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The Bad News About Fake News

Neil Levy, Macquarie University

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## Abstract

We are surrounded by sources of information of dubious reliability, and very many people consume information from these sources. This paper examines the impacts on our beliefs of these reports. I will argue that fake news is more pernicious than most of us realise, leaving long lasting traces on our beliefs and our behavior even when we consume it knowing it is fake or when the information it contains is corrected. These effects are difficult to correct. We therefore ought to avoid fake or dubious news and work to eliminate it.

We consume a great deal of fiction. We seek it out for entertainment and we are plunged into it inadvertently. While the dangers of fiction have been a subject of philosophical controversy since Plato, the contemporary environment raises new worries, and also provides new ways of inquiring into them. In this paper, I focus on a subset of fictions: that subset that has come to be known as *fake news*. Fake news is widely held to have played a surprisingly large role in recent political events and appears to be proliferating unchecked. Its scrutiny is among the most urgent problems confronting contemporary epistemology.

Fake news is the presentation of false claims that purport to be about the world in a format and with a content that resembles the format and content of legitimate media organisations.<sup>1</sup> Fake news is produced and reproduced by a range of organisations. Some of them manufacture fake news deliberately, to entertain, to seek to influence events or to make money through the provision of click bait (Allcot & Gentzkow 2017). Some outlets serve as conduits for fake news due to deliberately permissive filters for items that support their world view, operating a *de facto* “print first, ask questions later” policy (the UK *Daily Mail* might be regarded as an instance of such a source; see Kharpal 2017). Genuinely reputable news organizations often reproduce fake news: sometimes because they are taken in by it (for one example at random, see Irvine 2017), but more often deliberately, either to debunk it or because politicians who they cannot ignore retail it.

Fake news raises a number of obvious concerns. Democracies require informed voters if they are to function well. Government policy can be an effective means of pursuing social goals only if those who frame it have accurate conceptions of the relevant variables. As individuals, we want our beliefs to reflect the way the world is, for instrumental reasons and for intrinsic reasons. Fake news can lead to a worse informed populace and take in those in positions of power, thereby threatening a range of things we value. It might have genuinely disastrous consequences. However, while the threat from fake news is serious, many believe that it arises only in limited circumstances. It is only to the extent to which people are naïve consumers of fake news (failing to recognize it for what it is) that it is a

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<sup>1</sup> This definition is intended to fix the reference for discussion, not serve as a set of necessary and sufficient conditions. While there may be interesting philosophical work to do in settling difficult questions about whether a particular organization or a particular item is or is not an instance of fake news, this is not work I aim to undertake here. We can make a great deal of progress on both the theoretical and the practical challenges posed by fake news without settling these issues.

problem. Careful consumption and fact checking can eliminate the problem for responsible individuals.<sup>2</sup>

In fact people often knowingly consume fake news. Some consume it in order to know what the credulous believe. Others confess to consuming fake news for entertainment. Most centrally, in recent months, fake news has been unavoidable to those who attempt to keep up with the news at all, because it has stemmed from the office of the most powerful man in the world. Journalists have seen it as their duty to report this fake news (often, but not always, *as* fake), and many people believe that they have a duty to read this reporting. Fact checks, for instance, repeat fake news, if only to debunk it.

According to what I will call the *naïve* view of belief and its role in behavior, fake news is a problem when and to the extent to which it is mistaken for an accurate depiction of reality, where the measure of such a mistake is sincere report. On the naïve view, we avoid the mistake by knowing consumption of fake news, and by correction if we are taken in. The naïve view entails that careful consumption of fake news, together with assiduous fact checking, avoids any problems. It entails, *inter alia*, that reading the fact check is at worst an innocuous way of consuming fake news.

The naïve view seems common sense. Moreover, advocates can point to extensive psychological research indicating that in most contexts even young children have little difficulty in distinguishing fact from fantasy (Weisberg 2013). Fiction, it seems, poses no problems when it is appropriately labelled as such; nor should fake news. I will argue that the naïve view is false. Worries about fake news may indeed be more serious when it is consumed by those who mistake it for genuine, but more sophisticated consumers are also at risk. Moreover, fake news corrected by fact checking sites is not fake news disarmed; it continues to have pernicious effects, I will suggest.

Some of these effects have received a great deal of attention in the psychological literature, if not the philosophical literature, though not in the context of fake news specifically. There is a great deal of evidence that people sometimes acquire beliefs about the world outside the story from fictions in a way that directly reflects the content of the claims made in the fiction,<sup>3</sup> and there is a great deal of evidence that people are surprisingly unresponsive to corrections of false claims once they come to accept them. To a large extent, I simply review this evidence here and show how it applies in the context of fake news. In addition, though, I will argue for a claim that has not previously been defended: consuming fake news shapes our further beliefs and our behavior even in those (many) cases in which we do not acquire

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<sup>2</sup> It is difficult to find an explicit defence of this claim. I suspect, in fact, it is taken for granted to such an extent that it does not occur to most writers that it needs a defence. In addressing the dangers of fake news, however, they focus exclusively or near exclusively on the extent to which people are duped by it (see, for instance, Silverman & Singer-Vine 2016; McIntye 2015). Lynch (2016) expands the focus of concern slightly, from being taken in by fake news to becoming doubtful over its truth. On the other hand, the solution they propose for the problem is better fact checking and increased media literacy (Orlando 2017; Holcombe 2017).

<sup>3</sup> We acquire many beliefs about the world from reading fiction, but only some of those beliefs *directly* reflect the content of the claims made in the fiction. For example, from reading *Tristram Shandy* I might learn that 18<sup>th</sup> century novels are sometimes rather long, that they could be surprisingly bawdy and (putative) facts about Wellington's battles. Only the last belief is a belief about the world outside the fiction that directly reflects the contents of the claims made in the fiction. The first reflects the formal properties of the novel; the second reflects its content but not directly (the book neither claims, nor implies, *that 18<sup>th</sup> century novels could be bawdy*).

false beliefs directly from the fiction. The representations we acquire from fake news play some of the same roles in subsequent cognition that false beliefs would play.

I will not argue that the costs arising from the consumption of fakes news outweigh the benefits. The claim that the media should report fake news when it is retailed by central figures on the political landscape is a compelling one, and I do not aim to rebut it. However, showing that the knowing consumption of fake news is itself a serious problem is a significant enough goal to justify a paper. If I am right that the costs of consumption are far from trivial, that should serve as an impetus for us to formulate proposals to minimize those costs.

### **Against the Naïve View**

The naïve view assumes that mental representations are *reliably* and *enduringly* categorized into kinds: beliefs, desires, fantasies and fictions, and that we automatically or easily reclassify them given sufficient reason to do so. On this picture, fake news is a problem when it results in representations that are categorized as beliefs. That problem is averted by ensuring that the representations we form as we consume fake news are not wrongly categorized. We will then not access them when we self-ascribe beliefs and they will not guide our behavior in the manner characteristic of beliefs. Sometimes, of course, we make a mistake and are misled, and a false claim comes to be categorized as a belief. But the problem may be solved by a retraction. All going well, encountering good evidence that a claim is false results in its reclassification.

This naïve view is false, however. The available evidence suggests that mental representations are not reliably and enduringly stored into exclusive categories. Instead, the self-ascription of beliefs is sensitive to a range of cues, internal and external, in ways that can transform an internal state from a fantasy into a belief.

Minded animals continually form representational states: representations of the world around them and (in many cases) of internally generated states (Cheney & Seyfarth 2007; Camp 2009). These representations include beliefs or belief-like states, desires, and, in the human case at least, imaginings (which are presumably generated because it is adaptive to be able to simulate counterfactuals). These representations have certain causal powers in virtue of the kind of states they are; beliefs, for instance, are apt to be used as premises in reasoning and in systematic inference (Stich 1978; AU 2015). These representations include many subpersonal states, to which the language of commonsense psychology apply only uneasily if at all. For ease of reference, I will call these states *ground level representations*.

When we ascribe states to ourselves, these representations powerfully shape the kind and content of the attitude ascribed. It remains controversial how exactly this occurs, but there is widespread agreement that cues—Like questions probing what we believe—cause the activation of semantically related and associatively linked representations, which guide response (Collins & Loftus 1975; Buckner 2011). Perhaps we recall a previous conversation about this topic, and our own conclusion (or verbal expression of the conclusion). Perhaps we have never thought about the topic before, but our ground level representations entail a

response. The person may generate that response effortfully, by seeing what their representations entail, or automatically.

Belief self-ascription is powerfully shaped by ground-level representations, in ways that make it highly reliable much of the time. Beliefs entailed by these representations, or generated by recalling past acts of endorsement, are likely to be very stable across time: asked what she believes about a topic at  $t$  or at  $t1$ , for any arbitrary values of  $t$  and  $t1$ , the person is likely to ascribe the same belief (of course, if the person is asked at  $t$  and  $t1$ , she is even more likely to ascribe the same belief because she may recall the earlier episode). But often the representations underdetermine how we self-ascribe. In those circumstances, the belief may be unstable; we might self-ascribe  $p$  were we asked at  $t$  but  $\sim p$  were we asked at  $t1$ . When ground-level representations underdetermine beliefs, we come to ascribe them by reference to other cues, internal and external.

Consider cognitive dissonance experiments; for example, the classic essay writing paradigm. Participants are assigned to one of two groups. One group is paid to write an essay defending a claim that we have good reason to think is counter-attitudinal (college students may be paid to defend the claim that their tuition fees should rise, for instance), while the other group is *asked* to defend the same claim. (Participants in this arm may be paid a small amount of money as well, but compliance is secured by mild situational pressure; essentially appealing to their better nature. It is essential to the success of the manipulation that participants in this arm see themselves as participating voluntarily). The oft-replicated finding is that this paradigm affects self-ascribed beliefs in those who defended the thesis under mild situational pressure, but not those paid to write the essay (see Cooper 2007 for review). That is, the former, but not the latter, are significantly more likely to assert agreement with the claim they defended in the essay than matched controls.

These data are best explained by the hypothesis that belief self-ascription is sensitive to cues about our own behavior (Bem 1967; Carruthers 2011). Participants in the mild pressure arm of the experiment are unable to explain their own behavior to themselves (since they take themselves to have voluntarily defended the view) except by supposing that they wanted to write the essay, and that, in turn, is evidence that they believe the claim defended. Participants in the other arm can instead explain their behavior to themselves by reference to the payment they received. In this case, external cues swamp the evidence provided by ground level representations: college students can be expected to have ground-level representations that imply the belief that their tuition should not rise (indeed, control participants overwhelmingly profess that belief).

Choice blindness experiments (Johansson et al. 2005; Hall, Johansson and Strandberg 2012) provide further evidence that we self-ascribe mental states using evidence provided by our own behavior, together with the ground-level representations. In these paradigms, participants are asked to choose between options, with the options represented by cards. The card selected is then placed in a pile along with all the others chosen by that participant. In the next phase of the experiment, the cards are shown to the participants and they are asked why they chose the options they did. Using sleight of hand, however, the experimenters substitute some unchosen options for chosen ones. On most trials, the participants fail to detect the substitutions and proceed to justify their (apparent) choice. Choice blindness has been demonstrated even with regard to real policy choices in a

forthcoming election, and even among the respondents who identified themselves as the most committed on the issues (Hall et al. 2013). While these respondents were more likely to detect the substitution, around one third of them defended policies they had in fact rejected.

Again, a plausible explanation of these data is that respondents self-ascribed belief via interpretation. The card they were presented with was drawn from the pile that represented their choices, they believed, so it was evidence that they actually agreed the policy they had were now asked to justify. Of course, the card was not their only evidence that they agreed with the policy. They also had internal evidence; recall of previous discussions about the policy or related issues, of previous experiences related to the policy, of principles to which they take themselves to be committed, and so on. Because they have these other sources of evidence, the manipulation was not effective in all cases. In some cases, individuals had strong evidence that they disagreed with the policy, sufficient to override the external evidence. But in some cases the ground-level representations underdetermined belief ascription (despite their taking themselves to be strongly committed to their view) and the external cue was decisive.

The large literature on processing fluency provides yet more evidence against the naïve view. Processing fluency refers to the subjective ease of information processing. Psychologists typically understand processing fluency as an experiential property: a claim is processed fluently when processing is subjectively easy (Oppenheimer 2008). It may be that fluency is better understood as the *absence* of an experiential property: that is, a claim is processed fluently just in case there is no experience of disfluency. Disfluency is a metacognitive signal that a claim is questionable and prompts more intensive processing of the claim (Alter, Oppenheimer, Epley & Eyre 2007; Thompson; Prowse Turner & Pennycook 2011). When the claim is processed fluently, on the other hand, we tend to accept it (Reber & Schwarz 1999; Schwartz, Newman & Leach, in press). When a claim is processed fluently, it is intuitive, and the strong default is to accept intuitive claims as true: we self-ascribe belief in claims that are intuitive for us.

(Dis)fluency may be induced by a variety of factors. The content of the claim plays a significant role in the production of disfluency: if the claim is inconsistent with other things that the agent believes and which she is likely to recall at the time (with claim content as a cue for recall), then she is likely to experience disfluency. Thus, the content of ground-level representations and their entailments help to shape fluency. But inconsistency is just one factor influencing fluency, because processing may be more or less difficult for many reasons, some of them independent of claim content. For instance, even the font in which a claim is presented influences processing ease: those presented in legible, high-contrast, fonts are more likely to be accepted than those presented in less legible fonts, even when the content of the claim is inconsistent with the person's background knowledge (Song & Schwarz 2008).

The effects of disfluency on belief ascription may be significant. Consider the influence of retrieval effort on claim acceptance. Schwartz et al. (1991) asked participants to recall either 6 or 12 times on which they had acted assertively. Participants who recalled 12 occasions rated themselves as less assertive than those who recalled 6 instances; presumably the

difficulty of recalling 12 occasions was implicitly taken as evidence that such occasions were few and far between, and trumped the greater amount of evidence of assertive behavior available. How these cues are interpreted is modulated by background beliefs. For instance, telling experimental participants that effortfulness of thought is an indicator of its complexity, and therefore of the intelligence of the person who experiences it, may temporarily reverse the disposition to take the experience of effortfulness as a cue to the falsity of a claim (Briñol, Petty & Tormala 2006).

A final example: evidence that a view is held by people with whom they identify may powerfully influence the extent to which participants agree with it. The effect may be sufficiently powerful to overwhelm strong ground-level representations. Maoz et al. (2002) found that attitudes to a peace proposal among their Israeli sample were strongly influenced by information about who had formulated it. Israeli Arabs were more likely to support the proposal if it was presented as stemming from Palestinian negotiators than from the Israeli sides, while Israeli Jews were more likely to support it if it was presented as stemming from the Israeli side. Cohen (2003) found that attitudes to welfare policies were more strongly influenced by whether they were presented as supported by House Democrats or House Republicans than by policy content, with Democrats (for example) supportive of quite harsh policies when they were presented as stemming from the side they identified with.

These data are probably explained by a similar mechanism to the choice blindness data. Whereas in the latter people ascribe a belief to themselves on the basis of evidence that they had chosen it, in these experiments they ascribe a belief to themselves on the basis of evidence that people (that they take to be) like them accept it. The effect is powerful enough to override content-based disfluency that may have arisen from consideration of the details of the policies under consideration. It may be that a mechanism of this kind helps to explain why his supporters are not bothered by some of Donald Trump's views we might have expected them to find troublesome. Until recently, Russia was regarded as extremely hostile to the United States by most conservative Americans, but Trump's wish for a friendly relationship has softened their views on the issue.

All this evidence (which is only a subset of the total evidence that might be cited) powerfully indicates that belief ascription does not work the naïve view suggests. That, in turn, indicates that representations are not (always) stored neatly, such that they can be compartmentalized from one another: they are not stored reliably and enduringly into kinds. Ground-level representations often underdetermine the beliefs we come to hold. Even when they might reasonably be expected to strongly imply a belief (*that my tuition fees should not rise, that our welfare policies should be supportive and not harsh*, and so on), contextual cues may swamp them. Even previous endorsement of a claim may not insulate it from revision. Using the classic essay writing paradigm, Bem & McConnell (1970) showed that explicitly asking participants about the topic a week beforehand, and recording their responses in a manner that linked responses to individuals, did not prevent belief revision. Participants denied that their beliefs had changed at all.

All this evidence (and a great deal more) indicates that mental states are not exhaustively and exclusively categorized into kinds, such that we can reliably self-attribute them via self-scanning. While there is no doubt that we self-ascribe beliefs in ways that are pervasively and powerfully shaped by the properties of our ground-level representations, these

representations are often leave a great deal of leeway for self-ascription. Ground level representations may come to play all kinds of different roles in our cognition and behavior, regardless of how they were acquired.

That, in turn, suggests that the consumption of fiction may lead to the formation of representations that subsequently come to be accepted by the person whose representation they are, even when they did not take the source to be factual. That prediction is, in fact, a retrodiction: there is already good evidence that people come to believe claims made in texts they recognize as fictions.

### **Breaking Through the Fourth Wall**

Let ‘fiction’ refer to two categories of sources of false information. One category is made up of information sources that are either explicitly presented as false (novels, *The Onion* and so on) and sources that are taken by consumers to be false. The latter conjunct is subject-relative, since one person may read *The National Inquirer* believing it is accurate while another may read it for entertainment value despite believing it to be false. The second category is information consumed as true, but which is subsequently corrected. Both kinds of fiction have effects on agents’ mental states that cannot be accounted for on the naïve view.

A great deal of the information we acquire about the world beyond our direct experience we acquire from fiction. In many cases, such acquisition is unproblematic. Someone may know, for instance, *that New York has a subway system* solely on the basis of having watched films set in the city. Since fictions usually alter real world settings only when doing so is germane to their plots, the inference from film to real world is very often reliable. We may also acquire beliefs about human psychology from fictions in a way that is unproblematic (Friend 2006). However, we come to acquire beliefs from sources we take to be fictional in a way that we wouldn’t, and shouldn’t, endorse on reflection.

The relevant experiments have typically proceeded as follows. In the experimental conditions, participants read a version of a fictional story in which assertions are made about the world outside the story. The stories differ in the truth of these statements, so that some participants get a version in which a character states, for example, that mental illness is contagious while others get a version in which they state that mental illness is not contagious (control subjects, meanwhile, read a story in which no claims about the target propositions are made). After a filler task, participants are given a general knowledge quiz, in which they are asked about the target propositions (e.g., is mental illness contagious?) The participants who read a version containing the false assertion are significantly more likely to assert it than those who read a version containing the true assertion or who read the control version (this description is based on Prentice, Gerrig & Bailis 1997; Wheeler, Green & Brock 1999 report a replication). Other studies produced the same results using a slightly different methodology; rather than having the true or false propositions asserted, they are mentioned as peripheral narrative details (e.g. Marsh & Fazio 2006). Again, participants are significantly more likely to accept claims presented in the fiction as true in the real world.



More troublingly still, we may be *more* inclined to accept claims made in a fiction than identical claims made in a passage presented as factual (Prentice & Gerrig 1999; Strange 2002). Moreover, factors known to reduce acceptance of claims presented as factual do not significantly reduce reliance on claims presented as fictional. Need for cognition, the personality trait of being disposed to engage in effortful thought, is protective against false information in other contexts, but not in the fictional context (Strange 2002). Even when participants are warned that the stories may contain false information (Marsh & Fazio 2006) or when stories are presented slowly to allow for intensive processing (Fazio & Marsh 2008), acceptance of false claims does not decrease.

We are much less likely to acquire false information from fantastic fiction (Rapp et al. 2014), probably because its claims are not easily integrated with our existing model of the world. But when fictions are consistent with what we know of the world, false beliefs are often acquired (of course fake news is designed to be compatible with what we know about the real world: It concerns real people, often acting in line with their real motivations and in ways that are generally possible). Worse, when false beliefs are acquired people may forget their source: information acquired from fiction is sometimes subsequently misattributed to reliable sources (Marsh, Cantor & Brashier 2016), or held to be common knowledge. This may occur even when the claim is in fact inconsistent with common knowledge (Rapp 2016).

We are therefore at risk of acquiring false beliefs from fiction; when those fictions are fake news, the beliefs we acquire may be pernicious. However acquired, these beliefs may prove resistant to correction. In fact, corrections rarely if ever eliminate reliance on misinformation. Sometimes agents rely on the misinformation subsequent to correction because they reject the correction. Sometimes they accept the correction and yet continue to act on the corrected belief. I begin with the former kind of case.

The phenomenon of *belief perseverance* has long been known to psychologists. Classical demonstrations of belief perseverance involve giving people feedback on well they are doing at a task, leading them to form a belief about their abilities. They are subsequently informed that the feedback was scripted and did not track their actual performance. This information undercuts their evidence for their belief but does not lead to its rejection: participants continue to think that they are better than average at the task when they have been assigned to the positive feedback condition (Ross, Lepper & Hubbard 1975). Wegner, Coulton, & Wenzlaff (1985) demonstrated that telling people beforehand that the feedback would be unrelated to their actual performance—i.e., fictitious—did not prevent it from leading to beliefs that reflected its contents.

Research using different paradigms has demonstrated that even when people remember a retraction, they may continue to cite the retracted claim in explaining events (Fein, McCloskey, & Tomlinson 1997; Ecker, Lewandowsky, Swire, & Chang 2011). In fact, corrections sometimes backfire, leaving agents more committed to false claims than before. The most famous demonstration of the backfire effect is Nyhan and Reifer (2010; see Schwartz et al. 2007 for an earlier demonstration of how the attempt to debunk may increase belief in the false claim). They gave participants mock news articles, which contained (genuine) comments from President Bush implying that Iraq had an active weapons of mass destruction program at the time of the US invasion. In one condition, the article contained an authoritative correction, from the (also genuine) congressional inquiry into Iraqi WMDs

held subsequent to the invasion. Participants were then asked to indicate their level of agreement with the claims that Iraq had stockpiles of WMDs and an active WMD development program at the time of the invasion. For conservative participants, the correction backfired: they expressed higher levels of disagreement with the claim than conservative peers whose false belief was not corrected. Since Nyhan and Reifler's initial demonstration of the backfire effect, these results have been replicated multiple times (see Peter & Koch 2016 for review).<sup>4</sup>

Even when a correction succeeds in changing people's professed beliefs, they may exhibit a behavioural backfire. Nyhan, Reifler, Richey & Freed (2014) found that correcting the myth that vaccines cause autism was effective at the level of belief, but actually decreased intention to have one's children vaccinated among parents who were initially least favourable to vaccines. Nyhan and Reifler (2015) documented the same phenomenon with regard to influenza vaccines. Continued reliance on information despite explicit acknowledgement that it is false is likely to be strongest with regard to emotionally arousing claims, especially those that are negatively valenced (e.g., arousing fear or disgust). There is extensive evidence that children's behavior is influenced by pretence. In the well-known box paradigm, children are asked to imagine that there is a fearsome creature in one box and a puppy in another. Young children are quick to acknowledge that the creatures are imaginary, but prefer to approach the latter box than the former (Harris et al. 1991; Johnson and Harris 1994). They may exhibit similar behavior even when the box is transparent and they can see it is empty (Bourchier and Davis 2000; see Weisberg 2013 for discussion of the limitations of this

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<sup>4</sup> It is possible that the backfire effect is very much less common than many psychologists fear. Wood and Porter (2016) conducted 4 experiments with a large number of participants, and failed to produce a backfire effect for any item other than the Iraq WMDs correction. It is unclear, however, whether these experiments provide strong evidence against the backfire effect. First, Wood and Porter presented the claim to be corrected and the correction together, and probed for corrections immediately afterwards. The backfire effect seems to be strongest after a delay of at least several days (Peter and Koch 2016). The evidence may also be compatible with there being a strong backfire effect for corrections given at around the same time judgments are made. The reason is this: Wood and Porter deliberately aimed mainly at correcting a false impression that might arise from the (genuine) words of the politicians they aimed to correct, not at correcting the literal meaning of their claims. For example, they quote Hillary Clinton as saying "Between 88 and 92 people a day are killed by guns in America. It's the leading cause of death for young black men, the second leading cause for young Hispanic men, the fourth leading cause for young white men. This epidemic of gun violence knows no boundaries, knows no limits, of any kind." The correction given was: "In fact, according to the FBI, the number of gun homicides has fallen since the mid 1990s, declining by about 50% between 1994 and 2013." Subjects were asked to agree or disagree on a five-point scale with "The number of gun homicides is currently at an all-time high". Answering "disagree" to this question—that is, giving the answer that Wood and Porter take to be supported by the "correction"—is compatible with thinking that everything Clinton said was true (because her claims and the correction are logically compatible). Accepting the "correction" does not require one to disagree with someone with whom partisans might identify. It may be that the backfire effect concerning judgments made without the opportunity for memory dissociations is limited, or strongest, with regard to, directly conflicting statements. Bolstering this interpretation of the results reported by Wood and Porter is the fact that they replicated the backfire effect for the original WMDs in Iraq case, and subsequently eliminated the backfire effect by giving respondents an option which allowed them to accept the correction without contradicting the literal meaning of President Bush's words. Finally, it should be noted that Wood and Porter's corrections did not eliminate reliance on false information. The corrections they provided still left the most partisan quite firmly convinced—though somewhat less than they would otherwise have been—that the false implication was in fact true. Thus, they did not demonstrate the "steadfast factual adherence" of the title of their paper.

research). Emotionally arousing claims are also those that are most likely to be transmitted (Peters, Kashima & Clark 2009). Of course, fake news is often emotionally arousing in just these ways. Such news can be expected to proliferate and to affect behavior.

Despite our knowing that we are consuming fiction, its content may affect our beliefs in ways that cannot be accounted for by the naïve view. Perhaps worse, these contents may continue to influence our beliefs and (somewhat independently) our behavior if and when they are retracted. This evidence indicates that when we acquire ground level representations from fiction, recognizing that the source is fictional and exposure to fact checking may not prevent us from acquiring false beliefs that directly reflect its contents, or from having our behavior influenced by its contents. Even for sophisticated consumers, the consumption of fiction may be risky. This is especially so for fake news, given that it has features that make fictional transfer more likely. In particular, fake news is realistic, inasmuch as it portrays real people, acting in line with their genuine motivations in circumstances that closely resemble the real world and it is emotionally arousing, making it more memorable and more likely to be transmitted and repeated. If it is in addition absorbing, we are especially likely to acquire false beliefs from it.

### **How Fake News Parasitizes Belief and Behavior**

When we consume information, we represent the events described to ourselves. These representations might be usefully thought of as ways a possible world might be. Once these representations are formed, they may persist. In fact, though we may forget such information rapidly, some of these representations are very long-lasting and survive retraction: coming to accept inconsistent information does not lead to older representations being overwritten. These representations persist, continuing to shape the beliefs we ascribe to ourselves, the ways in which we process further information, and our behavior.

As we saw above, we acquire beliefs that directly reflect the content of the fictions we consume. We may therefore expect to acquire beliefs from that subset of fiction that is fake news. One way this may occur is through memory-based mechanisms. Sophisticated readers may be especially wary of any claim that they recall came from a fake news site, but source knowledge and object knowledge are stored separately and may dissociate; readers may fail to recall the source of the claim when its content comes to mind (Pratkanis et al. 1988; Lewandowsky et al. 2012). Worse, they may misattribute the claim to a reliable source or even to common knowledge (Marsh, Cantor & Brashier 2016; Rapp 2016). These effects are particularly likely with regard to details of the fake news story that are apparently peripheral to the story, about which the exercise of vigilance is harder and likely less effective. If the person does come to ascribe the belief to themselves, they will then have further evidence for future self-ascriptions: that very act of self-ascription. The belief will now resist disconfirmation.

We may also acquire beliefs from fiction through fluency effects. Repetition of a claim powerfully affects fluency of processing (Begg, Anas & Farinacci 1992; Weaver et al. 2007). This effect may lead to the agent accepting the original claim, when she has forgotten its source. Even when repetition is explicitly in the service of debunking a claim, it may result in higher levels of acceptance by promoting processing fluency (Schwartz et al. 2007). The influence of repetition may persist for months (Brown & Nix 1996), increasing the

probability that the source of a repeated claim may be forgotten. All these effects may lead to even careful consumers coming to accept claims that originate in fake news sites, despite a lack of evidence in their favour. Because the claim will be misattributed to common knowledge or a reliable source, introspection cannot reveal the belief's origins.

There are steps we can take to decrease the likelihood of our acquisition of false claims from fiction, which may form the basis of techniques for decreasing transfer from fake news too. Online monitoring of information, in order to tag it as false as soon as it is encountered, reduces acquisition of false information (Marsh & Fazio 2006). While these steps likely would improve somewhat effective, there are reasons to think that nevertheless a significant problem would persist even with their adoption. First, in near optimal conditions for the avoidance of error, Marsh and Fazio found that the manipulation reduced, rather than eliminated, the acquisition of false claims from fiction. Second, the measures taken are extremely demanding of time and resources. Marsh and Fazio required their participants to make judgments about every sentence one by one, before the next sentence was displayed. More naturalistic reading is likely to produce the kind of immersion that is known to dispose to the acquisition of false claims from fiction (Green & Brock 2000; Lewandowsky et al. 2012). Third, Marsh and Fazio measured the extent of acquisition of false claims from fiction soon after the fiction was read and the error tagged, thereby greatly reducing the opportunity for dissociations in recall between the claim content and the discounting cue. We should expect a sleeper effect, with an increase of acquisition over time. Finally, Marsh and Fazio's design can be expected to have little effect on the fluency with which the claims made were processed. As we have seen, repetition increases fluency. But many of the claims made in fake news are encountered multiple times, thereby increasing processing fluency and promoting an illusion of truth.

On the other hand, many sophisticated consumers of fake news come to it with fiercely partisan attitudes toward the claims made. They expect to encounter not merely false claims, but glaringly and perniciously false claims. It is reasonable to expect this attitude to be protective.<sup>5</sup> Moreover, it should be obvious that we routinely encounter fake news or egregiously false claims without coming to believe them. When we think of such claims (about the Bowling Green attack, for instance), we think of false claims we recognize *as* false. Confidence that we can consume fake news without acquiring false beliefs from it should be tempered by recognition of the impossibility of identifying candidate beliefs, since we are unable to identify false claims we take to be true and we are likely to misattribute claims we do acquire. Nevertheless, there is no doubt that we routinely succeed in rejecting the claims we read on such sites. But that doesn't entail that these claims don't have pernicious effects on our cognition and subsequent behavior.

There is good reason to believe that even when we succeed in rejecting the claims that we encounter in fake news, those claims will play a role in our subsequent belief acquisition in

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<sup>5</sup> I owe this point to Jason D'Cruz. It should be noted that there is to my knowledge no data on whether a partisan attitude of the kind described is protective; given that the discoveries made by cognitive science are sometimes counterintuitive, we cannot be very confident that the reasonable presumption that it is protective is true.

ways that reflect their content. Even when they are not accepted, claims are available to shape beliefs in a similar (and for some purposes identical) kind of way as those that the person accepts. As noted above, successfully retracted claims are not overwritten and their continuing influence on cognitive processing has been demonstrated. O'Brien, Cook & Guéraud (2010) found that information inconsistent with *retracted* claims was processed more slowly than other information, indicating that it continues to play an active role in how the text is comprehended, despite the fact that the readers fully accepted the retraction. Representations like these may shape how related information is processed, even (perhaps especially) when it is not explicitly recalled. There are at least three pathways whereby this may occur: one fluency-based, one via the activation of related information, and one through the elicitation of action tendencies.

First, the fluency-based mechanism: An agent who succeeds in recalling that the claim *that Hillary Clinton is a criminal* stems from a fake news site and therefore does not self-ascribe belief in the claim may nevertheless process claims like *Hillary Clinton is concerned only with her own self-interest* more fluently, because the semantic content of the first representation makes the second seem more familiar and therefore more plausible. The more familiar we are with a false claim, even one we confidently identify as false, the more available it is to influence processing of semantically related claims and thereby fluency. Independent of fluency, moreover, the activation of semantically or associatively related information plays a characteristic role in cognitive processing. Representations prime other representations, and that biases cognition. It influences what else comes to mind and therefore what claims come to be weighed in deliberation (negative false claims about Clinton may preferentially prime the recall of negative true claims about her—say, that she voted in favor of the war in Iraq—and thereby to influence deliberation about her). Without the false prime, the person may have engaged in more even-handed deliberation. Perhaps priming with fake news might result in her deciding to abstain from voting, rather than support ‘the lesser evil’. Sufficiently prolonged or repeated exposure to fake news about a person might result in the formation of implicit biases against her, in the same way in which, plausibly, implicit biases against women or minorities arise, at least in part, from their negative portrayal in explicitly labelled fictions (Kang 2012).

While it is unclear whether the mechanism is fluency-based or content-based, there is experimental evidence that suggests that claims known from the start to be false play a role in information processing. For instance, Gilbert, Tafarodi, and Malone (1993) had participants read crime reports, which contained some information marked (by font color) as false. In one condition, the false information was extenuating; in the other, it was exacerbating. Participants who were under cognitive load or time pressure when reading the information judged that the criminal should get a longer sentence when the false information was exacerbating and a shorter sentence when the false information was extenuating. At longer delays, it is likely that those who were not under load would be influenced by the information, even if they continued to recognize it *as* false. Its availability would render related information accessible and more fluently processed, or activate it so that it played its characteristic role in processing, affecting downstream judgments.

Fictions also elicit action tendencies. As we saw above, scenarios that children recognize to be imaginary affect how they behave. They are, for instance, reluctant to approach a box in which they had imagined there was a monster, despite being confident that it was only make-

believe (Harris et al. 1991; Johnson and Harris 1994), and even when they can see for themselves that the box is empty (Bourchier and Davis 2000). There is no reason to think that the kinds of effects are limited to children. Many people in fact seek out fiction at least partly *in order to* experience strong emotions with associated action tendencies. We might go to the cinema to be moved, to be scared, to be exhilarated, all by events we know to be fictional; these emotions dispose us, at least weakly, to respond appropriately. We may cry, flinch away, even avert our gaze, and these action tendencies may persist for some time after the film's end.<sup>6</sup>

The offline stimulation of mechanisms for simulation and the elicitation of action tendencies is pleasurable and may even be adaptive in highly social beings like us. It is also risky. When we simulate scenarios we know (or should know) to be false, we elicit action tendencies in ourselves that may be pernicious. Fake news might, for instance, retail narratives of minorities committing assaults. We may reject the content of these claims, but nevertheless prime ourselves to respond fearfully to members of the minority group. Repeated exposure may result in the formation of implicit biases, which are themselves ground-level representations. These representations, short or long term, play a distinctive role in cognition too, influencing decision-making.

## Conclusion

In this paper, I have argued that fake news poses dangers for even its sophisticated consumers. It may lead to the acquisition of beliefs about the world that directly reflect its content. When this happens, we may misattribute the belief to a reputable source, or to common knowledge. Beliefs, once acquired, resist retraction. We do better to avoid acquiring them in the first place.

I have conceded that we routinely succeed in rejecting claims made by those who purvey fake news. That may suggest that the threat is small. Perhaps the threat of belief acquisition is small; I know of no data that gives an indication of how often we acquire such beliefs or how consequential such beliefs are, and introspection is an unreliable guide to the question. I have also argued, however, that even when we succeed in consuming fake news without coming to acquire beliefs that directly reflect its content (surely the typical case), the ground level representations will play a content-reflecting role in our further cognition, in ways that may be pernicious. Cognitive sophistication may not be protective against fake news. Need for cognition (a trait on which academics score very highly) is not protective against the acquisition of beliefs from fiction (Strange 2002). There is also evidence that higher levels of education and of reflectiveness may correlate with higher levels of credulousness about

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<sup>6</sup> Plausibly, these phenomena arise because fictions parasitize—or exapt—mechanisms designed for behavioural control. That is, the creation and consumption of fictional narrative utilizes machinery that evolved for assessing counterfactuals in the service of decision-making. Cognitive scientists refer to our capacity to reconstruct the past and construct the future as mental time travel (see Suddendorf & Corbalis 2008 for review of supporting evidence). This machinery is adaptive, because it allows us to utilize stored knowledge to prepare for future contingencies (Suddendorf, Addis & Corbalis 2011). It is this machinery, used offline, which is used for the simulation of counterfactuals and the construction of fictions for entertainment purposes. Because this machinery is designed to prepare us to respond adaptively, it is closely linked to action tendencies.

claims that agents want to believe. For example, higher levels of education among Republicans are associated with higher levels of belief that Obama is a Muslim, not lower (Lewandowsky et al. 2012), and with higher degrees of scepticism toward climate change (Kahan 2015). This may arise from what Taber & Lodge (2006) call the sophistication effect, whereby being more knowledgeable provides more ammunition with which to counter unpalatable claims.

I have not argued that the dangers of fake news outweigh the benefits that may arise from reading it. Perhaps these benefits are sufficient such that its consumption is all things considered justifiable. This paper is a first step toward assessing that claim. There is a great deal more we need to know to assess it. For instance, we have little data concerning the extent to which the partisan attitude of those people who consume fake news in order to discover just how it is false may be protective. Showing that the dangers are unexpectedly large is showing that gathering that data, as well as assessing the benefits of the consumption of fake news, is an unexpectedly urgent task.<sup>7</sup>

**Contact details: neil.nl.levy@gmail.com**

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