those restrictions were put in place to protect citizens from people like you."⁶

On the other hand, consider the possibility that Obama "ordered" a wiretap without a warrant. This would mean that an agency with the technological capabilities had followed such an order and had therefore broken the law. How would President Trump have discovered such an unlikely series of events had taken place? Surely some indication of the reasons he believes this would be made available to, say, the Foreign Intelligence Committee of the Senate, whom Trump has asked to investigate this allegation. Senator John McCain, Chairman of the committee, has indicated that no evidence whatsoever has been provided, and that the president, a member of his own party, should either withdraw the accusation or provide some sort of evidence to support it.

It is not just that either of these scenarios is unlikely. Crucially, THUNC is implicated here because either scenario is so unlikely, that the possible world in which President Obama either received a warrant or wiretapped Trump Towers without a warrant flies in the face of what the current president himself believes about the Department of Justice or the federal courts. Our view rests on the notion that we have near and far possible worlds, and the metric is how much overlap there is with our own, real world (Lewis 1973). THUNC arises here because President Trump seems to have neglected considering what other beliefs would also need to be involved in the initial claim.

To see this, first examine the initial claim, that Obama ordered and was conducting a wiretap on Trump without court authorization. According to all the evidence available so far, not only is that contention unsupportable, but the claim would also entail the existence of multiple other beliefs about worlds that are increasingly remote. For example, the claim would imply that the normal channels of national security are not trustworthy themselves because they are corrupt: There must be a technologically-capable agency willing to obey the president in defiance of the law; this agency must act in complete secrecy (to explain the absence of any evidence for the claim); there must be one or more individuals operating in complete secrecy from this agency who are nevertheless willing to break that secrecy to inform the current president about the surveillance, possibly getting their closest colleagues into trouble for breaking federal law, and so on. In other words, a substantial number of additional beliefs in alternative worlds are necessarily implied by Trump's claim of wiretapping.

Conversely, suppose that President Trump instead believes in the warranted version of the claim. In that case, the agency involved would operate within the law, and for the wiretap to be reminiscent of "Nixon/Watergate", it would have to be a judge who is a willing puppet of a "sick" or "bad" president, and so on.

⁶ <http://www.cnn.com/2017/03/04/politics/trump-obama-wiretap-tweet/>

Again, a substantial number of additional beliefs are also entailed by the warranted version of the claim.

The criteria for THUNC emphasize a lack of reflection about the implications of counterfactual assumptions (thus, the “unreflective” part of the definition). We suggest that President Trump did not reflect about these other, additional facts that would have to be different from the way the world is believed to be, in order to enact the wiretapping and hence to legitimize his tweeted claims. That these other facts are different implies that we have to go to a possible world that is even further out; that is, one that involves many more differences with our presumptions about the actual world. The more different the possible world is, the more distant it is from our own actual world. For example, very distant possible worlds might have different presidents, different laws, and different political systems. The wiretapping claim thus sets in motion a cascade of further counterfactual claims that are necessary to buttress the allegation, but are not, seemingly, considered by President Trump.

Moreover, crucially, this distant possible world is not concordant with the president’s other beliefs about the Justice Department and security in general. The level of corruption and the threat to national security in either of the warranted or warrantless version of those other possible worlds would conflict with how the president and the Justice Department or intelligence agencies function on a daily basis. Thus, we have a case of President Trump thinking in unreflective counterfactuals; that is, failing to consider all of the violations of his accepted beliefs that would be necessary to make the allegation true, and ending up with an inconsistent belief set. Of course, incoherence is a known and pervasive attribute of conspiracist ideation (Lewandowsky *et al.* 2016; Wood *et al.* 2012).

In addition to creating incoherence, the cascade of necessary other-world beliefs also requires that any evaluation of the prior probabilities of those various beliefs is discarded: Given the flimsy nature of the evidence on which President Trump’s claim rests (apparently just the utterances of a “shock jock”), any consideration of prior beliefs that assigns a non-zero probability to the hypothesis that FISA courts or intelligence agencies may not have colluded with President Obama, would not have permitted the strong inferences made by Trump. We noted earlier that the Capgras delusion requires that the prior probabilities of the two possible states of the world—that is, how likely it is that an impostor has replaced one’s wife vs. the likelihood that one’s wife is one’s wife—be discarded (McKay 2012), Trump’s claim likewise cannot be sustained without a similar refusal to consider prior probabilities of various competing worlds.

5.2 The Alleged Millions of Illegal Voters

The claim that three to five million undocumented immigrants voted in the election would, perhaps, explain why Mr. Trump lost the popular vote by, coincidentally, three million votes. On this view, the illegal votes would have virtually all had to have gone to Hillary Clinton.

But this possibility is highly unlikely. When Mr. Trump mentioned those concerns about non-citizen voting, the context implied that he was particularly focused on Hispanic non-citizens voting (as opposed to, say, Canadian or Malaysian immigrants voting). It is therefore relevant to examine the voting pattern among legitimate Hispanic voters. The data suggest that a third of Hispanics

seemed to have voted for Trump.⁷ In other words, even if there had been 3 million illegal Hispanic voters (there were not), Trump likely would have received a third of their vote.

If President Trump had reflected on that fact when presenting his claim, he would have recognized that for the numbers to work out in his favor would have required closer to 9 million illegal voters, in the actual world, for Hillary Clinton to have won the popular vote by the observed margin. More importantly, Trump's claim involves millions of cases of voter fraud, when the accepted facts indicate that voter fraud happens in only approximately one out of a million votes.⁸

Officials in charge of polling places vociferously objected to Trump's implication of massive scale voter fraud, based on their current practices and all available empirical evidence, a view supported by political scientists (Ansolabehere, Luks, & Schaffner 2015).

This is a case of THUNC, again, because the possible worlds that are involved in President Trump's simple claim of the three to five million illegal votes are distant from the world as we know it. It seems that Trump did not reflect on this distant set of possible worlds and just how far they are from either his usual beliefs or the empirically defensible facts before he made his claim. But the conspiracy necessary for his claim to be true would reach so far that the possible world in which it is true is, indeed, very remote. Again, it is not just the unlikeliness of such events, but what its truth would say about other beliefs about the legitimacy of the election, that are relevant.

In particular, President Trump seems to make inconsistent inferences about the voting system. It is significant that he does not reject the outcome of the electoral college win that he sustained, so he evidently believes that the electoral system and its polling are somewhat accurate, and in fact, represent his fair-and-square victory over Clinton. But this cannot be true on the same possible world in which massive voter fraud occurred, invalidating the results of the election.

Thus, this is a paradigm case of the kind of unreflective and logically inconsistent conspiratorial thinking that we are calling THUNC. The point of our analysis is that Trump's postulated possible world, on which he won the popular vote, is further away from the real world than he expected or was intending to go, in that it conflicts with already held beliefs that were not examined when postulating the conspiracy.

THUNC is fairly labeled as irrational thinking, contrary to the claims of philosophers like Coady (2007), because the reality-denying or counterfactual parts of Trump's belief system conflict with his other cherished beliefs, and are not coherent with them. This lack of coherence is not reflected on in any way, and the lack of actively pursuing coherence with other beliefs is what makes this counterfactual "unreflective" thinking. The cases of THUNC are more than violations of the factual world, making them counterfactual, which is easily seen and documented; in addition, the incoherence with accepted beliefs are also not reflected on, both for the originators and the followers of this brand of conspiratorial thinking. It is not just that they are wrong, it is that they do not make sense. Their beliefs are not compatible with one another in a way that is required for rationality.

⁷ <http://www.usatoday.com/story/news/politics/elections/2016/2016/11/09/hispanic-vote-election-2016-donald-trump-hillary-clinton/93540772/>

⁸ https://www.washingtonpost.com/news/monkey-cage/wp/2016/10/19/trump-thinks-non-citizens-are-deciding-elections-we-debunked-the-research-hes-citing/?utm_term=.fea9efb89f8f

Note that the irrationality of these beliefs is shared by any followers of Trump, who also apparently lack the drive to make the set of beliefs coherent with accepted beliefs. The followers are adopting the results of Trump's incoherent thinking, but perhaps not necessarily his exact same reasoning processes. But they are also guilty of the lack of reflection concerning just how far out this possible world is required to be, to accommodate all the "facts" of the conspiracy. Thus, they also engage in reasoning of the THUNC variety.

It is far from clear what President Trump actually believes, and what is media manipulation for political purposes.⁹ Indeed, it has been argued that Twitter's form as a medium promotes impulsivity, and conversely inhibits reflexivity, given the near-universal availability of an internet connection and the minimal effort involved in typing a maximum of 140 characters (Ott 2017). Perhaps, then, the unreflective attributes of Trump's tweets represent the medium as well as the messenger.

However, even if President Trump does not really believe his own claims, or even if the Twitter form facilitates his THUNCs, it cannot be overlooked that the president of the United States is issuing tweets that are typical of conspiracy theories, and function in a way that is, because of their incoherence with other beliefs, the opposite of truth preserving, truth seeking, or reliable. Recent research suggests that for Donald Trump's followers, those departures from conventional truth-oriented communication are of little consequence (Swire, Berinsky, Lewandowsky, & Ecker 2017).

6. Concluding Remarks

6.1 Limitations

At this stage of its development, our argument is subject to several obvious limitations. First, although we have shown that THUNC can be an element of conspiracist discourse, we are unsure whether it is a necessary, or even pervasive, attribute of conspiracist ideation. Further work can examine this issue, for example by analyzing discourse surrounding well-established conspiracy theories, such as the idea that NASA faked the moon landing or that the 9/11 terrorist attacks were an "inside job".

Second, our analysis of Donald Trump's tweets is far from exhaustive. There may be additional tweets that point to other attributes of conspiracist discourse, or there may be many more that repudiate conspiratorial hypotheses.

Our analysis was also one-sided. At the time of this writing, opponents of President Trump have repeatedly drawn attention to putative links between the government of the Russian Federation and members of the Trump campaign. Those connections have all the hallmarks of a conspiracy (theory) and deserve further journalistic and scholarly attention. At the time of this writing, the Russian connection is pursued or taken for granted by much of the world's media, from TIME to the Guardian or New York Times and Washington Post. It remains to be seen whether those particular "conspiracy theorists are performing an important task on behalf of the community" (Coady 2007: 196), and whether the Russia connection will therefore eventually form another entry in our Table 1, or whether the associated cognition exhibits the features summarized in Table 2.

⁹ <https://georgelakoff.com/2017/03/07/trumps-twitter-distraction/>

6.2 Outlook

We have shown that some of President Trump's discourse fulfils various criteria for conspiracist cognition. Why would this matter?

There is some evidence that public dissemination of conspiracist claims has notable side effects. The mere exposure to conspiratorial discourse, even if the claims are disbelieved, makes people less likely to accept canonical, "official" information (Einstein & Glick 2015; Jolley & Douglas 2013; Raab, Auer, Ortlieb, & Carbon 2013). For example, in one study, the mere exposure to conspiracy theories has been found to decrease participants' intentions to engage in politics and to reduce one's carbon footprint (Jolley & Douglas 2013). In another study, exposure to a conspiracy claim was found to adversely affect trust in government services and institutions, including those unconnected to the allegations (Einstein & Glick 2015). The introduction of conspiracist discourse into the public sphere may therefore have adverse consequences for society overall.

Moreover, the implications of President Trump's discourse cannot be evaluated without also considering his long record of stating overt falsehoods. During the election campaign, independent fact checkers Politifact evaluated around 70% of Trump's statements to be at best "mostly false" (with more than 50% ranked "false" or "pants on fire"). Only 5% of his statements were rated "true." It has now become common in the mainstream media to refer to President Trump's "lies".¹⁰ This practice deviates sharply from media behavior during previous administrations which has pervasively avoided referring to misstatements as "lies".

A worrying implication of this situation arises when one analyzes the consequences of such pervasive falsehoods. Experts on authoritarianism postulate that the purpose of public lies is not (just) to mislead the public, but to erode the epistemic status of facts and evidence altogether in the interest of an authoritarian regime (cf. Schedler & Hoffmann 2016). As Roger Cohen put it, "Trump's outrageous claims have a purpose: to destroy rational thought".¹¹ A population that no longer finds anything believable will end up believing anything. This dystopic potential future is reminiscent of the pre-enlightenment world in which whatever the people in power said was considered true.¹²

References

- Ansolabehere, S., Luks, S., & Schaffner, B.F. 2015, "The perils of cherry picking low frequency events in large sample surveys", *Electoral Studies*, 40, 409-10. <http://www.sciencedirect.com/science/article/pii/S0261379415001420> doi: <http://dx.doi.org/10.1016/j.electstud.2015.07.002>

¹⁰ <https://www.nytimes.com/2017/02/27/opinion/mischaracterizations-misrepresentations-and-lies.html>

¹¹ <https://mobile.nytimes.com/2017/01/24/opinion/the-banal-belligerence-of-donald-trump.html>

¹² Preparation of this paper was facilitated by a Wolfson Research Merit Award from the Royal Society to the first author. The first author also receives funding from the Psychonomic Society. Address correspondence to the first author at the Department of Experimental Psychology, University of Bristol, 12a Priory Road, Bristol BS8 1TU, United Kingdom. email: stephan.lewandowsky@bristol.ac.uk. Personal web page: <http://www.cosci.wa.com>.

- Bale, J.M. 2007, "Political paranoia vs. political realism: on distinguishing between bogus conspiracy theories and genuine conspiratorial politics", *Patterns of Prejudice*, 41, 45-60. doi: 10.1080/00313220601118751
- Barkun, M. 2003, *A culture of conspiracy: Apocalyptic visions in contemporary America*, Berkeley: University of California Press.
- Chater, N., Tenenbaum, J.B. & Yuille, A. 2006, "Probabilistic models of cognition: Conceptual foundations", *Trends in Cognitive Science*, 10, 287-91.
- Coady, D. 2007, "Are conspiracy theorists irrational?", *Episteme*, 4, 193-204. doi: 10.3366/epi.2007.4.2.193
- Darwin, H., Neave, N. & Holmes, J. 2011, "Belief in conspiracy theories. The role of paranormal belief, paranoid ideation and schizotypy", *Personality and Individual Differences*, 50, 1289-93. doi: 10.1016/j.paid.2011.02.027
- Dentith, M.R.X. 2016, "When inferring to a conspiracy might be the best explanation", *Social Epistemology*, 30, 572-91. doi: 10.1080/02691728.2016.1172362
- Einstein, K.L. & Glick, D.M. 2015, "Do I think BLS data are BS? The consequences of conspiracy theories", *Political Behavior*, 37, 679-701. doi: 10.1007/s11109-014-9287-z
- Friedman, M. 2002, "Kant, Kuhn, and the rationality of science", *Philosophy of Science*, 69, 171-90.
- Goertzel, T. 1994, "Belief in conspiracy theories", *Political Psychology*, 15, 731-42. doi: 10.2307/3791630
- Griffiths, T.L. & Tenenbaum, J.B. 2006, "Optimal predictions in everyday cognition", *Psychological Science*, 17, 767-73.
- Jolley, D. & Douglas, K.M. 2013, "The social consequences of conspiracism: Exposure to conspiracy theories decreases intentions to engage in politics and to reduce one's carbon footprint", *British Journal of Psychology*, 105, 35-56. doi: 10.1111/bjop.12018
- Keeley, B.L. 1999, "Of conspiracy theories", *The Journal of Philosophy*, 96, 109-26. doi: 10.2307/2564659
- Knill, D.C. & Pouget, A. 2004, "The Bayesian brain: the role of uncertainty in neural coding and computation", *Trends in Neurosciences*, 27, 712-19. doi: 10.1016/j.tins.2004.10.007
- Lewandowsky, S., Cook, J. & Lloyd, E. 2016, "The 'Alice in Wonderland' mechanics of the rejection of (climate) science: simulating coherence by conspiracism", *Synthese*. doi: 10.1007/s11229-016-1198-6
- Lewandowsky, S., Cook, J., Oberauer, K., Brophy, S., Lloyd, E.A. & Marriott, M. 2015, "Recurrent fury: Conspiratorial discourse in the blogosphere triggered by research on the role of conspiracist ideation in climate denial", *Journal of Social and Political Psychology*, 3, 142-78. doi: 10.5964/jspp.v3i1.443
- Lewandowsky, S., Griffiths, T.L. & Kalish, M.L. 2009, "The wisdom of individuals: Exploring people's knowledge about everyday events using iterated learning", *Cognitive Science*, 33, 969-98.
- Lewis, D. 1973, *Counterfactuals*, Cambridge (MA): Harvard University Press.
- Lichtenstein, S., Slovic, P., Fishhoff, B., Layman, M. & Combs, B. 1978, "Judged frequency of lethal events", *Journal of Experimental Psychology - Human Learning and Memory*, 4, 551-78. doi: 10.1037//0278-7393.4.6.551

- Lieder, F., Hsu, M. & Griffiths, T. L. 2014, "The high availability of extreme events serves resource-rational decision-making", in Bello, P., Guarini, M., McShane, M. & Scassellati, B. (eds.), *Proceedings of the 36th annual conference of the cognitive science society*, Cognitive Science Society, 2567-72.
- Lobato, E., Mendoza, J., Sims, V. & Chin, M. 2014, "Examining the relationship between conspiracy theories, paranormal beliefs, and pseudoscience acceptance among a university population", *Applied Cognitive Psychology*, 28, 617-25. <http://dx.doi.org/10.1002/acp.3042> doi: 10.1002/acp.3042
- McKay, R. 2012, "Delusional inference", *Mind & Language*, 27, 330-55.
- Ott, B.L. 2017, "The age of Twitter: Donald J. Trump and the politics of debasement", *Critical Studies in Media Communication*, 34, 59-68. doi: 10.1080/15295036.2016.1266686
- Parrott, M. 2016, "Bayesian models, delusional beliefs, and epistemic possibilities", *The British Journal for the Philosophy of Science*, 67, 271-96. doi: 10.1093/bjps/axu036
- Raab, M.H., Auer, N., Ortlieb, S.A. & Carbon, C.-C. 2013, "The Sarrazin effect: the presence of absurd statements in conspiracy theories makes canonical information less plausible", *Frontiers in Psychology*, 4, 453-53. doi: 10.3389/fpsyg.2013.00453
- Schedler, A. & Hoffmann, B. 2016, "Communicating authoritarian elite cohesion", *Democratization*, 23, 93-117. doi: 10.1080/13510347.2015.1095181
- Sorensen, R. 2012, "Lying with conditionals", *The Philosophical Quarterly*, 62, 249, 820-32. doi: 10.1111/j.1467-9213.2012.00080.x
- Sunstein, C.R. & Vermeule, A. 2009, "Conspiracy theories: Causes and cures", *Journal of Political Philosophy*, 17, 202-27. doi: 10.1111/j.1467-9760.2008.00325.x
- Swami, V., Chamorro-Premuzic, T. & Furnham, A. 2009, "Unanswered questions: A preliminary investigation of personality and individual difference predictors of 9/11 conspiracist beliefs", *Applied Cognitive Psychology*, 24, 749-761. doi: 10.1002/acp.1583
- Swire, B., Berinsky, A.J., Lewandowsky, S. & Ecker, U.K.H. 2017, "Processing political misinformation: comprehending the Trump phenomenon", *Royal Society Open Science*, 4, 160802. doi: 10.1098/rsos.160802
- Thagard, P. 2004, *Rationality and science*. Oxford: Oxford University Press.
- Wood, M.J., Douglas, K.M. & Sutton, R.M. 2012, "Dead and alive: Beliefs in contradictory conspiracy theories", *Social Psychological and Personality Science*, 3, 767-73. doi: 10.1177/1948550611434786