Nuance, Societal Dynamics and Responsibility in Addressing Misinformation in the post truth era: Commentary on Lewandowsky, Ecker and Cook

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Lewandowsky, Ecker and Cook (2017) begin their thought-provoking article by positing a dystopian future in a "post truth" era where knowledge is elitist and experts have lost legitimacy. In this future, facts are determined not by expert reasoning, but by an opinion market on social media; the propagation of content across social networks is highly susceptible to manipulation and popular platforms such as Twitter and Facebook are powerhouses that enable misinformation to spread on a massive scale. The authors state that there is genuine cause to be concerned that this dystopia could be becoming a reality, and that the prevalence of misinformation in contemporary society is undermining the capacity for a well-informed public to make democratic decisions. They further argue that our current post truth landscape is a product of social and political mega-trends, and a resultant alternative epistemology that challenges previously conventional standards of evidence. Therefore, as misinformation and its impacts exist beyond the level of individual cognition, steps to address these contemporary phenomena also need to be broad and inter-disciplinary. Lewandowsky et al. conclude by recommending a "technocognition" approach; underpinned by psychological principles, this approach provides technological

solutions to promote the spread of high-quality information and discourage the spread of misinformation.

This article forms a welcome contribution to a highly timely debate. As the authors note, recent political events such as Donald Trump's victory in the US presidential election and controversies such as the claims and counter claims around climate change raise very pressing questions regarding the ways that information emerges and spreads in modern life, and in particular, the role that social media might play in propagating the spread of misinformation on a massive scale. In seeking to understand and address the emergence of a post truth era, the authors acknowledge the complexity and nuance of the issues at hand and identify the need for research in these areas to extend beyond disciplinary boundaries. They put forward compelling arguments around: (1) the spread of misinformation as a collective, rather than an individually based, phenomenon, (2) the role of political factors in the spread of misinformation and (3) the recognition that addressing the post truth malaise will require academics to become involved in politics to some extent.

Despite the very creditable observations made in the article, it is our view that more work needs to be done in order to fully understand the prevalence and spread of misinformation in our contemporary context. The factors underpinning this phenomenon are highly complex and require more careful unpacking – in particular before it is possible to support ambitious claims such as the existence of an alternative epistemology. We note that the article mostly refers to large scale quantitative studies to support the claims made and suggest that qualitative research work can add a great deal to developing a detailed understanding of the nuances that lie behind the emergence of false or misleading content,

and the ways in which it can take hold in collective opinion and discourse. For the remainder of this commentary we focus our response to the article on three key areas. These are: (1) the need to explore the nuances of misinformation; (2) the further dynamics driving the emergence of a potential post truth era; and (3) the value of adopting a Responsible Research and Innovation (RRI) approach in order to foster societally desirable and responsible solutions to the current problem.

The nuances of misinformation

Throughout the article, the examples of contemporary misinformation referred to by Lewandowsky et al. (2017) are ones that are relatively straightforward to demonstrate as incorrect. This has the effect of treating misinformation as discrete and easily identifiable. Undoubtedly, much of the contentious content that propagated on social media during the 2016 US presidential election campaign and during other controversial events of recent times, such as the 2011 riots in England, was obviously false and can be easily categorised as such. Furthermore, the misleading mechanics through which it spreads – the mimicking of the imagery and style of legitimate news sites, use of false accounts and bots – can also be identified. However, whether or not content can be confirmed as true or untrue is frequently more nuanced than this. In any political campaign, policy debate or public event a great deal of the content that is shared across various forms of media, including social media, is slanted towards a particular interpretation but is nevertheless based, or can be claimed to be based, on some truth or genuine viewpoint. Recent instances might include claims made during the 2016 UK referendum about the amount of money that could be

saved by leaving the European Union[1] or the nature and extent of Donald Trump's links with Russian businesses and political agents.[2] This kind of slanted content has the capacity to shape opinion and lead to unwelcome societal outcomes – perhaps even more so than the more demonstrably fake kind, as it can be harder to discern and therefore potentially more likely to shape the opinion of a greater number of people. It is harder to identify this category of misleading information but highly necessary to do so when conducting research into the propagation of content online and elsewhere. It becomes even more crucial when developing tools to verify content and address the spread of false or potentially false information. There is great potential, for instance, for algorithmically driven tools to identify content as potentially incorrect due to its provenance and rate of propagation (Boididou, Papadopoulos, Kompatsiaris, Schifferes and Newman, 2014; Rubin, Chen and Conroy, 2015; Yuanyuan, Chengqi, Yibo and Dong, 2015). Similarly, technical tools can calculate the veracity of content based on user response to it, or by comparing the ways in which an event or claim has been reported across different sites (Conroy Rubin and Chen, 2015; Zubiaga, Liakata, Procter, Tolmie and Wang Sak Hoi, 2015). Such tools can flag up obviously false news reports emerging from fake sites and propagated by bots. However, it is very difficult for them to deal with the kinds of bias, selective interpretation and claim and counter claim that are a familiar feature of much public and political discourse (Graham and Metaxas, 2003; Webb et al., 2016; Zubiaga et al., 2016.

[1] http://www.independent.co.uk/news/uk/home-news/brexit-vote-leave-wipes-nhs-350m-claim-and-rest-of-its-website-after-eu-referendum-a7105546.html : https://www.theguardian.com/politics/2017/sep/18/why-has-boris-johnson-revived-the-350m-a-week-brexit-claim : http://www.bbc.co.uk/news/uk-politics-41306354

[2] http://www.politico.com/magazine/story/2017/03/connections-trump-putin-russia-ties-chart-flynn-page-manafort-sessions-214868 : https://www.theguardian.com/us-news/2017/jul/11/donald-trump-russia-timeline-campaign-denials : http://www.bbc.co.uk/news/world-us-canada-38966846

Research into the spread of misinformation requires recognition that truth is deeply nuanced and often contingent in character. Existing work within the sociology of knowledge (for example: Berger and Luckmann, 1966; Hamilton, 1974; Swidler and Arditi, 1994) can contribute greatly to this, as can work in the long-established field of the sociology of rumour. (for example: Allport and Postman, 1946; Shibutani, 1966; Dingwall, 2001; Wright and Nerlich, 2009). Work in this field demonstrates that the spread of misinformation is not new; there is a long history of slanted, misleading or objectively false pieces of information spreading rapidly amongst communities and sometimes becoming entrenched beliefs. These rumours frequently serve a function in their particular context; perhaps to offer a suggestion at a time of deep uncertainty or to promote cohesion and solidarity amongst a social group or sub-group. Understanding the spread of misinformation on social media also requires an understanding of these kinds of nuance. Some useful work has already been done in this area; for instance, in relation to methodological discussions on the value of combining sociological and computational approaches in the analysis of social media data (Housley et al. 2014; Zubiaga et al., 2016), and studies of social media activity during the England riots in 2011 (Procter, Crump, Karstedt, Voss and Cantijch, 2013; Procter, Vis and Voss, 2013).

The further dynamics behind the growth of a post truth era

The existence of fake content in social life and media is not a new phenomenon, however its escalation is. Information can now propagate at a speed and breadth never seen before due to the affordances of social media (Webb et al., 2016) Lewandowsky et al. (2017) draw on a range of existing studies that appear to demonstrate that in the online age, in particular due to the advent of Web 2.0, alternative or contrarian viewpoints have increasingly moved in

from the fringes of public discourse. Conspiracy theories and claims to debunk conventional understandings of history, illness epidemics and scientific facts gain more attention from mainstream audiences than ever before and this attention, the authors suggest, is a reflection of a shift into an alternative epistemology that does not apply previously standard forms of evidentiary support. They identify a range of societal trends that have led to this emergence of a post truth world. We agree that it is crucial to understand the contemporary phenomenon of misinformation within the context of interlinking societal dynamics. However, we suggest that once again there is more nuance involved and it is possible to gain a deeper understanding of these matters. Insights from science and technology studies (STS) (see for example: Jasanoff, 1995; Sismondo, 2003; Hackett, Amsterdamska, Lynch and Wacjman, 2008) teach us that science and innovation are deeply embedded in society. Therefore, we can seek to identify the societal dynamics that lead to the existence of our current technological status quo. We can begin by asking: how did contemporary society reach a point in which a small number of tech "super powers" dominate the global spread of information? Important issues to consider in response to this question include the ways in which a worldwide push for big data and user generated content enabled our current platform infrastructures to come about and how they have combined with governance structures that treat platforms as different from traditional media publishers and consequently, as less legally accountable for the content posted on their sites. A further contextual issue is the breakdown of traditional boundaries between lay people and professions that emerged as a consequence of the growth of user generated content. As described by Carusi and Jirotka (2010), the early twenty first century saw the growth of e-Science, leading to novel tools such as virtual research environments. Facilitated by the emergence of Web 2.0. these enabled multiple users to combine into coherent groups,

despite being separated geographically and temporally, and enabled and encouraged members to submit user generated content on a large scale. This had the effect of facilitating collaboration but at the same time side-stepped the traditional gatekeeping practices associated with professional research and the production of knowledge claims. Established boundaries between professional and lay research therefore began to break down, enabling new forms of content to appear and new forms of knowledge claim to invoke legitimacy. We can observe a similar process unfolding in popular media. With the development of web 2.0, traditional news organisations increasingly encourage users to submit their own content in the form of photographs, eye witness accounts of recent events and so on. These are then incorporated into news items that appear on online news sites, television broadcasts and published materials. Similarly, the ease of blogging and micro blogging enables huge numbers of users to post personal opinion pieces into the public sphere. This growth of user generated content breaks down traditional boundaries around the profession of journalism and, most relevantly, the standards of verification associated with it. This in turn enables the move to a post truth context.

Responsible Research and Innovation

In considering how we might address the post truth malaise, Lewandowsky et al. (2017) reject the suggestion that scientists should avoid becoming embroiled in politics. By contrast, they argue that it is sometimes necessary for scientists to intervene in post truth discourse and stand up for important facts – about disease causation, climate change and so on – when they are being challenged, and to do so without concern for the political fallout that might occur. In this way scientists cannot help but be political and the process of conducting science is deeply embedded in the contemporary societal context. Once again

we agree with this understanding; science and scientific processes should be recognised as entirely interwoven with societal dynamics. Furthermore, the products of scientific innovation, such as social media technologies, raise new questions for scientists as these technologies become embedded in society. This recognition helps us to better understand the steps the scientific community can take to address societal challenges such as the contemporary problem of misinformation.

The field of Responsible Research and Innovation (RRI) (see for example: Stilgoe, Owen and Macnaghten, 2013; Stahl, Eden, Jirotka and Coeckelbergh, 2014), which has gained prominence in recent years, advocates the building of close relationships between science and society, scientists and citizens, in order to produce outcomes of innovation that align with societal goals and values. RRI can be understood as "doing science and innovation with society and for society" (Owen, Macnaghten and Stilgoe, 2012); RRI approaches typically involve the inclusion of societal stakeholders across the science and innovation process, and are sensitive to local, social and cultural contexts. We suggest that an RRI approach can offer a way forward in tackling the spread of false information and inform the authors' programme of technocognition. Adopting this approach would enable a holistic view that recognises and challenges the societal dynamics that enable misinformation. For instance, it would hold to account the dominant social media platforms and engage in dialogue with citizens in order to determine what kinds of commercial, institutional and regulatory practices would best foster responsible propagation of content. It would also pose important questions regarding the potential for automated solutions to address the misinformation problem: to what extent are algorithm-driven processes to verify content and regulate its spread societally desirable? What are the potential consequences of

enabling automated processes to become the arbiters of truth and how transparent should these processes be? To what extent is it appropriate to rely on technology companies and technological solutions to resolve deeply embedded societal challenges?

Summary

In this article Lewandowsky et al. (2017) discuss the prevalence of misinformation in contemporary social life and highlight genuine concerns over the future consequences this may have for truth, facts and democracy. Noting the particular tendency for misinformation to spread across social networks, they call for an inter-disciplinary technocognition approach to address this problem. The article underlines important issues for contemporary society and research, and proposes novel steps forward. However, it also raises questions for further consideration. How can we understand and capture the nuances of misinformation; in particular, to what extent is it possible for automated processes to identify slanted, rather than obviously incorrect, content? What further societal dynamics have enabled the dominance of a small number of social media platforms and the development of an apparent post truth malaise? How can the science community take a responsible approach towards the problem of misinformation in order to produce solutions that acknowledge and align with broader societal values? Finding answers to these questions can help us to forge a surer pathway to move beyond misinformation in the post truth era.

Author Contributions

Both authors contributed to the conceptualisation and writing of the commentary. Both authors approved the final version of the manuscript.

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