Offline: Managing the COVID-19 vaccine infodemic
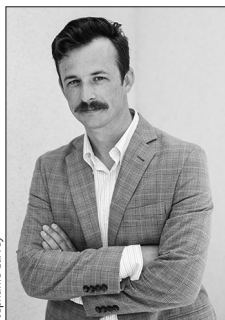
If you read News Punch (aka "Where mainstream fears to tread"), you will be familiar with a series of articles about the prospects for a COVID-19 vaccine. With headlines such as "Big Pharma Exec: We Are Exempt From COVID-19 Vaccine Liability Claims", the website has published report after report casting doubt on the integrity of vaccine science and even the likelihood of a vaccine becoming available. You will find similar pieces on other websites, such as Infowars and AlterNet. The arguments these articles peddle seem deliberately designed to sow uncertainty. Elon Musk is alleged to have said that he won't allow his children to receive a COVID-19 vaccine. Executives from one vaccine manufacturer are alleged to have sold "millions in stock as Covid vaccine trials enter phase 3". Doctors are accused of demanding the US Government punish Americans who refuse a COVID-19 vaccine. These stories may be having an effect. Last month, *Nature Medicine* published the results of a survey describing the views of over 13 000 people across 19 countries. 14·2% of the respondents completely or somewhat disagreed with the statement that they would accept a COVID-19 vaccine if generally available. 17·9% completely or somewhat disagreed with the statement that they would accept a COVID-19 vaccine if their employer recommended it. In many countries, vaccine hesitancy is sufficiently high to render community immunity a challenging goal. The survey suggests that far too little has been done to prepare the public for the arrival of a COVID-19 vaccine.

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Misinformation about COVID-19 vaccines is a serious threat not only to public health but also to national economic security—a fact made all the more urgent as a second wave of coronavirus sweeps across Europe. In their 2019 book, *The Misinformation Age*, Cailin O'Connor and James Owen Weatherall explain how false beliefs persist and spread. They emphasise the social character of fake news. The connections between us in groups or networks enable the propagation of misleading evidence as well as true beliefs. Models of communication show the importance of trust in shaping the spread of beliefs. The greater the distrust among those with different views, the greater the risk of permanent polarisation. We are also prey to conformity bias—a desire to agree with others and to trust the judgments of others. Our predilection to conformity makes it harder to stand against the crowd. If your network holds strong anti-vaccine views, you may find it more difficult to arrive at your own independent judgment, even if you are inclined to have confidence in a vaccine. And misinformation is made worse when there are active propagandists spreading fake news. The field of COVID-19 vaccines is full of propagandists seeking to manipulate and mislead.

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What can be done? Although not writing about COVID-19 specifically, O'Connor and Weatherall draw conclusions that can be applied to our present predicament. A warning: they stress that anyone who thinks the "marketplace of ideas" will sort fact from fiction is dangerously mistaken. First, then, social media companies, especially Facebook and Twitter, must do more to police their networks and eliminate false information about a potential COVID-19 vaccine. Second, trusted politicians from all political parties (and other public figures) need to speak out in support of COVID-19 vaccine science. Third, vaccine scientists (and editors of scientific journals that publish vaccine science) must raise their standards for the work they do (and publish). O'Connor and Weatherall argue that scientists need to build trust by abandoning industry funding. That isn't going to happen for COVID-19 vaccine trials. But it is important that scientists retain maximum independence from manufacturers who sponsor their studies. It doesn't help the cause for a COVID-19 vaccine when pharmaceutical company executives talk encouragingly about a vaccine. Propagandists use their words to fuel distrust about vaccine science. Fourth, journalists should avoid the unwitting spread of misinformation. They should never give any kind of platform to vaccine sceptics. Fifth, lawmakers can do more to regulate sources of misinformation, just as they have done for other threats to health, such as tobacco. O'Connor and Weatherall's central claim is that "We need to recognise fake news as a profound problem that requires accountability and investment to solve." COVID-19 vaccine misinformation is not taken as seriously as it should be. That complacency needs to end.

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