Inoculating Our Social Networks Against Misinformation[1]

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Misinformation, Disinformation, and Reinformation

Sander van der Linden and Jon Roozenbeek are researchers working in the Cambridge Social Decision-Making Laboratory, a unit that investigates "the emergence, spread, and influence of social norms in shaping human cooperation and decision-making in real-world social dilemmas" (Social Decision-Making Lab, 2021). According to Van Der Linden and Roozenbeek (2020): "on one end of the spectrum we have *misinformation*, which is simply information that is false or incorrect (and can include human error). Next, we have *disinformation*, which involves misinformation coupled with a deliberate *intent* to deceive an audience" (p. 149). Particularly important to these scholars is the fact that reliable, actionable information is a prerequisite to healthy, functional democracy. Consequently, engaging the problem of mis/disinformation is not just something we can do to cultivate better sensibilities of the world as *individuals*, but also as members of a society, heeding the call to civic duty.

What would we call it if we wanted to intentionally combat misleading information? Would we call it *re*information? I like this because it implies both a *strengthening* and a *putting back together* of information for our fellow citizens. It turns out that, although our fancy new naming isn't used, there is already work underway meant to *reinform* the public.

[1] Portions of the "Inoculation Theory" section are taken from an article I wrote for *Human-Machine Communication*: Coleman, Miles C. "Leveraging the rhetorical energies of machines: Covid-19, misinformation, and persuasive labor." *Human-Machine Communication* 3 (2021): 11-26.

Types of Reinformation

This work can be divided into four types:

1. Algorithmic: Using automation to *proactively* identify, "flag," or remove misleading information from news feeds on such platforms as Facebook or Twitter.
2. Corrective: Correcting misleading information *reactively* by writing fact-checking articles, published via such venues as Snopes or PolitiFact).
3. Legislative: Stifling the spread of misleading information with laws that encourage and support such things as tracking ad revenues on social media (e.g., the "Honest Ads Act") or media literacy in public schools (e.g., the media literacy bill, "SB-830").
4. Psychological (or Behavioral): Empowering the general public to do their part in combating misleading information. (van Der Linden and Roozenbeek, 2020, p. 150)

It is this last type of reinformation that we will be focusing on today. Specifically, we are going to learn about *inoculation theory*, and how we can leverage this idea to reinform our own social networks.

Inoculation Theory

Inoculation theory, the brainchild of the famed researcher, William McGuire, is based on an immunological analogy. McGuire took inspiration from the practice of inoculation used to protect bodies from infection. Inoculation works by introducing a weaker, or very similar, pathogen into the body, which allows the body to build immunity, and to protect itself should it come into contact with the full-strength or actual pathogen. For example, people were inoculated against smallpox, a terrible, deadly disease, by administering cowpox, a virus that was often observed as transmitted from cows to dairy workers, which shared similarities to smallpox, but whose infection presented with much milder symptoms. People who were inoculated with cowpox, subsequently, also had immunity from catching smallpox. Inoculation, moreover, can strengthen, and protect the body from serious infection. *An interesting aside from this story: the word "vaccination" is derived from the Latin, vaccinus, "of or from the cow" (Abbas, LIchtman, & Pillai, 2014, p. 1).* Starting in the 1960s, McGuire took up this idea not with regard to biological pathogens, but social ones, such as misleading information, to propose what he called inoculation theory.

Inoculation theory operates on the assumption that giving weakened versions of misleading information will activate a response "that is analogous to the cultivation of 'mental antibodies,'

rendering the person immune to (undesirable) persuasion attempts" (van Der Linden and Roozenbeek, 2020, p. 152). Since the inception of inoculation theory in the 1960s, the idea has been repeatedly tested and studied, yielding a large body of evidence that supports and confirms that inoculation works to protect people from being persuaded by misleading information (e.g., see Banas & Rains, 2010; Compton, Jackson, & Dimmock, 2013). Inoculation against misinformation requires two ingredients: (1) a direct warning that misleading information exists and can do harm and (2) a counterargument (a refutation) of misinformation. For example:

> **Warning:** "Some politically motivated groups use misleading tactics to try to convince the public that there is a lot of disagreement among scientists."
> **Counterargument:** "However, scientific research has found that among climate scientists, there is virtually no disagreement that humans are causing climate change."
> (van der Linden, Leiserowitz, Rosenthal, & Maibach, 2017, p. 3).

These two part messages induce a threat response to the warning, which activates the body (one's feelings), motivating learning from the counterargument. In this sense, and as is supported by the literature, *both* components (the warning and the counterargument) need to be present for inoculation to occur (e.g., see van der Linden, Leiserowitz, Rosenthal, & Maibach, 2017). An important factor in inoculation is "decay," which means that the protective effects of an inoculation message get weaker with the passing of time. Where inoculation might largely be conceived as a prophylactic measure--that is, a measure meant to *avoid* infection--there is growing interest in, and evidence for, pursuing the therapeutic uses of inoculation as a means of *un-infecting* persons with regard to misinformation (Compton, 2020; van der Linden & Roozenbeek, 2020). Put differently, inoculation can protect people from being persuaded by misinformation. But, we are also learning that it might also help to undo the effects of misleading information.

Making Our Own Inoculation Messages

So, inoculation is an idea that can help us protect and un-infect persons from misinformed persuasion. Successful inoculation requires both a warning and a refutation, and occasional "boosters," wherein the inoculation is followed up with additional messaging in order to maintain the effect. If, at this point, you are thinking about the swirling maelstrom of misinformation that is the modern social media-infused infosphere, you are probably also thinking that inoculating the public on every instance of misinformation, and then following up on those inoculations with booster messages, might be unmanageable and unsustainable. And, your instincts might be correct, especially if we leave this work for one or a few organizations. However, if we as individuals, spread out the work, and approach our own inoculations of misinformation, we can work to reinform (protect, and un-infect) our own social networks, as

subsections of the larger public. If we work together, in other words, we can help our social networks build immunity to misinformation. And, again, this might even be an instance of us upholding our civic duty. In addition to inoculation theory, we have some resources to help us do this:

- Ap Fact Check
- FactCheck.org
- NPR Politics Fact Check
- PolitiFact
- Snopes

So, now what I want you to do is to visit one of these fact checking sites and create your own inoculation message. So, for instance, I visited PolitiFact and found a fact check on the misleading claim that there is evidence that COVID-19 vaccination causes death. In specific, it is identified that persons are using reports posted to the Vaccine Adverse Event Reporting System (VAERS) as evidence that COVID-19 vaccines contributed to the deaths of "dozens" of people (Kim, 2021). The problem with this is that the reports posted to the VAERS are unreliable, anyone could post anything they want to, say, that the flu vaccine turned someone into the Incredible Hulk (a true story; see, Love & Merlan, 2021). Pointing to the VAERS reports as reliable evidence supporting the claim that vaccines are dangerous is misleading in the sense of making a claim with something that looks like evidence, but is not. As such, I have now created my own two part inoculation message, meant to reinform my own social network with regard to misinformation.

> **Warning:** Some people are motivated by personal interests to try and leverage reports posted to the Vaccine Adverse Event Reporting System (VAERS) in order to convince the public that COVID-19 vaccines are dangerous.
> **Counterargument:** As stated by the Centers for Disease Control, the Food and Drug Administration, and the U.S. Department of Health and Human Services (the organizations that jointly operate the VAERS), "VAERS is not designed to determine if a vaccine caused a health problem but is especially useful for detecting unusual or unexpected patterns of adverse event reporting that might indicate a possible safety problem with a vaccine." So, while the VAERS is a helpful tool to allow for early detection of abnormalities, it itself is not a scientifically reliable source of evidence.

And, then, because I feel it will fit my social network a little better, I have made a "meme-ified" version of this inoculation message, using a meme generator.

I want to encourage you to do the same. In specific:

1. Choose a fact checking website.
2. Find an instance of misinformation.
3. Create a two-part inoculation message regarding that misinformation.
    a. And, if you are interested, you might even “meme-ify” your message for sharing with your own social network.

And, when you do, you can say that you are doing your part to reinform the public, using the tremendous work of fact checkers coupled with the power of inoculation theory.

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