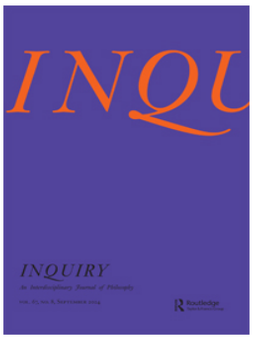

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C.J. Oswald

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Fake news & bad science journalism: the case against insincerity

C.J. Oswald

Corcoran Department of Philosophy, University of Virginia, Charlottesville, VA, USA

ABSTRACT

Philosophers and social scientists largely agree that fake news is not just necessarily untruthful, but necessarily insincere: it's produced either with the intention to deceive or an indifference toward its truth. Against this, I argue insincerity is neither a necessary nor obviously typical feature of fake news. The main argument proceeds in two stages. The first, methodological step develops classification criteria for identifying instances of fake news. By attending to expressed theoretical and practical interests, I observe how our classification practices turn on worries about fake news's unique political-epistemic risks. From this, I argue (i) theories of fake news should capture independent mechanisms that realise these risks and (ii) the manifestation of them suffices for classifying a news story as fake news. The second step applies the classification criteria to bad science journalism. I argue the systematic epistemic faults in bad science journalism manifest the same political-epistemic risks we see in fake news, which suffices to justify classifying it as fake news. But since such faults aren't plausibly attributed to its propagators being insincere, insincerity doesn't function independently as a mechanism for realising fake news's political-epistemic risks. Thus, I conclude, we should exclude insincerity from our accounts of the phenomenon.

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1. Introduction

A widely shared view among philosophers and social scientists is that the fakeness of fake news involves not just falsity but an absence of good faith. In other words, fake news is necessarily both untruthful and insincere. While the details of prominent accounts differ, we nevertheless see fake news frequently conceptualised in terms of an indifference

CONTACT C.J. Oswald cjo4ze@virginia.edu Corcoran Department of Philosophy, University of Virginia, PO Box 400780, Charlottesville, VA, USA 22903

toward the truth (bullshit) or intentional deception.[1] This, supposedly, is what separates fake news from merely false or misleading news. Indeed, theorists fear that unless we take insincerity to be a necessary feature of fake news, all untruthful news constitutes fake news, including honest journalistic errors. However, the decisiveness of this overgeneralisation worry is more often assumed than argued for. Whether insincerity is a necessary, or even typical, feature of fake news deserves more careful consideration.

Contrary to this received view then, I argue here against including insincerity in our theories of fake news. The main argument proceeds in two steps. First, I'll lay some methodological groundwork. Unlike most in this debate, my priority isn't to supply a definition of 'fake news'.[2] I instead aim to articulate classification criteria that would enable us to identify instances of fake news without positing constitutive features of it. In doing so, I'll highlight how our classification practices, and corresponding theories, turn on worries about the agreed-on dangers fake news poses for democratic discourse and decision-making – what I'll call fake news's political-epistemic risks. These observations have two methodological upshots. First, a theory of fake news should capture those features that function independently as mechanisms for realising these risks. Second, exhibiting these risks gives us sufficient reason to classify a news story as fake news (Section 2). For the second step, I look to bad science journalism as a case study. While often excoriated for exhibiting a host of epistemic vices – such as inaccuracy, hyperbole and oversimplification – bad science journalism isn't typically entertained as a candidate of being fake news. But I'll argue that these epistemic faults deliver sufficiently similar political-epistemic risks to those inextricably associated with fake news. Coupled with the methodology, this observation will license us to classify bad science journalism as fake news. Yet bad science journalism rarely seems insincere. This absence of insincerity thus indicates that it doesn't function as a mechanism for realising fake news's political-epistemic risks, and

[1]For deception-based accounts, see Damstra et al. (2021), Egelhofer and Lecheler (2019), Gelfert (2018), Rini (2017) and Tandoc Jr. (2019). For bullshit-oriented accounts, see Croce and Piazza (2021), Mukerji (2018) and Elisabetta Galeotti and Meini (2022). For a hybrid view, see Jaster and Lanius (2021). For accounts that reject insincerity altogether, see Bernecker (2021), Grundmann (2020) and Pepp, Michaelson, and Sterken (2019).

[2]In what follows, I treat the definitional project as pertaining to the English term, 'fake news' rather than the corresponding concept FAKE NEWS. This is mostly for ease of explanation. If preferred one can replace my talk of terms with talk of concepts without loss.

so shouldn't be considered a constitutive (or even typical) feature of the phenomenon (Section 3).[3]

In the remainder of the paper, I'll address complications to the argument. The first family of criticisms contends bad science journalism is insincere, either in being indifferent toward the truth or intentionally deceptive. I'll argue against attributing either form of insincerity to bad science journalists (Section 4). In contrast, the second family of criticisms targets the possibility of my framework overgeneralising and the utility of the fake news term as a result. I won't deny the counterintuitive consequences of the view. Instead, I'll contend its theoretical virtues outweigh this cost since it illuminates the lack of political-epistemic difference between fake news and bad journalism generally (Section 5).

2. Motivating fake news theorising – the political-epistemic risks of fake news

2.1. Methodological preliminaries

What does it mean to describe fake news as necessarily untruthful and insincere? Drawing from David Lanius and Romy Jaster, I'll operationalise these notions as follows (Jaster and Lanius 2021, 21–23):

- *Untruthfulness*: A speaker's testimony is untruthful if and only if it is either literally false or misleading.
  - (a) *Literal Falsity:* A speaker's testimony is literally false if and only if the propositional contents expressed by the testimonial assertion are false – i.e. it is false in 'what is said' by it.
  - (b) *Misleadingness*: A speaker's testimony is misleading if and only if it presupposes or implicates false propositions – i.e. it is false in what it pragmatically conveys
- *Insincerity*: A speaker's testimony is insincere if and only if it is either intentionally deceptive or bullshit.
  - (a) *Intentional Deception*: A speaker's testimony is intentionally deceptive if and only if, in uttering it, the speaker intends to proffer untruthful testimony.

[3]Anna Elisabetta Galeotti and Cristina Meini appear to give a similar argument. They argue that scientific misinformation should be classified as fake news, despite lacking an intention to deceive or an explicit lack of concern for the truth (Elisabetta Galeotti and Meini 2022, 708–711). However, they still diagnose many of these cases as lacking some concern for the truth and are grouped together with fake news produced from financial motivations (Elisabetta Galeotti and Meini 2022, 712, 712–713). I therefore categorise them under bullshit-oriented accounts.

(b) *Bullshit*: A speaker's testimony is bullshit if and only if, in uttering it, the speaker is indifferent toward whether it is truthful or untruthful.[4]

How do we determine the extent to which insincerity is a feature of fake news? This will turn on our theoretical aims. On the standard approach, our main objective is to formulate a definition for the term, 'fake news' (Grundmann 2020; Jaster and Lanius 2021). Inspired by paradigmatic cases, theorists propose sets of necessary and sufficient conditions for 'fake news', where the resulting definition purportedly describes (or explains) what it is for something to be fake news. Insincerity thus appears in prominent accounts since paradigmatic cases exhibit it.[5]

Take Pizzagate for example. This story alleged Hillary Clinton and other powerful U.S. political figures, particularly Democrats, were running a child trafficking ring in the basement of a Washington, D.C. pizza parlour. The propagation of this story, among others, has been attributed to Russian actors' attempts at destabilising the 2016 U.S. Presidential election (Jaster and Lanius 2021). Also during this time, a group of Macedonian teenagers produced and spread numerous untruthful stories, including a report that Pope Francis had endorsed Donald Trump for President. But when pressed on their motivations, the group claimed they produced this content only because it was widely consumed by American audiences, thus earning them substantial revenue (Subramanian 2017). In both cases, we clearly see the insincere proffering of untruthful testimony. However, where Russian actors aimed to deceive their audiences, the teenage Macedonians were indifferent to the truth of their testimony. So, it's in light of such considerations that we see definitions prioritising some form of insincerity.

Yet despite their near ubiquity, insincerity-inclusive definitions of 'fake news' haven't entirely escaped scrutiny. For example, Jessica Pepp, Eliot Michaelson and Rachel Sterken offer a different reading on Pizzagate. Focusing on its initial dissemination, they argue this conspiracy theory may have very well been believed by its originator. But, they claim, this

[4]I depart from Jaster and Lanius's labelling of these criteria as lacking truth and lacking truthfulness, respectively. The untruthfulness-insincerity language, I believe, better tracks the language found within the philosophical literature on the epistemology of testimony, assertions and deception and lying.

[5]Insincerity-inclusive accounts differ in prioritising one disjunct over the other, often depending on which cases the account is supposed to capture. Where Pizzagate is best described in terms of intentional deception, the Macedonian fake news farm is better described as bullshit. I adopt Jaster and Lanius's disjunctive conception of insincerity since it allows me to discuss both families of insincerity-inclusive accounts.

shouldn't detract from its status as fake news. After all, the story spread widely (no matter the intentions of these propagators), gaining significant traction online and in mainstream media such that it became a focus of U.S. public discourse (Pepp, Michaelson, and Sterken 2019, 73–74). Thomas Grundmann similarly cites conspiracy theories generally, with him and Sven Bernecker further adding bad algorithm programming, as counterexamples to insincerity-inclusive analyses (Bernecker 2021; Grundmann 2020). Inasmuch then as these examples track our intuitions regarding paradigmatic cases of fake news, we have reason to reject the predominant definitions.

Notice, however, that we've landed ourselves in a dialogical trap. To assess whether insincerity-inclusive definitions succeed, we need to test how they fare against potential counterexamples. But whether these counterexamples succeed depends on our willingness to classify candidate cases as falling in 'fake news's extension. And, unfortunately, critics of insincerity-inclusive definitions haven't fully explained why their proposed counterexamples are actual counterexamples. Mostly, we see appeals to inclinations, intuitions and seemings to justify classifying these cases under 'fake news'.[6] It's therefore open to proponents of insincerity-inclusive definitions to deny these cases constitute fake news: despite appearances, the sincere propagation of conspiracy theories isn't fake news but a related communicative phenomenon. And this might not be seen as a cost since conspiracy theories may eventuate in fake news. With Pizzagate, for example, its propagation could've become fake news upon being spread by insincere actors (Jaster and Lanius 2021, 25).

I suspect the methodological culprit here is the over-reliance on traditional conceptual analysis.[7] By stipulating definitions and centring paradigmatic cases, we forego circumscribing the target phenomenon in a way that doesn't beg the question as to what its constitutive features are. If Pizzagate and the Macedonian fake news farm were the only kinds of cases under consideration, it would be no surprise that fake news came out as necessarily insincere. Consequently, challengers also subscribing to this methodology lack principled, theory-independent explanations for why non-paradigmatic cases are genuine instances of

[6]Grundmann further cites his informal survey of a non-representative audience wherein over 60% agreed that one of his cases constituted fake news (Grundmann 2020, 5 n. 8). Moreover, Pepp, Michaelson and Sterken appeal to Pizzagate being widely spread, a feature of their proposed definition, in defending their intuition (Pepp, Michaelson, and Sterken 2019, 69, 74). I focus on their antecedent intuitions since these are doing the primary justificatory work.

[7]Cf. Grundmann's comments on Carnapian explication (Grundmann 2020, 6–7).

fake news. Assessing the necessity of insincerity for fake news thus requires we go beyond this kind of definitional project.

As a first step in this direction, consider our explanatory and practical aims. Nearly all parties to this debate acknowledge that theorising about fake news should enable us to both identify instances of it and diagnose worrisome political-epistemic trends in democratic life (see, e.g. Grundmann (2020), Jaster and Lanius (2021) and Rini (2017)).[8] Our concern isn't with the definition of 'fake news' alone but the mass-communicative phenomenon it purports to pick out – a phenomenon that poses specific dangers to democratic will-formation and decision-making.[9] The goal is to identify and describe fake news's constitutive, bad-making features and then further explain how these features are implicated in its inherent political-epistemic badness.[10] And this plausibly captures why insincerity and untruthfulness are attractive candidates in the first place. Insofar as insincerity and untruthfulness are bad-making epistemic features of testimony, the badness of fake news could be explained in virtue of exhibiting them.

If then, we're to determine what fake news's constitutive features are, we should ask whether they help explain its political-epistemic badness not merely whether they obtain in paradigmatic cases. Specifically, we should look to whether the candidate features function as independent mechanisms for realising fake news's political-epistemic badness. A candidate feature will function as such a mechanism if it's needed to explain why fake news is bad in the way we care about such that it plays a constitutive role in realising its badness. And the mechanism will be independent only if its normative status isn't parasitic on some other feature. On standard accounts then, fake news is bad *because* it's untruthful and insincere. But if this badness still obtains in the absence of a candidate feature, then it lacks the pertinent explanatory power and should be excluded from our accounts. For example, if it turns out that some candidate instances are bad in the relevant ways but not untruthful, untruthfulness

[8]Even some sceptics of the fake news term and concept agree that the phenomenon purportedly picked out by 'fake news' is worrisome and worth theorising about. See, e.g., Habgood-Coote (2019) but cf. Coady (2021).

[9]Put another way, the functional role of the term, 'fake news', outstrips its application to category instances or even slurring political opponents. We employ the term in our theorising in order to explain a phenomenon and its relation to our political-epistemic situation. I thus reject as a success condition that our accounts map on to ordinary usage of 'fake news'. For a methodological emphasis on ordinary usage see, e.g., Grundmann (2020). For expressive functions of 'fake news' see Coady (2021), Egelhofer and Lecheler (2019) and Habgood-Coote (2019).

[10]This move has clear parallels in recent debates over conceptual engineering and conceptual ethics. See, for instance, Brigandt and Rosario (2020), Haslanger (2020) and Petit (2020).

wouldn't be doing any explanatory work. Untruthfulness might then be a typical feature of fake news, and may even exacerbate its badness, but it's not constitutive of the phenomenon. So, even if a candidate feature exemplifies epistemic badness of some sort, it plausibly remains unconnected to fake news if this feature doesn't account for the particular badness of fake news.

Returning to insincerity, we should include it in our accounts only if, *qua* feature of a news story, it functions as an independent mechanism for realising fake news's political-epistemic badness. Two questions emerge. First, how can we determine this without succumbing to the problems afflicting the definitional project? Second, what is the relevant badness that insincerity is supposed to explain? I contend we can address the first by answering the second. For we require an independent schema for classifying instances of fake news, one that doesn't presuppose or deny that insincerity helps explain its political-epistemic badness. Developing such a schema would involve articulating a list of classification criteria that reflect our expressed (i.e. uncontroversial) theoretical and practical aims in theorising about fake news, regardless of whether the deliverances match our pre-theoretical intuitions. That is, they should capture the cases of the phenomenon we care about. Importantly, these criteria aren't the definitional set of necessary and sufficient conditions for fake news. No criterion would be strictly necessary or sufficient for a candidate instance counting as fake news; they are at best jointly sufficient (the satisfaction of some or most may also suffice). As such, these criteria are silent on what fake news is; they leave undecided both the exact constitutive features of fake news and a full explanation of how those features are implicated in the realisation of the pertinent political-epistemic badness.[11] Rather, they enable us to identify instances of fake news from which we can test which candidate features function as independent mechanisms for realising fake news's political-epistemic badness.

2.2. The political-epistemic risks of fake news

Given the above, the challenge is to elucidate fake news's political-epistemic badness in a way that would yield the requisite classification criteria.

[11]Contrast Thomas Grundmann and Sven Bernecker, who both advocate for an effects-oriented conception of fake news (Grundmann 2020; Bernecker 2021). This strikes me as mistaken. The objective of our theorising shouldn't just be to identify the relevant effects but to explain in virtue of what they obtain. A theory of fake news that excludes such an explanation seems to me incomplete.

Notably then fake news, along with its associated dangers, is intimately tied to journalism and its role in facilitating proper democratic discourse and decision-making (Egelhofer and Lecheler 2019).[12] It's here that I want to introduce the notion of a political-epistemic risk. When we speak of fake news's political-epistemic badness, we specifically highlight the threats it poses to democratic discourse and decision-making by virtue of worsening the epistemic situation of democratic actors. Within this political-epistemic environment, we fear the ability of democratic actors to participate properly in democratic deliberation is inhibited since they lack the knowledge needed for informed action and decision-making. And we characterise this situation by highlighting particular ways in which fake news brings it about. That is, fake news functions to worsen democratic decision-making by realising specific dangers. I'll call these dangers the political-epistemic risks of fake news.

Now the riskiness of these dangers derives from their dispositional nature. Depending on actual consumption and acceptance, fake news may or may not worsen democratic decision-making. What matters is that the quality of the political-epistemic environment is poised to yield bad decision-making, regardless of actual uptake. The realisation of these risks thus isn't contingent on democratic actors actually accepting fake news. And insofar as theorists roughly agree on what these risks are, I propose we take their realisation to be our classification criteria. There are three such risks that appear widely throughout the fake news literature: (1) producing epistemically faulty beliefs in the audience; (2) distracting public discourse from issues that matter; and (3) eroding social-political trust.

Regarding (1), a chief worry about fake news is the potential proliferation of faulty beliefs among its consumers about politically important issues (Egelhofer and Lecheler 2019; Tsfati et al. 2020).[13] That is, there is some feature in virtue of which fake news is disposed to generate bad beliefs in those that base their beliefs on its supposed truth. Often, the badness of these beliefs amounts to their being literally false. But they could also be faulty in some other way. In admitting the possibility of

[12]Unlike related mass communicative phenomena like propaganda and conspiracy theories, fake news is uniquely connected to news production and distribution. Often mimicking the appearance of legitimate journalism, fake news operates under the conceit of purporting to inform audiences of recent events (Damstra et al. 2021; Egelhofer and Lecheler 2019; Tandoc Jr. 2019; cf. Jaster and Lanius 2021). Though fake news is a common vehicle for their spread, propaganda and conspiracy theories by contrast needn't be produced or distributed through these channels (Dutilh Novaes and de Ridder 2021; Jaster and Lanius 2021).

[13]Also see discussions in: Bernecker (2021, 288–290); Chambers (2021, 154–155); Gelfert (2018, 86–91); Grundmann (2020, 8–1); Jaster and Lanius (2021, 38); Levy (2017, 29–32); Rini (2017, E-46–E-49).

merely misleading fake news, the resulting audience beliefs may be literally true. Nevertheless, the epistemic basing relation between the audience's beliefs and their available evidence could be faulty in some way. Perhaps, for example, these beliefs lack sufficient supporting evidence or presuppose or imply a false proposition (Jaster and Lanius 2021, 21–22). [14] In any case, fake news risks worsening democratic decision-making since any decision-making premised on epistemically faulty or false beliefs is ill-posed to yield good, let alone optimal, results (Chambers 2021).

Second, and in a similar vein, fake news risks distracting democratic discourse from politically important issues in the first place (Chambers 2021). If a significant number buy into the claims of fake news, or if news outlets find it newsworthy, discourse itself will plausibly turn to debates over the truth of those reports. The content of fake news cannot be ignored in public discussion if many actors base their political behaviour on its presumed truth (Tsfati et al. 2020). One clear instance of this is how public discourse evolved after the onset of the COVID-19 pandemic. Undoubtedly, there were many hard questions about how best to balance economic insecurity and public health. This, however, was often sidelined by fake reports questioning the effectiveness of mask-wearing in preventing its spread, the number of actual deaths from the disease, the effectiveness of conventional treatments, and even the existence of the coronavirus itself. Conspiracy theories emerging from fake news on COVID-19 dominated news cycles and social media discussions to the point where basic matters became political battlegrounds (Naeem, Bhatti, and Khan 2021; Singh et al. 2022). Fake news, in other words, can undermine democratic deliberation by shifting political discourse away from genuine, substantive issues to the truth of otherwise well-established claims.

As for (3), fake news risks eroding social-political trust generally but particularly along epistemic lines (Reglitz 2022). It does so in a couple of ways. First, fake news is suspected of poisoning the well in that it often implies that mainstream news outlets are not credible and perhaps purposefully deceptive (Tandoc Jr. et al. 2021). Alleging that mainstream journalists are incompetent, objectionably biased, or even lying to their audiences, fake news undermines the perception that such journalists worth trusting (Dutilh Novaes and de Ridder 2021; Egelhofer and Lecheler 2019; Jaster and Lanius 2021; Tandoc Jr. 2019). Second, fake news muddies the epistemic waters. Apart from doubting the

[14] I'm neutral here on whether this epistemic faultiness amounts to a lack of justification.

credibility of otherwise reliable news sources, fake news disseminates so much information that it becomes unclear where credibility and truthfulness actually lie. Even if actors don't believe fake news, it might still lead them to withhold judgment as to which outlets are trustworthy given the bevy of contradictory claims (Chambers 2021; Dutilh Novaes and de Ridder 2021; Jaster and Lanius 2021). Political actors might, for example, believe legitimate journalism purposefully ignores issues of real importance on account of their allegiance to some powerful figure.

We can now circumscribe the target of our theorising more precisely: namely, the distinct communicative phenomenon that exhibits these three risks. From a political-epistemic perspective, we're inclined to classify some news story as fake news partly because of its inherent badness as an instance of news.[15] To classify a news story as fake news thus exceeds a descriptive project. It's to evaluate that news story as being harmful to democratic life by manifesting these risks. Our classification practices thus appear motivated and informed by these considerations. If candidate cases didn't exhibit these risks, we wouldn't (and shouldn't) classify them as fake news. More exactly, for any given news story, if it doesn't manifest or contribute to the realisation of fake news's political-epistemic risks, then it's not an instance of fake news. It's trickier, though, whether the converse holds: namely, whether it's sufficient that a given report exhibit this badness for us to classify it as fake news. In my estimation, however, we're justified in holding the following: absent a principled explanation to the contrary, that a given report manifests, or contributes to the realisation of, the relevant political-epistemic risks gives us sufficient – if not altogether conclusive – reason to classify it as fake news. If this is on track, then we should take as our classification criteria the risks outlined here.

We're now positioned to address the matter of insincerity. Per the above, we should include insincerity in our theories only if, *qua* feature of the reporting, it functions as a mechanism for realising fake news's political-epistemic risks. To do this, we need to investigate whether these risks manifest in the absence of insincerity. Since insincerity appears in all paradigmatic cases, we should instead examine non-paradigmatic cases – ones that don't obviously exhibit insincerity. If our classification criteria admit such cases, we'll have reason to doubt insincerity helps explain fake news's political-epistemic badness, a role

[15]I elide here the question of whether fake news is news. If one prefers, talk of fake news as news can be easily replaced with something like 'testimony given within a journalistic or pseudo-journalistic context'.

any constitutive feature of the phenomenon should perform. I'll proceed by proffering bad science journalism as a legitimate candidate for being fake news.[16] I'll argue that bad science journalism poses sufficiently similar political-epistemic risks as paradigmatic cases of fake news. This, in turn, gives us a sufficient reason to classify these instances of bad science journalism as fake news. Yet despite these political-epistemic faults, insincere motives are scarcely attributed to propagators of bad science journalism. So, since the unique political-epistemic badness of fake news also obtains with these non-prototypical cases, we can see the political-epistemic significance of insincerity for fake news is negligible.

3. The political-epistemic risks of bad science journalism

Far from being on the fringes of cultural prestige, bad science journalism finds its home in mainstream (or traditional) news outlets, making it a common target of criticism among science communication researchers. Whether freelancing or employed by a news outlet, science journalists are criticised for distorting the overall state of scientific research in a given field. This distortion has its source in the divergence of standard journalistic practices and the proper epistemic norms of scientific knowledge production (Dunwoody 1982). We therefore encounter untruthful reporting. While bad science journalism isn't often literally false, it is frequently misleading, thereby misrepresenting the most accurate scientific picture of the world at the time.

Journalistic distortion of science falls between two extremes (Schäfer 2011). On one side of the spectrum, there's the tendency to ignore relevant nuances, ambiguities and limitations of scientific research (Guenther et al. 2019; Intemann 2020; Murray, Schwartz, and Robert Lichter 2001). The other extreme, ironically, consists of the overemphasis on these nuances, ambiguities and limitations (Boykoff and Boykoff 2004; Dunwoody 1999; Koehler 2016; Merkley 2020). In either case, the epistemic faults are associated with hyperbole and sensationalism. And, as we'll

[16]I examine bad science journalism instead of bad journalism *simpliciter* since, dialectically, the examples are easier to work with. With bad journalism, especially political journalism, there seems to be a greater risk of activating certain partisan and ideological affiliations. While science journalism has obvious political implications, its content is less easily associated with political allegiances, thereby making it easier to highlight the relevant political-epistemic faults. Moreover, focusing on political news can distract from the point I want to draw out. The badness of fake news that's explicitly political is more easily seen as insincerely propagating literally false testimony. By contrast, the epistemic-faults and consequent political-epistemic risks, are more subtle, which helps draw attention away from the obvious badness of paradigmatic cases of fake news.

see, either kind of bad science journalism yields the requisite political-epistemic risks for classifying it as fake news.

3.1. Overplaying nuance, ambiguities and limitations

Given its prominence in the science communication literature, I want to begin with the overemphasis on scientific ambiguities, nuances and limitations. Throughout much science journalism, consideration of the inherent uncertainties in scientific research is absent. Yet there are several notable cases where reliance on these very uncertainties misleads audiences. This happens most in cases where the uncertainty is what Abel Gustafson and Ronald E. Rice call consensus uncertainty, the disagreement and controversy among scientists (Gustafson and Rice 2020, 618).

Consensus uncertainty is typically at play in journalistic presentations of politically charged scientific questions. Seen most prominently in reporting on anthropogenic climate change, journalists have framed extant research as controversial or inconclusive given expressions of scepticism from a minority of scientists (Boykoff and Boykoff 2004; Oreskes and Conway 2010). Of course, given the complexity of the phenomenon, several outstanding questions remain as to what the exact mechanisms of anthropogenic climate change are and, especially, the influence of exogenous variables. But, from a reporting perspective, it's highly misleading to portray the general state of climate science as inconclusive. It's well-known that anthropogenic climate change is happening and is caused by the emissions of greenhouse gases. Detractors claiming otherwise comprise an incredibly small minority and are usually not even specialists in the field (Oreskes and Conway 2010). Nevertheless, journalists have presented research on the phenomenon as hotly contested within the scientific community (Anderson 2009; Boykoff and Boykoff 2004; Oreskes and Conway 2010). Such practices, moreover, are replicated across science journalism. On topics ranging from the efficacy and safety of vaccines to the health consequences of tobacco use to the effects of aerosols on the ozone layer, science journalists highlight consensus uncertainty in a way that distorts the overall scientific picture (Catalan-Matamoros and Peñafiel-Saiz 2019; Oreskes and Conway 2010; Schäfer 2011).

This emphasis on consensus uncertainty is attributable to the central journalistic values of balance and objectivity (Anderson and Schudson 2020; Dunwoody 1999; Koehler 2016; Merkley 2020). In this regard, the obligation for balanced and objective reporting is interpreted as the

need to grant equal epistemic weight to opposing views on issues of political importance. Inasmuch as there's any controversy at all, reporting is charged with presenting all opposing views in full without favouring any particular one (Boykoff and Boykoff 2004; Merkley 2020). Even within science journalism, journalists often feel compelled to ensure balance and objectivity by reporting all views that have been espoused by any member of the scientific community (Dunwoody 1999). And this is only exacerbated by the surprisingness of detracting views. That someone within the scientific community disputes the consensus on these issues is noteworthy, especially given their political importance and the public attitudes toward them. Many don't want it to be true that tobacco use increases the risk of cancer or that constant release of greenhouse gases causes climate change, for the truth of these claims warrants drastic lifestyle changes (Oreskes and Conway 2010). So, it's all the more significant if a seemingly qualified member of the scientific community claims otherwise.

Science journalism taking this form seems primed to at least contribute to the realisation of fake news's political-epistemic risks. First, audiences who believe this kind of reporting risk developing faulty beliefs. While they may form beliefs that are literally true (e.g. about what certain scientists say), they will likely also form false beliefs that are implied or presupposed by this reporting (e.g. that the basic science of anthropogenic climate change is unsettled) (Koehler 2016). Second, this kind of science journalism further risks framing democratic discourse for the worse. Instead of centring debate on how to combat anthropogenic climate change or regulate the availability of carcinogenic tobacco products, discourse surrounds whether there is anthropogenic climate change or whether such tobacco products are indeed carcinogenic (Oreskes and Conway 2010). And third, by platforming (unqualified) detractors, this reporting risks eroding public trust in scientific institutions, specifically in their capacity to arrive at politically neutral answers to crucial questions (Gustafson and Rice 2020). That is, journalistic overemphasis on scientific nuances, ambiguities and so on functions to simultaneously poison the well and muddy the water on these issues (though in a more roundabout way). We see here platformed figures who cast doubt on the credibility of established scientists and on the scientific consensus itself. Audiences might thus experience epistemic uncertainty as to what's true if they don't distrust scientific institutions altogether (Gustafson and Rice 2020).

To conclude, bad science journalism that leverages scientific uncertainty or ambiguity can very well realise fake news's political-epistemic

risks – it's seemingly bad in the same way paradigmatic cases of fake news are. Applying the framework from Section 2, we therefore have sufficient reason to classify this reporting as fake news. With this in hand, I will now address whether the same is true for science journalism that downplays or ignores these uncertainties, nuances, or limitations. As we'll see, the case study I examine below plays into ongoing worries about scientific hype and what 'gee-whiz' science journalism: namely, the inappropriate exaggerations of scientific findings resulting from simplification (Angler 2017, 3–9; Intemann 2020; Jerome 1986).

3.2. Downplaying nuances, ambiguities and limitations

Recently, a study published by Itzhak Khait and colleagues in the journal, *Cell*, caught the attention of many science journalists. Using primarily tobacco and tomato species, Khait et al. set out to discover if plants emitted airborne sounds when exposed to stress conditions, namely drought and stem cutting (Khait et al. 2023). They found that, under these conditions, plants do indeed emit frequent soundwaves in the ultrasonic sound range (20-150 kHz) (Khait et al. 2023, 1330–1333). As for the underlying mechanism, they tentatively hypothesise that these sounds may be the result of xylem cavitation (Khait et al. 2023, 1333). On this hypothesis, the stress conditions cause the pressure of the liquid in the xylem to reduce beyond a normal change, resulting in the liquid rapidly changing into a gaseous state. When this occurs, vapour cavities (or air bubbles) subsequently form within the xylem, which expand and eventually collapse (Cochard et al. 2013; Khait et al. 2023). According to the cavitation hypothesis then, Khait et al. recorded the collapse of the vapour cavities that further corresponded to the kind of stress induced on the plant as well as the plant species themselves (Khait et al. 2023, 1333). If this hypothesis is on track, Khait et al.'s research has clear agricultural applications, for farmers can monitor for these sounds and determine if and when their crops need irrigated (Khait et al. 2023, 1333–1334).

The Khait et al. study received considerable attention from science journalists, with published reports appearing in news outlets like *The New York Times*, *The Daily Mail*, *The Hill* and *Nature*.[17] However, much of this reporting either ignored or downplayed the cavitation hypothesis.

[17]Unless specified, references are generally to Allen (2023), Cohen (2023), Elbein (2023), Hunt (2023), Incorvaia (2023), Kato (2023), Knapton (2023), Marris (2023), Melnick (2023), Sample (2023) and TN Viral Desk (2023)

Instead, science journalists prioritised the possibility that Khait et al.'s findings substantiated plant mentality.[18] Despite the occasional qualification of potential controversy, the overall thrust of the reporting indicates that Khait et al. found evidence of plants exhibiting mental states. We see this evidenced in headlines like 'Plants emit a 'rather noisy' cry for help when under stress, scientists find' (Cohen 2023), 'This Is What It Sounds Like When Plants Scream' (Incorvaia 2023) and 'Look away now, vegans! Plants produce ALARM SOUNDS after being cut' (Allen 2023).

Not mere clickbait, the reporting itself tended to describe the emitted sounds as akin to crying or screaming, without much (if any) indication that the usage of the relevant terms might be metaphorical. While sometimes enclosed in scare quotes, this practice remained inconsistent even within articles (see, e.g. Elbein (2023) and Knapton (2023)). Exacerbating these practices is the pervasive failure to acknowledge the cavitation hypothesis until later in the reporting. Audiences are not introduced to the potential mechanism for the findings until halfway or even near the end of the reporting, with Li Cohen, writing for *CBS News*, making no mention of it at all (Cohen 2023). Similarly, many journalists did source non-affiliated researchers, who expressed caution toward interpreting these findings as evidence of plant mentality. But much like acknowledgement of the cavitation hypothesis, such reservations were typically relegated to the very end of the reporting (Incorvaia 2023; Kato 2023; Marris 2023; Sample 2023).

This reporting is clearly riddled with epistemic faults. The pressing question, though, is whether these faults contribute to the realisation of fake news's three epistemic risks. I think they do. Consider first the political relevance of this topic. Suppose audiences take on board the claim that Khait et al.'s findings are evidence of plant mentality. This interpretation may have implications for political disputes over, for example, animal welfare. As signified by Victoria Allen's sensationalist title, some might take these findings as evidence against prioritising the liberation of non-human animals in agriculture or even their well-being. If plant mentality is thought to be on a par with that of non-human animals, then there's little reason for animal rights advocates to advance their cause – or so the reasoning could go. In turn, we could see this

[18]There are some exceptions in this reporting. While still suffering from similar problems, Katie Hunt's piece for *CNN* and Kyle Melnick's for *The Washington Post* commits the errors expounded on below to a significantly lesser degree (Hunt 2023; Melnick 2023). And, in addition to Hunt, Brook Kato's reporting for *The New York Post*, includes a thorough description of Khait et al.'s experimental design (Hunt 2023; Kato 2023).

interpretation as informing attitudes toward certain agricultural practices or deforestation.

This reporting therefore realises the first two political-epistemic risks outlined in Section 2. For one, the reporting is clearly disposed to produce false beliefs in its audience about what hypotheses Khait et al.'s research supports. Despite nothing in the study implying that Khait et al. found evidence of plant mentality, consumers of this reporting could come away with the belief that it did. Second, where there could be substantive policy debate over agricultural applications of this research, focus instead might be on whether plants feel pain and what this means for debates over animal welfare. The foreground of the sensationalist interpretation thus distracts from the actual practical implications of Khait et al.'s findings.

Less clear, however, is whether this reporting contributes to the erosion of trust. Given the description from Section 2, there doesn't appear to be any poisoning-of-the-well or muddying-of-the-waters. Yet these two mechanisms are posited as explanations for the erosion of trust in paradigmatic cases of fake news. Bad science journalism could erode trust in a different way altogether. More careful readers might conclude that journalism is not a viable outlet for reporting on important scientific issues. Indeed, some surveys of scientists reveal an overall reticence to publicise their research with the help of journalists given a prominent fear that their work will be distorted or misrepresented (Angler 2017, 18–20; Dudo 2015). Journalism is thus less able to establish trust between audiences, sources and journalists since reporting like this could chill scientists from presenting their work in established news outlets.

From this case, we can see how bad science journalism systematically realises fake news's political-epistemic risks in downplaying pertinent complexities and uncertainties. The reporting on Khait et al. (2023) is not an isolated case, for the faults exhibited therein are emblematic of deeper trends in science journalism (Angler 2017; Guenther et al. 2019; Intemann 2020; Jerome 1986; Murray, Schwartz, and Robert Lichter 2001; Schäfer 2011). This is but one instance of common practices employed by science journalists; examination of this case positioned us to see more clearly what the epistemic faults consist of. And insofar as these practices yield reporting with sufficiently similar political-epistemic problems, they equally contribute to the realisation of the relevant political-epistemic risks. Thus, following the conclusions of Section 2, we have sufficient reason to classify bad science journalism of this sort as fake news.

3.3. Bad science journalism or bad science

Throughout this section, I've argued that political-epistemic risks emerging from bad science journalism are attributable to problematic divergences in the epistemic norms and practices in journalism and science. There's some reason to doubt this. As Carrie Figdor observes, science journalism can suffer from problematic epistemic practices in science, like p-hacking and data omission (Figdor 2017). Similarly, science journalists commonly rely on university press releases for details on the research and findings, where these releases commit many of the same errors expounded above (Dudo 2015). There's even evidence that the epistemic quality of press releases influences that of the reporting: whether reporting exaggerates scientific findings or includes pertinent caveats depends on the content of press releases (Sumner et al. 2016). Thus, we might think that the real problem of bad science journalism lies not with journalistic practices but with science itself and how it's communicated through research institutions.[19]

Undoubtedly, the epistemic relationship between scientists and journalists is complex. The science journalism most often encountered by audiences is dependent on the epistemic quality of the research itself. But this dependence is partial. In contrast to gee-whiz science journalism, there's also the possibility of science journalists adopting a more critical stance, scrutinising the epistemic practices of the research they're reporting on (Angler 2017, 7–11; Figdor 2017; Jerome 1986). There's nothing intrinsic to science journalism that requires its content to be solely dependent on published findings or press releases. Indeed, that science journalism rarely takes this form is a plausible indictment of the practices themselves. Uncritical deference to sources is an evaluable practice, regardless of why it's enacted.

Therefore, I believe the arguments advanced in this section yield sufficient reason for us to classify bad science journalism as fake news. By highlighting how particular practices contribute to the realisation of political-epistemic risks, I've established an unacknowledged parallel between paradigmatic cases of fake news and ordinary, bad science journalism. Since the same political-epistemic risks obtain in both cases, they plausibly share the relevant bad-making features.

What then can we conclude about insincerity? Recall this paper's characterisation of insincerity:

[19]Notably, this objection mostly targets practices that ignore pertinent uncertainties, nuances and the like. As such, it leaves the practices detailed in Section 3.1 largely untouched.

- *Insincerity*: A speaker's testimony is insincere if and only if it is either intentionally deceptive or bullshit.
  (a) Intentional Deception: A speaker's testimony is intentionally deceptive if and only if, in uttering it, the speaker intends to proffer untruthful testimony.
  (b) *Bullshit*: A speaker's testimony is bullshit if and only if, in uttering it, the speaker is indifferent toward whether it is truthful or untruthful.

Whether bad science journalists are necessarily or generally insincere thus depends on whether cases like those above are propagated with either the intention to deceive or with indifference to the truth. We can conclude that bad science journalists are sincere so long as one of the following holds: (i) they believe their reporting in full, (ii) they don't intend to proffer untruthful testimony, or (iii) they care about whether they're saying something truthful. It's notable then that even with the numerous political-epistemic flaws identified by critics of bad science journalism, we don't encounter widespread accusations of insincerity. Indeed, what reason could we have for thinking otherwise? On the surface, there's no case for science journalists to systematically bullshit or intend to deceive in their reporting. The political-epistemic faults of their reporting seems instead attributable to particular institutional constraints – e.g. tight deadlines, few resources, financial pressures and the like – or their lack of expertise in the domain they're reporting on.

We therefore have an initial case against insincerity as a necessary, or obviously typical, feature of fake news. Inasmuch as bad science journalism systematically realises the unique political-epistemic risks of fake news without its propagators being insincere, insincerity doesn't function as a mechanism for realising them. According then to the framework presented in Section 2, insincerity shouldn't be included in our theories of fake news since it doesn't add any explanatory power to our theorising.

4. (In)sincere bad science journalism?

At this stage, opponents might contest my reticence in attributing insincerity to bad science journalists. Perhaps more of a case can be made for them either bullshitting or intending to deceive their audience. As such, I'll detail plausible ways in which bad science journalists could be insincere in their reporting and arguing along the way as to why these suggestions fail. Since I argued the practices of bad science journalism systematically realise the pertinent political-epistemic risks, I'll go

beyond arguing that it's merely possible for bad science journalists to be sincere. Rather, I'll argue that science journalists may be systematically propagating reporting with the political-epistemic faults elucidated in Section 3 without being obviously insincere.

4.1. Is bad science journalism bullshit?

On Harry Frankfurt's initial telling, bullshitters exhibit a lack of care or regard to the truth-value of their testimony. For bullshitters, the truth or falsity of their claims is beside the point. Rather, they tailor their claims to achieve their non-epistemic ends, whatever those may be (Frankfurt 1988). Now what this indifference precisely amounts to is difficult to surmise. For our purposes, I'll assume bullshitters' indifference is such that among their ranked-ordered preferences their non-epistemic ends enjoy precedence over any epistemic ends they might have.[20] Take, for example, an agent who desires both to acquire social capital and tell the truth, which are ordered such that acquiring social capital takes precedence over telling the truth. This means that, *ceteris paribus*, whenever these ends conflict she will prioritise acquiring social capital over telling the truth. Thus, her primary motivation is to achieve some non-epistemic end and so counts as being indifferent toward the truth in the relevant sense.

To this, we should add that bullshitters may care about the truth-value of their testimony so long as doing so is conducive to achieving their non-epistemic ends. As Andreas Stokke and Don Fallis compellingly argue, bullshitters' indifference is not directed at their individual utterances but inquiry itself (Stokke and Fallis 2017). For any question under discussion, bullshitters are indifferent toward whether they're contributing true or false answers as indicated by their available evidence (Stokke and Fallis 2017, 295). As their evidence doesn't determine their contribution, bullshitters' claims are still guided by non-epistemic ends.

Applied to our case, there's a story in which bad science journalist's non-epistemic ends take precedence over their epistemic ends and are thus bullshitting. Consider journalists' need to establish their work as newsworthy – as being significant enough to warrant its inclusion in the news and their audience's attention. In settling on story selection

[20]This allows us to say that bullshitters aren't completely indifferent toward truth within testimonial exchange, a result that's likely more compatible with Frankfurt's claim that bullshit is commonplace in our communicative practices (Frankfurt 1988, 117, 132–133).

and reporting procedures, journalists and editors are invested in the likelihood that the reporting is consumed (Duffy 2021; Harcup and O'Neill 2017; Lippmann [1922] 1997). Determining newsworthiness thus turns on many considerations: whether the news is positive or negative, surprising, relevant, entertaining and so on (Harcup and O'Neill 2017; Molek-Kozakowska 2017). While non-exhaustive, this list illustrates that journalists' and editors' judgments of newsworthiness are guided by non-epistemic considerations; for insofar as the news media is a profit-driven industry, news organisations invariably vie for audience attention (Duffy 2021; Friedman 1986; Harcup and O'Neill 2017). Science journalists are therefore incentivised to indulge in hyperbole, exaggeration and simplification to attract consumers (Angler 2017; Friedman 1986). That these financial incentives and pressures are constantly a factor in editorial and journalistic decisions ensures non-epistemic ends are at play in news production. So, while bad science journalists may not be indifferent toward the truth-value of their particular claims, they may be indifferent toward whether their reporting as such presents true or false information with respect to the subject itself since their non-epistemic ends enjoy priority over any epistemic ones.

Since it relates to agents' attitudes toward their testimony, our attributions of bullshit to bad science journalists turns on the actual rank-ordering of their ends, not just those ends that furnish action. After all, external constraints and pressures can inhibit actions that align more with agents' preferred ends. I may, for example, prefer polishing an argument to perfection before submitting it for review, but am prevented from doing so because of institutional pressures to publish. This doesn't suddenly render my argument bullshit as I care more about the epistemic quality of my work. Similarly, so long as bad science journalists prioritise epistemic ends in their rank-orderings we can conclude they aren't bullshitting in the relevant sense.

Given the available evidence, there's little reason to suspect journalists are bullshitting. Sociological research into journalists' conceptions of their roles and values reveals uniform affirmation of truth-telling as a chief obligation and motivation (Hanitzsch et al. 2011; Jahng, Eckert, and Metzger-Riftkin 2023; Pew Research Center 2022; Schapals 2018; Standaert, Hanitzsch, and Dedonder 2021). Indeed, it's not uncommon for journalists to express umbrage toward the institutional constraints on their reporting, like tight deadlines and editorial interference (Ashwell 2016; Friedman 1986; Harro-Loit and Josephi 2020; Usher 2018). This indicates that bad science journalists are compromising, not bullshitting. With

looming deadlines and limited word maximums, they acknowledge they can only convey so much to their audience, especially in an accessible way (Ashwell 2016; Friedman 1986). They prioritise simplification since they don't want to repel audiences with technical verbiage and desire for their audiences to comprehend the upshots (Dunwoody 1982; Friedman 1986; McKinnon et al. 2018). But this doesn't entail that their concern for the truth isn't primary. Their actions may be guided by non-epistemic considerations, but they might also be aiming for, say, a kind of approximation of truthfulness in their reporting: sometimes, they may think, something is better than nothing.

4.2. Is bad science journalism intentionally deceptive?

Turning to intentional deceit, there seems to be little reason to attribute to bad science journalists an intention to deceive their audience, regardless of how we operationalise the concept. We can, however, complicate matters. Take a science journalist whose scientific literacy is quite advanced. She understands how scientific methodology proceeds and how interpretations of evidence need to be qualified accordingly. She further has sufficient technical expertise in the area in which she's reporting. Yet, as a journalist, she knows she must greatly simplify the state of scientific research in her area for the reporting to be digestible to lay audiences. Her resulting reporting is therefore knowingly made misleading through simplification, exaggeration and so on.[21] Presumably, she wants her audience to believe her reporting. But, because she knows her reporting is misleading, is she not therefore intending for her audience to believe untruthful claims?

This case strikes me as a counterexample to those formulations of intentional deception that inform characterisations of fake news.[22] While the bad science journalist meets the letter of the formulation, they don't meet the spirit. In examining intentionally deceitful testimony, we have in mind actors whose primary aims are to decrease (or at least prevent from increasing) the ratio of true beliefs to false ones in their

[21] One interpretation here is that the journalist is concealing information in Jennifer Lackey's sense (see Lackey (2013)).

[22] An alternative strategy is to deny that the journalist has the relevant intention, and thus not meet the intent criterion of the formulation (see, e.g., Chisholm and Feehan (1977, n. 6)). However, I suspect there's some description under which the bad science journalist's actual misleadingness comes out as intentional. And, if there isn't, showing this likely requires invoking contentious machinery, like the doctrine of double effect. So, the best move for now is to simply admit the case satisfies the basic criteria for intentional deception and maintain it shows such criteria are inadequate or at best underspecified.

audience. Otherwise, it's hard to make sense of the prominent examples cited in philosophical discussions of lying and deception.[23]

Within ordinary testimonial exchanges, deceivers testify to the truth of an untruthful proposition *qua* untruthful proposition, not as an untruthful proposition in the service of instilling true beliefs among recipients. Yet, as established earlier, journalists regard truth-telling as the central virtue of their profession. The journalist's guiding aim in her reporting is to inform her audience of developments in the relevant scientific field. That the information is presented misleadingly is something she regards as necessary for reader comprehension. From her perspective, imparting non-misleading information to her audience would hinder knowledge production since recipients lack the requisite expertise for grasping the technical details, nuances and complexities. Put another way, an account of intentional deception that admits of cases like these is incapable of explaining the phenomenon we care about – one where, in normal communicative contexts, the actor's motivating reason for their action is to prevent her audience from acquiring (or continuing to have) true beliefs.[24]

4.3. Summing up

In this section, I've argued against interpreting typical cases of bad science journalism as stemming from insincere motives on the part of journalists. Despite the presence of systematic political-epistemic faults, it's doubtful that journalists are either indifferent to these epistemic qualities or intending to deceive their audience. If right, these arguments bolster my conclusion from Sections 2 and 3 that insincerity is neither a necessary nor obviously typical feature of fake news. For, given its absence in bad science journalism, it doesn't appear to function as a mechanism for manifesting, or contributing to the realisation of, fake news's unique political-epistemic risks.

5. Proving too much?

Recall the schema from Section 2: we have sufficient reason to classify a given news story or report as fake news if it manifests, or contributes to the realisation of, the political-epistemic risks associated with the

[23] See, e.g., Carson (2009), Chisholm and Feehan (1977), Fallis (2018) and Lackey (2013).

[24] Since the point here is to dispute a general characterisation of intentional deception, more argumentation is obviously needed. A full argument to this effect lies beyond the scope of this paper, but I hope the comments offered suffice for immediate purposes.

phenomenon. Couple this with the paper's main conclusion: insincerity is neither a necessary nor obviously typical feature of fake news. Together, these claims could imply that 'fake news' is co-extensive with 'bad journalism'. After all, one motivation for positing an insincerity condition in the first place is to avoid this very conclusion (see, e.g. Gelfert 2018, 99; Jaster and Lanius 2021, 23; Mukerji 2018, 925). We might thus worry that my argument proves too much. A lot of news we consider to be legitimate is plausibly bad in a way that would yield the political-epistemic risks of fake news. So, much of the news we encounter would turn out to be fake news – a result some might take to be a *reductio* on the argument itself.[25] Expounding this problem is the consequent potential for obviating the utility of the fake news term. If the framework collapses all kinds of bad journalism into fake news, the term itself apparently serves no theoretical or practical function; why talk of fake news when bad journalism suffices?

To make this worry more concrete, consider clickbait. Many of the stories highlighted in Section 3.2 clearly fall under this category. The headlines are constructed in a way to draw audiences' attention so that the stories will be read. While an obvious strategy for all professional writers, the epistemic badness of this practice doesn't consist in the headlines not being completely informative; they additionally distort the content of the story. Setting aside (for now) the fact that the examples discussed in Section 3.2 exhibited epistemic deficiencies in the content as well, classifying them as clickbait seems to capture their epistemic badness quite well. Why further classify these cases as fake news? Intuitively, the two categories overlap; but we needn't think all cases of clickbait are fake news. Endorsing this consequence seems to both commit a category mistake and dispense with an epistemically fruitful term.

First notice that whether 'fake news' and 'bad journalism' are co-extensive is an empirical question. According to the methodology developed in Section 2, we're licensed to classify news stories as fake news if they manifest the pertinent political-epistemic risks. Neither me nor my opponents can claim *a priori* whether all bad journalism can be classified as fake news under this approach. Such a determination can be made only through careful examination of the reporting and the potential political-epistemic dangers it could pose upon consumption and acceptance. Regarding clickbait, for example, remember that the epistemic faults of the cases

[25]Despite prioritising fake news's effects on audiences, Thomas Grundmann even wants to avoid this conclusion. At most, Grundmann admits of news with only 'weakly misleading effects' as being 'slightly fake news' (Grundmann 2020, 13).

covered in Section 3.2 exceed their status as clickbait. While their being clickbait is a contributing factor, it's the content of the pieces that does much of the explanatory work. There's nothing obviously inherent to clickbait that the content of the story is epistemically bad. For what's supposedly distinctive of clickbait is how the distorting effects of the reporting's surface presentation function to garner audience interest (Damstra et al. 2021, 1949; Gelfert 2018, 107–108; Mukerji 2018, 928).[26] Whatever constitutive features inhere in clickbait, they don't seem necessarily connected to the manifestation of fake news's political-epistemic risks. As such, it's possible that the distorting effects of clickbait don't rise to the level of fake news, and showing otherwise requires extensive empirical investigation. Moreover, it's open whether all bad journalism is politically consequential in the requisite ways. Perhaps some genres of journalism, like entertainment, lifestyle and sports journalism aren't even candidates for fake news since they wouldn't worsen democratic discourse and decision-making upon their being consumed and accepted. Again, claiming either way requires more argumentation than the scope of my current argument permits.

Methodological limitations aside, I won't ignore the genuine possibility that bad journalism generally satisfies my proposed classification criteria. Indeed, to the objection that my view permits this, I bite the bullet, for it's a feature of the framework, not a bug. And, while a cost to the argument, I don't think it's decisive for two reasons.

First, an explicit limitation of the methodology is that it doesn't posit any constitutive features of fake news. It instead allows us to identify instances of the phenomenon in a (relatively) theory-neutral way, one that reflects agreed-on theoretical and practical interests. Recall from Section 2 that a chief theoretical aim of fake news theorising is to explain fake news's unique political-epistemic badness, specifically through identifying its constitutive bad-making epistemic features. The methodology is designed to enable this theorising, not decide it. The classification criteria themselves therefore don't collapse 'fake news' and 'bad journalism', even if they eventuate their being co-extensive. For, without a positive theory of fake news, we can't determine whether the constitutive features of fake news and bad journalism are identical. So that these phenomena might be co-extensive does not automatically obviate either of the corresponding terms.[27]

[26]Cf. Egelhofer and Lecheler (2019, 103).

[27]I won't address here if this detracts from the apparent novelty of fake news (and the corresponding term) given the technological landscape in which paradigmatic cases are produced and distributed.

Second, and more importantly, the framework helps us narrow the viable, candidate features of fake news by directing our attention to those having explanatory power. On my reading, the dialectic surrounding fake news evinces that the phenomenon we care about is one posing particular dangers to democratic life. Our theoretical target is therefore a mass-communicative phenomenon that intrinsically exhibits a particular kind of political-epistemic badness. What concerns us is whether our accounts adequately capture this badness. The claim here is that insincerity-inclusive accounts fail to carve out something distinctive of insincerity that contributes to the political-epistemic badness of fake news – its being a necessary or typical feature of fake news doesn't do any significant explanatory work. For insincerity to play this role, it needs to contribute to the realisation of fake news's political-epistemic risks by functioning as an independent mechanism for their realisation. Yet, beyond mere stipulation, it's unclear if it can when those very risks can manifest in its absence.

While insincerity might help us see the apparent moral wrongness of fake news propagation, it's less obvious that this aids in clarifying how fake news works in a broader social-political context. Inasmuch as we seek to understand how fake news spreads and affects democratic discourse, our focus should be trained on those elements of fake news that are relevant to these dynamics. My account may very well generalise to all bad journalism. But the challenge for proponents of insincerity-inclusive accounts is to identify a significant, political-epistemic difference between sincere and insincere news whose bad-making features manifest, or contribute to the realisation of, fake news's political-epistemic risks. Opponents to my argument must offer a principled explanation for this difference without losing sight of our theoretical and practical aims. So, the framework here might have this undesirable, revisionary outcome, but I believe its theoretical virtues outweigh that cost.

6. Conclusion

Contra the received view, I've argued here that insincerity is neither a necessary nor obviously typical feature of fake news. I've done so by

Some might hold the fake news term is intended to pick out those cases spread uniquely through online channels of communication, such as X (formerly Twitter), Facebook, or Reddit. This idea has been disputed in the literature. For discussions see Dutilh Novaes and de Ridder (2021) and Pepp, Michaelson, and Sterken (2019). Further evidence against the putative uniqueness of our political-epistemic environment can be found in Walter Lippmann's famous criticisms of journalism in *Liberty and the News* ([1920] 2008) and *Public Opinion* (Lippmann [1922] 1997), which parallel contemporary worries over fake news.

leveraging observations as to the political-epistemic dimensions of fake news, which yield significant methodological upshots. The first upshot is that we have sufficient reason to classify reporting as fake news if it manifests, or contributes to the realisation of, the phenomenon's unique political-epistemic risks. The second upshot specifies that a posited feature for an account of fake news should function as an independent mechanism for realising these risks. With these upshots in hand, I've argued that systematic political-epistemic faults in bad science journalism render it fake news. For any instance of bad science journalism that exhibits these faults, we have sufficient reason to classify it as fake news, since those faults amount to the political-epistemic risks inextricably associated with fake news. But, as we've seen, there's little reason to suppose that propagators of bad science journalism are insincere in their reporting. Therefore, insincerity is neither a necessary, nor obviously typical, feature of fake news. Importantly, though, I still haven't offered an account of fake news. All I've concluded here is what fake news *is not*. It does not follow from my arguments here that fake news just is untruthful reporting. Perhaps this is the case. Perhaps it isn't. Either way, more examination is needed in developing a complete account of fake news.

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ORCID

C.J. Oswald http://orcid.org/0009-0000-1734-7738

References

Allen, Victoria. 2023. "Look Away Now, Vegans! Plants Produce ALARM SOUNDS after Being Cut." *Mail Online*. March 30, 2023. https://www.dailymail.co.uk/sciencetech/article-11920249/Look-away-vegans-Scientists-plants-produce-ALARM-SOUNDS-cut.html.

Anderson, Alison. 2009. "Media, Politics and Climate Change: Towards a New Research Agenda." *Sociology Compass* 3 (2): 166–182. http://dx.doi.org/10.1111/soco.2009.3.issue-2.

Anderson, C. W., and Michael Schudson. 2020. "Objectivity, Professionalism, and Truth Seeking." In *The Handbook of Journalism Studies. International Communication*

Association (ICA) Handbook Series, 2nd ed., edited by Karin Wahl-Jorgensen, and Thomas Hanitzsch, 136–150. New York: Routledge.

Angler, Martin W. 2017. *Science Journalism: An Introduction*. London: Routledge. https://doi.org/10.4324/9781315671338.

Ashwell, Douglas James. 2016. "The Challenges of Science Journalism: The Perspectives of Scientists, Science Communication Advisors and Journalists from New Zealand." *Public Understanding of Science* 25 (3): 379–393. http://dx.doi.org/10.1177/0963662514556144.

Bernecker, Sven. 2021. "An Epistemic Defense of News Abstinence." In *The Epistemology of Fake News*, edited by Sven Bernecker, Amy K. Flowerree, and Thomas Grundmann, 286–309. Oxford: Oxford University Press.

Boykoff, Maxwell T, and Jules M Boykoff. 2004. "Balance as Bias: Global Warming and the US Prestige Press." *Global Environmental Change* 14 (2): 125–136. https://doi.org/10.1016/j.gloenvcha.2003.10.001.

Brigandt, Ingo, and Esther Rosario. 2020. "Strategic Conceptual Engineering for Epistemic and Social Aims." In *Conceptual Engineering and Conceptual Ethics*, edited by Alexis Burgess, Herman Cappelen, and David Plunkett, 100–124. Oxford: Oxford University Press.

Carson, Thomas L. 2009. "Lying, Deception, and Related Concepts." In *The Philosophy of Deception*, edited by Clancy Martin, 153–187. New York: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195327939.003.0010.

Catalan-Matamoros, Daniel, and Carmen Peñafiel-Saiz. 2019. "How is Communication of Vaccines in Traditional Media: A Systematic Review." *Perspectives in Public Health* 139 (1): 34–43. http://dx.doi.org/10.1177/1757913918780142.

Chambers, Simone. 2021. "Truth, Deliberative Democracy and the Virtues of Accuracy: Is Fake News Destroying the Public Sphere?" *Political Studies* 69 (1): 147–163. https://doi.org/10.1177/0032321719890811.

Chisholm, Roderick M., and Thomas D. Feehan. 1977. "The Intent to Deceive." *The Journal of Philosophy* 74 (3): 143–159. https://doi.org/10.2307/2025605.

Coady, David. 2021. "The Fake News About Fake News." In *The Epistemology of Fake News*, edited by Sven Bernecker, Amy K. Flowerree, and Thomas Grundmann, 68–81. Oxford: Oxford University Press.

Cochard, Hervé, Eric Badel, Stéphane Herbette, Sylvain Delzon, Brendan Choat, and Steven Jansen. 2013. "Methods for Measuring Plant Vulnerability to Cavitation: A Critical Review." *Journal of Experimental Botany* 64 (15): 4779–4791. https://doi.org/10.1093/jxb/ert193.

Cohen, Li. 2023. "Plants Emit a 'Rather Noisy' Cry for Help When Under Stress, Scientists Find." *CBS News*. March 31, 2023. https://www.cbsnews.com/news/plants-emit-a-rather-noisy-cry-for-help-when-under-stress-scientists-find/.

Croce, Michel, and Tommaso Piazza. 2021. "Misinformation and Intentional Deception: A Novel Account of Fake News." In *Virtues, Democracy, and Online Media: Ethical and Epistemic Issues*, edited by Nancy E. Snow, and Maria Silvia Vaccarezza, 49–63. New York: Routledge.

Damstra, Alyt, Hajo G. Boomgaarden, Elena Broda, Elina Lindgren, Jesper Strömbäck, Yariv Tsfati, and Rens Vliegenthart. 2021. "What Does Fake Look Like? A Review of the Literature on Intentional Deception in the News and on Social Media."

Journalism Studies 22 (14): 1947–1963. https://doi.org/10.1080/1461670X.2021.1979423.

Dudo, Anthony. 2015. "Scientists, the Media, and the Public Communication of Science." *Sociology Compass* 9 (9): 761–775. https://doi.org/10.1111/soc4.12298.

Duffy, Andrew. 2021. "Out of the Shadows: The Editor as a Defining Characteristic of Journalism." *Journalism* 22 (3): 634–649. https://doi.org/10.1177/1464884919826818.

Dunwoody, Sharon. 1982. "A Question of Accuracy." *IEEE Transactions on Professional Communication* 25 (4): 196–199. https://doi.org/10.1109/TPC.1982.6447803.

Dunwoody, Sharon. 1999. "Scientists, Journalists, and the Meaning of Uncertainty." In *Communicating Uncertainty: Media Coverage of New and Controversial Science. LEA's Communication Series*, edited by Sharon M. Friedman, Sharon Dunwoody, and Carol L. Rogers, 58–74. Mahwah, NJ: Routledge. https://doi.org/10.4324/9781410601360-5.

Dutilh Novaes, Catarina, and Jeroen de Ridder. 2021. "Is Fake News Old News?" In *The Epistemology of Fake News*, edited by Sven Bernecker, Amy K. Flowerree, and Thomas Grundmann, 156–179. Oxford: Oxford University Press.

Egelhofer, Jana Laura, and Sophie Lecheler. 2019. "Fake News as a Two-Dimensional Phenomenon: A Framework and Research Agenda." *Annals of the International Communication Association* 43 (2): 97–116. https://doi.org/10.1080/23808985.2019.1602782.

Elbein, Saul. 2023. "New Study Finds Plants 'Scream' When Stressed or Injured, Raising Questions about Communication." *The Hill*. March 30, 2023. https://thehill.com/policy/equilibrium-sustainability/3926628-new-study-finds-plants-scream-when-stressed-or-injured-raising-questions-about-communication/.

Fallis, Don. 2018. "What is Deceptive Lying?" In *Lying: Language, Knowledge, Ethics, and Politics*, edited by Eliot Michaelson, and Andreas Stokke, 25–42. Oxford: Oxford University Press.

Figdor, Carrie. 2017. "(When) is Science Reporting Ethical? The Case for Recognising Shared Epistemic Responsibility in Science Journalism." *Frontiers in Communication* 2: 3. doi: 10.3389/fcomm.2017.00003.

Frankfurt, Harry G. 1988. "On Bullshit." In *The Importance of What We Care About*, 117–133. Cambridge: Cambridge University Press.

Friedman, Sharon M. 1986. "The Journalist's World." In *Scientists and Journalists: Reporting Science as News. Issues in Science and Technology Series: American Association for the Advancement of Science*, edited by Sharon M. Friedman, Sharon Dunwoody, and Carol L. Rogers, 17–41. London: The Free Press.

Galeotti, Anna Elisabetta, and Cristina Meini. 2022. "Scientific Misinformation and Fake News: A Blurred Boundary." *Social Epistemology* 36 (6): 703–718. https://doi.org/10.1080/02691728.2022.2070788.

Gelfert, Axel. 2018. "Fake News: A Definition." *Informal Logic* 38 (1): 84–117. https://doi.org/10.22329/il.v38i1.5068.

Grundmann, Thomas. 2020. "Fake News: The Case for a Purely Consumer-Oriented Explication." *Inquiry* 66 (10): 1–15. https://doi.org/10.1080/0020174X.2020.1813195.

Guenther, Lars, Jenny Bischoff, Anna Löwe, Hanna Marzinkowski, and Marcus Voigt. 2019. "Scientific Evidence and Science Journalism." *Journalism Studies* 20 (1): 40–59. https://doi.org/10.1080/1461670X.2017.1353432.

Gustafson, Abel, and Ronald E. Rice. 2020. "A Review of the Effects of Uncertainty in Public Science Communication." *Public Understanding of Science* 29 (6): 614–633. https://doi.org/10.1177/0963662520942122.

Habgood-Coote, Joshua. 2019. "Stop Talking About Fake News!." *Inquiry* 62 (9–10): 1033–1065. https://doi.org/10.1080/0020174X.2018.1508363.

Hanitzsch, Thomas, Folker Hanusch, Claudia Mellado, Maria Anikina, Rosa Berganza, Incilay Cangoz, Mihai Coman, et al. 2011. "Mapping Journalism Cultures Across Nations." *Journalism Studies* 12 (3): 273–293. https://doi.org/10.1080/1461670X.2010.512502.

Harcup, Tony, and Deirdre O'Neill. 2017. "What is News?" *Journalism Studies* 18 (12): 1470–1488. https://doi.org/10.1080/1461670X.2016.1150193.

Harro-Loit, Halliki, and Beate Josephi. 2020. "Journalists' Perception of Time Pressure: A Global Perspective." *Journalism Practice* 14 (4): 395–411. https://doi.org/10.1080/17512786.2019.1623710.

Haslanger, Sally. 2020. "Going On, Not in the Same Way." In *Conceptual Engineering and Conceptual Ethics*, edited by Alexis Burgess, Herman Cappelen, and David Plunkett, 230–260. Oxford: Oxford University Press.

Hunt, Katie. 2023. "Plants Aren't Silent, and Make More Noise When Stressed, Study Says." *CNN*. March 30, 2023. https://www.cnn.com/2023/03/30/world/plants-make-sounds-scn/index.html.

Incorvaia, Darren. 2023. "This Is What It Sounds Like When Plants Cry." *The New York Times*. March 30, 2023. https://www.nytimes.com/2023/03/30/science/plant-sounds-stress.html.

Intemann, Kristen. 2020. "Understanding the Problem of 'Hype': Exaggeration, Values, and Trust in Science." *Canadian Journal of Philosophy* 52 (3): 1–16. https://doi.org/10.1017/can.2020.45.

Jahng, Mi Rosie, Stine Eckert, and Jade Metzger-Riftkin. 2023. "Defending the Profession: U.S. Journalists' Role Understanding in the Era of Fake News." *Journalism Practice* 17 (2): 226–244. https://doi.org/10.1080/17512786.2021.1919177.

Jaster, Romy, and David Lanius. 2021. "Speaking of Fake News: Definitions and Dimensions." In *The Epistemology of Fake News*, edited by Sven Bernecker, Amy K. Flowerree, and Thomas Grundmann, 19–45. Oxford: Oxford University Press.

Jerome, Fred. 1986. "Gee Whiz! Is That All There Is?" In *Scientists and Journalists: Reporting Science as News. Issues in Science and Technology Series: American Association for the Advancement of Science*, edited by Sharon M. Friedman, Sharon Dunwoody, and Carol L. Rogers, 147–154. London: The Free Press.

Kato, Brooke. 2023. Plants Scream When Stressed or Hurt — They're 'Rather Noisy': Study." *New York Post*. March 31, 2023. https://nypost.com/2023/03/30/plants-scream-when-stressed-or-hurt-theyre-rather-noisy-study/.

Khait, Itzhak, Ohad Lewin-Epstein, Raz Sharon, Kfir Saban, Revital Goldstein, Yehuda Anikster, Yarden Zeron, et al. 2023. "Sounds Emitted by Plants Under Stress Are Airborne and Informative." *Cell* 186 (7): 1328–1336.e10. https://doi.org/10.1016/j.cell.2023.03.009.

Knapton, Sarah. 2023. "Plants Cry out When They Need Watering - but Humans Can't Hear Them." *The Telegraph*. March 31, 2023. https://www.telegraph.co.uk/news/2023/03/30/plants-cry-out-when-need-watering/.

Koehler, Derek J. 2016. "Can Journalistic 'False Balance' Distort Public Perception of Consensus in Expert Opinion?" *Journal of Experimental Psychology: Applied* 22 (1): 24–38. https://doi.org/10.1037/xap0000073.

Lackey, Jennifer. 2013. "Lies and Deception: An Unhappy Divorce." *Analysis* 73 (2): 236–248. https://doi.org/10.1093/analys/ant006.

Levy, Neil. 2017. "The Bad News About Fake News." *Social Epistemology Review and Reply Collective* 6 (8): 20–36.

Lippmann, Walter. (1922) 1997. *Public Opinion*. New York: Free Press Paperbacks.

Lippmann, Walter. [1920] 2008. *Liberty and the News*. Princeton, NJ: Princeton University Press.

Marris, Emma. 2023. "Stressed Plants 'Cry' — and Some Animals Can Probably Hear Them." *Nature*. March 30, 2023. https://www.nature.com/articles/d41586-023-00890-9.

McKinnon, Merryn, Johanna Howes, Andrew Leach, and Natasha Prokop. 2018. "Perils and Positives of Science Journalism in Australia." *Public Understanding of Science* 27 (5): 562–577. http://dx.doi.org/10.1177/0963662517701589.

Melnick, Kyle. 2023. "Plants Make Ultrasonic Popping Sounds. They Might Be Cries for Help." *Washington Post*. April 4, 2023. https://www.washingtonpost.com/nation/2023/04/04/plants-make-noises-sounds-ultrasonic/.

Merkley, Eric. 2020. "Are Experts (News)Worthy? Balance, Conflict, and Mass Media Coverage of Expert Consensus." *Political Communication* 37 (4): 530–549. https://doi.org/10.1080/10584609.2020.1713269.

Molek-Kozakowska, Katarzyna. 2017. "Communicating Environmental Science Beyond Academia: Stylistic Patterns of Newsworthiness in Popular Science Journalism." *Discourse & Communication* 11 (1): 69–88. https://doi.org/10.1177/1750481316683294.

Mukerji, Nikil. 2018. "What is Fake News?" *Ergo, an Open Access Journal of Philosophy* 5 (35): 923–946. https://doi.org/10.3998/ergo.12405314.0005.035.

Murray, David, Joel Schwartz, and S. Robert Lichter. 2001. *It Ain't Necessarily So: How Media Makes and Unmakes Scientific Reality*. Lanham, MD: Rowman & Littlefield.

Naeem, Salman Bin, Rubina Bhatti, and Aqsa Khan. 2021. "An Exploration of How Fake News is Taking Over Social Media and Putting Public Health at Risk." *Health Information & Libraries Journal* 38 (2): 143–149. https://doi.org/10.1111/hir.12320.

Oreskes, Naomi, and Erik M. Conway. 2010. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tabacco Smoke to Global Warming*. New York, NY: Bloomsbury Press.

Pepp, Jessica, Eliot Michaelson, and Rachel Katherine Sterken. 2019. "What's New About Fake News?" *Journal of Ethics and Social Philosophy* 16 (2): 67–94. https://doi.org/10.26556/jesp.v16i2.629.

Petit, Philip. 2020. "Analyzing Concepts and Allocating Referents." In *Conceptual Engineering and Conceptual Ethics*, edited by Alexis Burgess, Herman Cappelen, and David Plunkett, 333–357. Oxford: Oxford University Press.

Pew Research Center. 2022. "Journalists Sense Turmoil in Their Industry Amid Continued Passion for Their Work." Pew Research Center, Washington, DC.

https://www.pewresearch.org/journalism/2022/06/14/journalists-sense-turmoil-in-their-industry-amid-continued-passion-for-their-work/.

Reglitz, Merten. 2022. "Fake News and Democracy." *Journal of Ethics and Social Philosophy* 22 (2): 162–187. https://doi.org/10.26556/jesp.v22i2.1258.

Rini, Regina. 2017. "Fake News and Partisan Epistemology." *Kennedy Institute of Ethics Journal* 27 (2): E-43. https://doi.org/10.1353/ken.2017.0025.

Sample, Ian. 2023. "Plants Emit Ultrasonic Sounds in Rapid Bursts When Stressed, Scientists Say." *The Guardian*. March 30, 2023. https://www.theguardian.com/environment/2023/mar/30/plants-emit-ultrasonic-sounds-in-rapid-bursts-when-stressed-scientists-say.

Schäfer, Mike S. 2011. "Sources, Characteristics and Effects of Mass Media Communication on Science: A Review of the Literature, Current Trends and Areas for Future Research." *Sociology Compass* 5 (6): 399–412. https://doi.org/10.1111/j.1751-9020.2011.00373.x.

Schapals, Aljosha Karim. 2018. "Fake News: Australian and British Journalists' Role Perceptions in an Era of 'Alternative Facts'." *Journalism Practice* 12 (8): 976–985. https://doi.org/10.1080/17512786.2018.1511822.

Singh, Karandeep, Gabriel Lima, Meeyoung Cha, Chiyoung Cha, Juhi Kulshrestha, Yong-Yeol Ahn, and Onur Varol. 2022. "Misinformation, Believability, and Vaccine Acceptance Over 40 Countries: Takeaways from the Initial Phase of the COVID-19 Infodemic." *PLoS One* 17 (2): 1–21. https://doi.org/10.1371/journal.pone.0263381.

Standaert, Olivier, Thomas Hanitzsch, and Jonathan Dedonder. 2021. "In Their Own Words: A Normative-Empirical Approach to Journalistic Roles Around the World." *Journalism* 22 (4): 919–936. https://doi.org/10.1177/1464884919853183.

Stokke, Andreas, and Don Fallis. 2017. "Bullshitting, Lying, and Indifference Toward Truth." *Ergo, an Open Access Journal of Philosophy* 4 (10): 277–309. https://doi.org/10.3998/ergo.12405314.0004.010.

Subramanian, Samanth. 2017. "Inside the Macedonian Fake-News Complex." *WIRED*. February 15, 2017. https://www.wired.com/2017/02/veles-macedonia-fake-news/.

Sumner, Petroc, Solveiga Vivian-Griffiths, Jacky Boivin, Andrew Williams, Lewis Bott, Rachel Adams, Christos A Venetis, et al. 2016. "Exaggerations and Caveats in Press Releases and Health-Related Science News." *PLOS ONE* 11 (12): e0168217. http://dx.doi.org/10.1371/journal.pone.0168217.

Tandoc Jr., Edson C. 2019. "The Facts of Fake News: A Research Review." *Sociology Compass* 13 (9): e12724. https://doi.org/10.1111/soc4.12724.

Tandoc Jr., Edson C., Andrew Duffy, S. Mo Jones-Jang, and Winnie Goh Wen Pin. 2021. "Poisoning the Information Well?: The Impact of Fake News on News Media Credibility." *Journal of Language & Politics* 20 (5): 783–802. https://doi.org/10.1075/jlp.21029.tan.

TN Viral Desk. 2023. "Scientists Conclude Plants Cry When Stressed after Hearing 'Screams.'" *TimesNow*. April 2, 2023. https://www.timesnownews.com/viral/scientists-conclude-plants-cry-when-stressed-after-hearing-screams-article-99185640.

Tsfati, Yariv, H. G. Boomgaarden, J. Strömbäck, R. Vliegenthart, A. Damstra, and E. Lindgren. 2020. "Causes and Consequences of Mainstream Media Dissemination of Fake News: Literature Review and Synthesis." *Annals of the International*

Communication Association 44 (2): 157–173. https://doi.org/10.1080/23808985.2020.1759443.

Usher, Nikki. 2018. "Breaking News Production Processes in US Metropolitan Newspapers: Immediacy and Journalistic Authority." *Journalism* 19 (1): 21–36. http://dx.doi.org/10.1177/1464884916689151.