

Community Remedies for Civic Disorientation, De-mobilization, and Malinformation

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Abstract

Mis- and disinformation pose serious challenges to civic engagement and democratic processes. Recent developments in our understanding of "network propaganda" in media ecosystems suggest the need for novel community-based techniques with which to resist the negative impacts of mis- and disinformation. Civic engagement and civic life have long been central concerns of urban planning as a community of practice. The ability of broad publics to participate and engage is currently challenged by disorientation (confusion through overwhelming or contradictory messages), de-mobilization (persuasion to abstain from civic action), and malinformation (mis- or disinformation). This thesis confronts these urgent challenges in partnership with MassVote, a Boston-based non-profit that conducts civic engagement and education efforts. Through engaging high school interns participating in MassVote's Young Civic Leaders program, I developed a workshop framework to equip high school-aged youth to build online and create healthier relationships with news media. Informed by feminist epistemology, I identify opportunities for individuals and communities to remain grounded, oriented, and resilient in the context of a troubled media ecosystem. The workshop templates operate at three scales: individual/perception, community/small-scale network, and citizenry/society. Together, they create a suite of engagement strategies towards a framework of "network citizenship," or a more resolutely situated participation in social networks, both online and off.

Keywords; Disinformation, misinformation, civic engagement, community resilience, bottom-up techniques, Strong Objectivity

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"What you're seeing and what you're reading is not what's happening."

- Donald John Trump

01 // Virus

"... a virus particle cannot use the most lovingly concocted specialties of the media-kitchen; the virus particle can only multiply by entering a preformed network of biochemical assembly lines, and these can as yet be found only in living cells. Consequently the first step in growing viruses is to grow living cells..."

- *Wolfhard Weidel, 1916*¹

Introduction

The virality of media and information is characterized by its spread – rapidly from person to person, building exponentially and with a short half-life. If even just a few users engage and then enthusiastically spread engagement across their networks, a growing wave of buzz, remixing, and references is sure to follow. The network through which information travels affects how and how quickly the spread can occur, from word-of-mouth Broadway show excitement to political slogans inscribed on the street, from forwarded emails or ubiquitous cospypasta² to trending hashtags and ideas, or targeted and automated media purpose-built to capture attention. Technologies amplify virality, allowing for a more seamless and rapid spread. Particularly in the case of social media and contemporary web technologies, platform design (algorithmic or otherwise) aims to keep users engaged with the site, loading advertisements, and collecting data.

¹ Wolfhard Weidel, *Virus* (Ann Arbor, Univ. of Michigan Press, 1959), <http://archive.org/details/viruswolf00weid>.

² “What Is Cospypasta? - Definition from Techopedia,” Techopedia.com, accessed April 27, 2020, <https://www.techopedia.com/definition/31470/cospypasta>.

The context of this thesis is surrounded by a different, more literal, kind of virality: the 2020 global pandemic of COVID-19, a respiratory infection resulting from the virus SARS-CoV-2.³ In this moment, virality is profoundly shaping behavior as imperatives to maintain social distancing, wash hands, and avoid touching one's face flood information channels; simultaneously, hospitals grapple with supply shortages.⁴ Informational and biological virality engender their own respective panics. COVID-19 remains perplexing and paradoxical, as the threat of this pandemic has drawn historical comparisons to events as dramatic as the 1918/19 Spanish Flu while parties for Spring Break in Miami have continued;⁵ protests against containment measures received support from conservative media organizations, themselves still working remotely.⁶ New York's Governor frames the crisis with the language of wartime tactics,⁷ while a California representative notes how accessible restaurant tables now are.⁸ The viral information and messages from the COVID-19 crisis serve to highlight the confusion and contradictions present in information and media that have become commonplace over recent decades.

³ "Coronavirus," accessed April 27, 2020, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>.

⁴ "Why the U.S. Is Running Out of Medical Supplies," *The New York Times*, March 31, 2020, sec. Podcasts, <https://www.nytimes.com/2020/03/31/podcasts/the-daily/coronavirus-medical-supplies-shortages.html>.

⁵ "Gov. Andrew Cuomo: 'It's Making Sure We Live Through This.,'" *The New York Times*, March 18, 2020, sec. Podcasts, <https://www.nytimes.com/2020/03/18/podcasts/the-daily/cuomo-new-york-coronavirus.html>; Patricia Mazzei and Frances Robles, "The Costly Toll of Not Shutting Down Spring Break Earlier," *The New York Times*, April 11, 2020, sec. U.S., <https://www.nytimes.com/2020/04/11/us/florida-spring-break-coronavirus.html>.

⁶ "Fox News Gets Push-Back For Supporting Anti-Shutdown Protests," NPR.org, accessed April 27, 2020, <https://www.npr.org/2020/04/22/840717864/fox-news-gets-push-back-for-supporting-anti-shutdown-protests>; Jesse Byrnes, "Fox News Limiting Staff in Office amid Coronavirus Crisis," Text, TheHill, March 12, 2020, <https://thehill.com/homenews/media/487325-fox-news-limiting-staff-in-office-amid-coronavirus-crisis>.

⁷ "Gov. Andrew Cuomo."

⁸ "(20) Acyn Torabi on Twitter: "'If You're Healthy, You and Your Family, It's a Great Time to Go out and Go to a Local Restaurant, Likely You Can Get in Easy. Let's Not Hurt the Working People in This Country...Go to Your Local Pub'" <https://t.co/JXdhOfwe9R> / Twitter," Twitter, accessed April 27, 2020, <https://twitter.com/acyn/status/1239204553460838400>.

The two primary phenomena that this thesis investigates are dis- and misinformation. Disinformation is the malicious and often organized spreading of bad information. Misinformation is the unwitting distribution of incorrect and harmful information. Neither mis- nor disinformation are new, but they are undergoing rapid qualitative and quantitative changes while posing serious challenges to civic engagement and democratic processes. The relationship of information and media to Urban Planning interests and toolkits relates to this vulnerability of civic engagement. Urban planning requires that civic action and engagement take place, and phenomena disruptive of these processes should be of particular interest to planners and policy-makers; more broadly, the engagement processes behind physical and policy planning that rely on community engagement, public comment, and support from voters can be vulnerable to the same mis- and disinformation explored in this thesis.

As an umbrella term for mis- and disinformation, this thesis proposes "malinformation." Malinformation intends to capture both phenomena as they exist in social networks and information channels rather than describe the intent behind them; defined simply, malinformation is equivalent to bad information. This term has been previously used to describe real-world information that has been subverted or appropriated specifically to inflict harm or spark polarization,⁹ but the purpose here is to describe the state of the information being transmitted, independent of the author's intention.

⁹ "'Fake News': Disinformation, Misinformation and Mal-Information," *Ethical Journalism Network* (blog), accessed March 25, 2020, <https://ethicaljournalismnetwork.org/tag/fake-news>; "Information Disorder: 'The Techniques We Saw in 2016 Have Evolved,'" First Draft, October 21, 2019, <https://firstdraftnews.org:443/latest/information-disorder-the-techniques-we-saw-in-2016-have-evolved/>.

In this thesis, I aim to better understand malinformation within networks and how it is perceived by individuals and disseminated by communities. I also propose methods with which individuals and communities can build resilience to its negative impacts. Of particular interest is the disorientation caused by contradictions, distractions, and confusion present in and across information streams. Among the critical questions are: How can individuals improve awareness of their blind spots and biases? How can communities build resilience to the spread of malinformation? How can individuals, online and offline social networks, and educational groups develop stronger responses to malinformation? How can communities cope better with the mental and emotional costs associated with these phenomena?

In order to address these questions, I partnered with MassVote, a Boston-based non-profit organization. Alongside other programming, MassVote engages high school-aged youth in civic education and action through a program called Young Civic Leaders (YCL). This program offers internships to high school students who conduct on-the-ground operations for MassVote, including voter registration drives and civic education workshops. Through a series of semi-structured interviews and general discussions, we developed the workshop designs that make up chapter four.

Network Dynamics

Yochai Benkler, Robert Faris, and Hal Roberts describe their concept of "network propaganda" in their 2018 book of the same name as a multi-scalar characteristic of a media ecosystem's strengths or weakness to bad information embedded in the media

landscape.¹⁰ Well-documented overviews of the 2016 election demonstrate the vulnerabilities in the media landscape,¹¹ and, of particular use here, is Benkler et al.'s five major failings of the internet and decentralized media platforms (e.g. Social media) that set the groundwork for a networked public sphere to become a network propaganda machine: (1) failure to sustain long-term efforts; (2) failure to maintain openness with scale and structure; (3) failure of individuals' power versus the power of "well-organized, data-informed central powers" to mobilize; (4) failure to prevent mob-mentality and the creation of a control system, resulting in "brigading" and other aggressive tactics; and (5) the failure to resist and the vulnerability to bad information and propaganda.¹²

Most relevant to this thesis is the final failure, with an outcome Benkler et al. describe "disorientation." They define disorientation as a method of propaganda that "make[s] it impossible for people in the society subject to the propagandist's intervention to tell truth from non-truth."¹³ Benkler, Faris, and Roberts point Rush Limbaugh's polemics as a case study of disorientation, observing that he targets traditional institutions of trust and knowledge, "what he calls 'the four corners of Deceit'— government, academia, science, and the media," and suggesting that Limbaugh's arguments intend "to disorient his audience and unmoor them from the core institutionalized mechanisms for defining truth in modernity."¹⁴ In the context of COVID-19, disorientation comes about from a variety

¹⁰ Yochai Benkler, Rob Faris, and Hal Roberts, *Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics* (New York, NY: Oxford University Press, 2018).

¹¹ Philip Howard et al., "The IRA, Social Media and Political Polarization in the United States, 2012-2018" (Computational Propaganda Research Project: University of Oxford, 2018); Robert Faris et al., "Partisanship, Propaganda, and Disinformation: Online Media and the 2016 US Presidential Election," *Berkman Klein Center Research Publication* 6 (2017).

¹² Benkler, Faris, and Roberts, *Network Propaganda*, 343–47.

¹³ Benkler, Faris, and Roberts, 36.

¹⁴ Benkler, Faris, and Roberts, 36.

of malinformation sources, ranging from innocuous but inaccurate claims of hot baths panaceas and garlic cures, to politically motivated discussions of bio-weapon development, to technophobia surrounding 5G towers, to suggestions from the United States Chief Executive that ingestion or injection of disinfectant may be a plausible cure.¹⁵ It is clear that the volume of malinformation and the speed with which it propagates have kept pace with contemporary information technologies. Without a robust individual and community framework to better engage the topic of malinformation and the phenomenon of disorientation, more damage to democratic and civic processes may occur long before solutions materialize.

It is the aim of this thesis to contribute to and extend the conversation surrounding disorientation to include questions of affect, emotion, and perception, and to propose techniques for affective resilience at networked and community scales. I explore the network and social impacts of disorientation—and efforts to curb it—to better understand the daily emotional and perceptual costs of constant and intense news media consumption. In Sam Woolley's 2020 book *The Reality Game*, Woolley argues that this new, digital malinformation is not simple spin or bias, but rather "technologically enhanced propaganda that people can see, hear and feel."¹⁶ Any solutions proposed to the problem of malinformation and its networked impacts require similarly diverse skills, scales, and approaches. To resist malinformation demands work that builds on critical

¹⁵ "Myth Busters," accessed April 27, 2020, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters>; "Misinformation Related to the 2019–20 Coronavirus Pandemic," in *Wikipedia*, April 27, 2020, https://en.wikipedia.org/w/index.php?title=Misinformation_related_to_the_2019%E2%80%9320_coronavirus_pandemic&oldid=953544247; *Trump Suggests Viral Treatments Including UV Light and Disinfectants*, accessed April 27, 2020, <https://www.youtube.com/watch?v=vfLZOkn0chc>.

¹⁶ Samuel Woolley, *The Reality Game: How the next Wave of Technology Will Break the Truth*, First edition (New York: PublicAffairs, 2020), 15.

analysis and education, media studies, and information theory: it demands that we—individuals and communities—engage not only with the truthfulness and factuality of information, but with affective, and perceptual responses to our informational flows.

Theoretical Framing: Strong Objectivity

Central to this thesis is the theoretical framing proposed by Sandra Harding in her seminal "After the Neutrality Ideal: Science, Politics, and 'Strong Objectivity'" that outlines a new framework of "strong objectivity" that challenges dominant views of neutrality and knowledge generation.¹⁷ Pointing to the natural sciences, Harding asserts that methodological and procedural choices to remove "distorting cultural assumptions" from research are themselves "guided by assumptions about which have been the most successful such procedures in the past."¹⁸ Described in chapter 3, the interviews and engagement process conducted with MassVote, a Boston-based and youth-oriented civic education and engagement non-profit organization, aimed to establish, to use Harding's language, grounds for "for gaining causal, critical accounts of the dominant cultural standards" from outside, often from marginal perspectives.¹⁹ In approaching malinformation, it is critical that both the research methods and subject matter considerations embrace this theoretical grounding; the warping of information and related affective and perceptual dynamics may muddle otherwise traditional research perspectives.

¹⁷ Sandra Harding, "After the Neutrality Ideal: Science, Politics, and 'Strong Objectivity,'" *Social Research* 59, no. 3 (1992): 567–87.

¹⁸ Harding, 574.

¹⁹ Harding, 579.

This thesis embraces Harding's perspective with the hope of producing useful outputs and actionable outcomes. In more specific terms, Harding outlines the potential strategies of "strong objectivity" that will serve as the theoretical backbone of this thesis:

Strong objectivity would specify strategies to detect social assumptions that (a) enter research in the identification and conceptualization of scientific problems and the formation of hypotheses about them (the "context of discovery"), (b) tend to be shared by observers designated as legitimate ones, and thus are significantly collective, not individual, values and interests, and (c) tend to structure the institutions and conceptual schemes of disciplines. These systematic procedures would also be capable of (d) distinguishing between those values and interests that block the production of less partial and distorted accounts of nature and social relations ("less false" ones) and those—such as fairness, honesty, detachment, and, we should add, advancing democracy—that provide resources for it. This is the point where standpoint epistemologies can be useful.²⁰

The observation of the phenomena described in this thesis and its "social assumptions" are approached through the lens of highly networked youth – high school-aged interns leading civic engagement and education efforts. As we will discuss in chapter 3, social assumptions of "common sense," knowledge, and trust are all in play. However, this thesis will downplay, when possible, questions of epistemology and knowledge production in favor of individual and community-based concerns of perception, information consumption, and affective response. The discussion around malinformation

²⁰ Harding, 580.

has grown significantly over the past four years following the 2016 election and the maturation of social media as a political engagement platform. In 2008 and 2012, uses of social media sites like Facebook and Twitter were emergent, innovative platforms to engage with mostly younger voters, but these sites now represent critical arenas for mainline political contestation. Collective observations have developed in turn, with media from numerous scholars describing the complex array of issues at hand.

Planning scholarship provides firm ground to stand on in the interest of "advancing democracy" and as an aspiration to expand synthetic analysis to action and resilience. Heather Campbell lays out a framework to approach the relationship between *is* and *ought* in planning, outlining how analytical and synthetic knowledge contribute, conflict, and collaborate in planning.²¹ Campbell points to the famous case of John Snow and the cholera maps to unpack these challenges; while the value of the analytical knowledge helps to pin-point the problem, synthetic knowledge enables planners to "[arrive] at the judgment that the tap actually needs to be turned off now."²² This relationship of knowledge and action is fraught, not least in the history of planning. Yet, the high stakes of the phenomena this thesis describes demand action, even in the face of potentially incomplete analytical knowledge. Campbell suggests how this position may be tempered:

²¹ Campbell, Heather. "Planning to Change the World: Between Knowledge and Action Lies Synthesis." *Journal of Planning Education and Research* 32, no. 2 (June 2012): 135–46. <https://doi.org/10.1177/0739456X11436347>.

²² Heather Campbell, "Planning to Change the World: Between Knowledge and Action Lies Synthesis," *Journal of Planning Education and Research* 32, no. 2 (June 2012): 135–46, <https://doi.org/10.1177/0739456X11436347>.

The best that can be hoped for is that some improvement is achieved. Regardless of the actual outcomes, it is the preparedness to keep learning, which is the crucial buffer against unrestrained arrogance.

....The reasoning of synthesis cannot provide the certainty of being right or finding the good, but it is concerned with the search for something better. (143)

Finally, it is critical to consider the asymmetry that is embedded in the problems this thesis aims to tackle. The power of a tweet from Donald Trump makes for instant and compelling news; and most tweets from you or me would be hard-pressed to get triple-digit likes. This is the power differential of social media. More subtly, there also exists a power differential between the aggressor/disseminator and the defender/fact-checker in questions of malinformation. Taking cues from cybersecurity research, we can observe the advantage of first exposure or first strike, as the lasting impact of malinformation—even after fact-checking or correction.²³

Together, these theoretical frameworks – strong objectivity, planning action, and asymmetrical power differentials – provide solid ground to approach and engage the logics, effects, and affects of malinformation. Across the proceeding three episodes, this thesis will utilize these frameworks to unpack, approach, and propose remedies to the negative individual and community impacts of malinformation.

Towards Network Citizenship

In an effort to develop strategies that address the failures of decentralized media outlined by Benkler, Farris, and Roberts and to operationalize ideas of strong objectivity for

²³ Benkler, Faris, and Roberts, *Network Propaganda*.

community resilience against malinformation, I propose a framework of network citizenship. I develop this framework into a set of three workshops designed for civic engagement with high school students, facilitated through the MassVote Young Civic Leader's program. The hope of these workshops is to initiate conversations and thought about these issues and spark new, daily activity to help curb malinformation.

The need for a more robust understanding of how we participate in online spaces and how those spaces impact offline social networks is clear; as I discuss in chapters three and four, a framework for network citizenship explores topics such as the competition for knowledge (first article, post, or comment, etc.), bandwagon effects and paradoxes, the effective use of comment sections, and constraints put upon virality. Through the following chapters, this thesis will examine current approaches to malinformation, explore responses from high school-aged youth involved in civic efforts, and propose workshop frameworks to build resilience at scales of the individual, community, and society. The final chapter of this thesis takes the form of workshop templates, designed for and in part by the YCL participants and MassVote. Each self-contained workshop includes an icebreaker, two to three activities, and reflective questions on each section to prompt the audience. The goals of these workshops are to problematize and operationalize the ideas that emerged from the participant interviews, primarily focused on constraining virality and balancing impacts of the attention economy, building more resilient community discussions, and thinking about how lessons learned from malinformation can be enacted in physical spaces and offline social networks.

0II // Inoculation

Responses to malinformation have evolved over time, with scholars, journalists, and the general public learning more about both dis- and misinformation. This thesis builds on our understanding of the current state of the problem, focusing on perspectives from high school-aged youths and formulating solutions for what communities can do to build resilience. To that end, this thesis engages feminist theories of strong objectivity and standpoint epistemologies, critically examining existing solutions to malinformation and contemporary analysis of the problem.

I first provide a brief overview of the history of bad information. I then turn towards a discussion of contemporary theories and models of malinformation, as well as the platform-based responses from tech giants like Facebook and Twitter. Last, I will survey proposals from municipalities, cybersecurity experts, civic technologists, and political groups. Through reviewing recent and past cases of and solutions to malinformation, this thesis aims to contextualize the impacts on civic life in time and identify areas where these past solutions fall short, in particular for teens and high school-aged youth.

Bad Information

The dissemination of malinformation is not a new phenomenon. Cases of politically-motivated propaganda trace back as far back as ~44 BCE with Octavian's campaign against Mark Antony via coin messaging.²⁴ Izabella Kaminska writes of ancient Rome that Octavian used tweet-like "short, sharp slogans" inscribed on the coins to frame

²⁴ Julie Posetti and Alice Matthews, "A Short Guide to the History of 'Fake News' and Disinformation: A New ICFJ Learning Module," International Center for Journalists, accessed April 12, 2020, <https://www.icfj.org/news/short-guide-history-fake-news-and-disinformation-new-icfj-learning-module>.

Antony as a corrupt puppet, no longer loyal to Rome after his affair with Cleopatra.²⁵

Technology changed, and the pace and nature of malinformation with it. The 1439 introduction of the printing press opened the door for numerous varieties of propaganda, mis- and disinformation, and 'fake news' alike; false stories intended to stoke social or racial tensions, inspire religious zeal, or sow discord over political events became increasingly frequent in the growing mass media as the centuries carried onward.²⁶

Now, more than ever, malinformation can travel with ease across digital news spaces and social media platforms. But what separates our current experience of malinformation from previous moments is not only its media—certainly the printed page had advantages over the hammered coin—but also the systems and scale of operation. Some of the defining challenges of bad information in the digital age are **computational propaganda**, driven by autonomous bots, big data strategies, and social media algorithms,²⁷ and the brittleness of available responses to an ecosystem of **network propaganda**: system-wide strengths or weakness to bad information embedded in the media landscape.²⁸

In *Network Propaganda*, Yochai Benkler, Robert Faris and Hal Roberts provide a set of brief and useful definitions to frame contemporary phenomena. They write:²⁹

- "*Propaganda*" and "*disinformation*": manipulating and misleading people intentionally to achieve political ends.

²⁵ Izabella Kaminska, "A Lesson in Fake News from the Info-Wars of Ancient Rome," January 17, 2017, <https://www.ft.com/content/aaf2bb08-dca2-11e6-86ac-f253db7791c6>.

²⁶ Jacob Soll, "The Long and Brutal History of Fake News," *POLITICO Magazine*, accessed April 14, 2020, <http://politi.co/2FaV5W9>.

²⁷ Samuel C. Woolley and Philip N. Howard, "Automation, Algorithms, and Politics| Political Communication, Computational Propaganda, and Autonomous Agents — Introduction," *International Journal of Communication* 10, no. 0 (October 12, 2016): 9.

²⁸ Benkler, Faris, and Roberts, *Network Propaganda*.

²⁹ Benkler, Faris, and Roberts, 24.

- "*Network propaganda*": the ways in which the architecture of a media ecosystem makes it more or less susceptible to disseminating these kinds of manipulations and lies.
- "*Bullshit*": communications of outlets that don't care whether their statements are true or false, and usually not what their political effect is, as long as they make a buck.
- "*Misinformation*": publishing wrong information without meaning to be wrong or having a political purpose in communicating false information.
- "*Disorientation*": a condition that some propaganda seeks to induce, in which the target population simply loses the ability to tell truth from falsehood or where to go for help in distinguishing between the two.

Of these phenomena, disorientation may be the most important for this study. Authors Benkler, Faris, and Roberts describe the effect of "induced misperceptions," which bring about a state in which it is "impossible for people in the society subject to the propagandist's intervention to tell truth from non-truth."³⁰ Their analysis of this effect draws upon Peter Pomerantsev's 2015 book *Nothing is True and Everything is Possible*; Pomerantsev describes this state of disorientation as one where members of the public are left "confused, paranoid, and passive" and living in a "virtual reality that can no longer be mediated or debated by any appeal to 'truth.'"³¹ As Benkler and Faris describe, this sort of 'epistemic crisis' enables a multitude of truths where trust in institutions erodes and paranoia pervades civic life.

³⁰ Benkler, Faris, and Roberts, 36.

³¹ Benkler, Faris, and Roberts, 36.

It is critical to note, however, that while the spotlight has often been shown on Russian and Ukrainian "bad actors" with regard to online malinformation, far earlier cases of this sort of online mis- and disinformation have their roots within the United States.³² Without a doubt, foreign groups like the Internet Research Agency (IRA) were a part of the malinformation landscape in the 2016 US presidential election; the tens of thousands of Twitter, Facebook, and Instagram posts from the IRA alone have been catalogued, and subjected to analysis, and understood.³³ However, long before Russian trolls used combinations of artificial intelligence (AI) video generators and rough and ready widgets from IFTTT,³⁴ a 2010 Massachusetts special senate election in provided an early case of what was to come.³⁵ The race between Scott Brown and Martha Coakley was tight, and an anonymous conservative group thought to be backed by the American Future Fund³⁶ took a now-familiar approach to try and turn the tide in an otherwise solidly democratic area.³⁷ Twitter bots attacked, posting around 185,000 posts suggesting the Coakley is anti-Catholic—a potent accusation, given Massachusetts's large Irish Catholic population and history of Protestant-Catholic tensions. The bots were noticed by a pair of researchers at Wellesley, Panagiotis Takis Metaxas and Eni Mustafaraj, who noticed that the accounts had no profile photos or descriptive text and largely just followed each other.³⁸ This sort of easily detectable account generation would later be

³² Benkler, Faris, and Roberts, *Network Propaganda*; Faris et al., "Partisanship, Propaganda, and Disinformation: Online Media and the 2016 US Presidential Election"; Woolley, *The Reality Game*.

³³ Howard et al., "The IRA, Social Media and Political Polarization in the United States, 2012-2018."

³⁴ If This, Then That. A popular front-end automation tool.

³⁵ Woolley, *The Reality Game*.

³⁶ Matt Viser, "Conservative Group Used Tweet Strategy against Coakley," *Boston.Com*, May 4, 2010, http://archive.boston.com/news/nation/articles/2010/05/04/conservative_group_used_tweet_strategy_against_coakley/.

³⁷ Woolley, *The Reality Game*.

³⁸ Woolley; Viser, "Conservative Group Used Tweet Strategy against Coakley."

combated with more sophisticated 'aging' techniques to make the accounts look as if they had been used by real people. The case of Coakley and Brown was a forerunner of things to come in more than just technology: The Twitter campaign worked, despite being detected, and news media including the *National Catholic Register* and *National Review* ran the Coakley anti-Catholic story.³⁹ Scott Brown won, and served as a US Senator until he was defeated by Elizabeth Warren in 2013.⁴⁰

The 2010 special election could be read alongside Adam Curtis's 2016 documentary *HyperNormalisation*, in which he endorses William Gibson's vision of cyberspace: a network of power facilitated by technology that would be utterly invisible to the general public.⁴¹ Somewhere between the black boxes, algorithms quietly driving media diets, and biases embedded social media platforms, the door opened for computational propaganda. But at the same time, the disorientation effect described above is not unique to online life. Curtis points to the avant-garde thespian turned technologist Vladislav Surkov, who helped write a new playbook and cement power for Vladimir Putin's administration.⁴² Surkov's efforts created an environment that "[undermined citizens'] very perception of the world so they are never sure what is really happening" through contradictory and paradoxical acts like sponsoring anti-fascist organizations while simultaneously supporting skinheads and even parties that opposed Putin himself.⁴³ Curtis reports one journalist's take: "It's a strategy of power that keeps any opposition 'constantly confused' – a ceaseless shape-shifting that is unstoppable

³⁹ Woolley, *The Reality Game*.

⁴⁰ "Scott Brown (Massachusetts)," Ballotpedia, accessed April 15, 2020, [https://ballotpedia.org/Scott_Brown_\(Massachusetts\)](https://ballotpedia.org/Scott_Brown_(Massachusetts)).

⁴¹ Adam Curtis, *Hypernormalisation*, 2016, <https://www.youtube.com/watch?v=-fny99f8amM>.

⁴² Curtis.

⁴³ Curtis.

'because it is indefinable.'"⁴⁴ Lest we take away from this that Russia is the sole player in the business of disorientation, prominent conservative pundits have pursued similar tactics for decades. As Benkler, Faris and Roberts write of Rush Limbaugh:

As we will see, disorientation has been a central strategy of right-wing media since the early days of Rush Limbaugh's emergence as a popular conservative radio talk show host and political commentator with millions of listeners.

Limbaugh's decades-long diatribes against one or all of what he calls "the four corners of Deceit"—government, academia, science, and the media—seem designed to disorient his audience and unmoor them from the core institutionalized mechanisms for defining truth in modernity.⁴⁵

At the same moment, these invisible and perplexing systems of power *can* enable new avenues for civic engagement and activation. Since the 2011 Arab Spring, the now-famous utilization of social media to organize protests and civic actions across Tunisia, Egypt, and beyond, social media has been understood as capable of sparking mobilization and amplifying emotional and personal stories.⁴⁶ However, the Arab Spring protests were not an end in and of themselves—as Jessi Hempel of *Wired* writes, "Social media, it turns out, was not a new path to democracy, but merely a tool."⁴⁷

In my application to the Department of Urban Studies and Planning at MIT I wrote about how the questions raised by technology in the public sphere are increasingly and immediately epistemological and ontological in nature. This holds true in the case of

⁴⁴ Curtis.

⁴⁵ Benkler, Faris, and Roberts, *Network Propaganda*, 36.

⁴⁶ *American Scientist*, "2011: SOCIAL MEDIA ENABLES ARAB SPRING," *American Scientist* 107, no. 1 (February 2019): 55–56.

⁴⁷ Jessi Hempel, "Social Media Made the Arab Spring, But Couldn't Save It," *Wired*, January 26, 2016, <https://www.wired.com/2016/01/social-media-made-the-arab-spring-but-couldnt-save-it/>.

this thesis; efforts to separate truth from falsehood and morphologize online identities enter into the uneven and contested terrains of dissecting deeply personal truths. And in today's highly polarized political ecosystem, those truths and their validity reflect *who* and *what* we are—to each other and to ourselves. These epistemic and ontological questions are critical, but also bottomless sepulchers of attention and energy; the next presidential election is less than seven months away and poised to nucleate even more disorienting information. To that end, the question of epistemic truth and ontological identity within the digital realm will be largely ignored in this thesis. Instead, I will focus on understanding malinformation and its impacts on the individual and interpersonal networks.

Approaches to Understanding Malinformation

This section will provide a brief overview of several distinct disciplinary approaches to malinformation and its dissemination. By surveying efforts already taking place, this thesis will be better positioned to consider malinformation from a planning perspective that takes an action-oriented posture. The approaches surveyed here will include media and social media network analysis, history, and case-study based approaches.

Additionally, I will touch upon the use of agent-based modeling and the use of epidemiological models that compare bad information to a disease. Lastly, this section will summarize applications of military, game or information theory lenses, which provide useful resources for operationalizing adversarial tactics and identifying potential vulnerabilities in the network landscape.

The architecture of asymmetrical media channels and "propaganda feedback loops" are two central themes of the macro-scaled analysis in 2018's *Network Propaganda* by

Yochai Benkler, Robert Faris, and Hal Roberts. The authors provide a snapshot of the media landscape that maps the relationship of news sources and consumption across Facebook, Twitter, and the open web as well as providing case studies on how different phenomena materialize and impact the decisions and truthfulness of public figures. In studying how information moves in the murky waters between unwitting misinformation, targeted disinformation, and general low-effort bullshit filling time on local news, Benkler, Faris, and Roberts provide a vision of network propaganda:

The effects we define below...come not from a single story or source but from the fact that a wide range of outlets, some controlled by the propagandist, most not, repeat various versions of the propagandist's communications, adding credibility and improving recall of the false, misleading, or otherwise manipulative narrative in the target population, and disseminating that narrative more widely in that population.⁴⁸

Repetition, iteration, versioning, and convergent credentialing are central to community and individual conceptualizations of what is or is not believable. A niche, targeted piece of information can spread rapidly across more moderate and mainstream channels, particularly when given a loud amplifier. While not all Alex Jones messages make it to Fox News, "deep state" tirades are now status quo, and Amazon Alexa has a voice-enabled skill to access the latest QAnon "research."⁴⁹ QAnon is a far-right conspiracy theory originating from a group posting on the imageboard 4chan with the username Q; all users on 4chan, by default, are named "anonymous" or simply "anon." The theories, predictions, and observations posted by QAnon and the associated

⁴⁸ Benkler, Faris, and Roberts, *Network Propaganda*, 33.

⁴⁹ "Amazon.Com: Qanon Qresearch: Alexa Skills," accessed April 15, 2020, <https://www.amazon.com/WillPower74-Qanon-Qresearch/dp/B07L69SKPR>.

movement, the "Great Awakening," aim to reveal power structures that subvert democracy, specifically those related to "the Cabal" made up of individuals such as George Soros, Hilary Clinton, and, previously, the Rockefeller family.⁵⁰ Featured on popular QAnon information site InTheMatrixxx.com, The freely available "Qanon Qresearch" voice-activated Amazon Alex skill was published by WillPower74, and delivers updates on QAnon's findings; several reviews call out the rallying cry of Q followers, "Where We Go One, We Go All" or WWG1WGA.⁵¹ As Julia Carrie Wong from The Guardian writes, QAnon is composed of "a volatile mix of Pizzagate, InfoWars and the Satanic Panic of the 1980s, multiplied by the power of the internet and with an extra boost from a handful of conservative celebrities."⁵² Succinctly, Wong writes, "chances are that the more you read about it, the more confused you will be."⁵³ Despite all the trappings of extreme, fringe politics, the conspiracy theory has appeared in public: for example, a "Q" emblazoned Deputy Mike Patten was seen shaking hands with Vice President Pence and recent presence at a recent Tampa Bay Trump rally.⁵⁴

When extreme perspectives are inflected to call upon underlying biases and tensions, they can spread quickly. Benkler, Faris, and Roberts also identify the "propaganda feedback loop" and its impacts on a network; this sort of loop ties the media outlet or

⁵⁰ "IntheMatrixxx - New to Q?," accessed May 17, 2020, <https://www.inthematrixxx.com/index.php/new-to-q-click-here>.

⁵¹ "Amazon.Com: Qanon Qresearch: Alexa Skills."

⁵² Julia Carrie Wong, "What Is QAnon? Explaining the Bizarre Rightwing Conspiracy Theory," *The Guardian*, July 31, 2018, sec. Technology, <https://www.theguardian.com/technology/2018/jul/30/qanon-4chan-rightwing-conspiracy-theory-explained-trump>.

⁵³ Wong.

⁵⁴ "What You Need to Know About Far-Right Conspiracy QAnon," *Fortune*, accessed May 12, 2020, <https://fortune.com/2018/08/01/qanon-conspiracy-trump-tampa-rally/>; "Double Trouble for Broward Deputy: One Patch for QAnon Conspiracy, Another for His SWAT Team," *Tampa Bay Times*, accessed May 12, 2020, <https://tampabay.com/news/military/double-trouble-for-broward-deputy-one-patch-for-qanon-conspiracy-another-for-his-swat-team-20181204/>.

politician to extreme views made mainstream through repetition, "[making] it difficult for a media outlet or politician to adopt a consistently truth-focused strategy without being expelled from the network and losing influence in the relevant segment of the public."⁵⁵ And while much of the onus of responsibility lies with the media outlets and politicians who submit to such feedback loops and normalization, it is not by accident that media consumers tend to dine on familiar fare. Put succinctly, from *Network Propaganda*, "...we tend to believe what we want to believe, seek out confirming information, reject or discount disconfirming evidence, and to do otherwise requires hard cognitive and emotional work."⁵⁶

The resulting media landscape is an asymmetrical one, where relatively extreme outlets on the right fill the same roles as relatively moderate ones on the left. *Network Propaganda* maps out the articles shared during the 2016 election across Twitter and Facebook, where news sources like the *New York Times* and *Washington Post* take central roles on the left, The Hill takes that role in the center, and Breitbart occupies them on the right (figure 1). The authors describe this separation, which has become more extreme, not as a polarized far-right and far-left division, but as a separation between an insular right-wing echo chamber and everyone else (figure 2).⁵⁷ They characterize this right-wing media ecosystem as possessing a "susceptibility to information cascades, rumor and conspiracy theory, and drift toward more extreme versions of itself" that we might contrast with other media' s—both centrist and left—tendencies towards journalistic norms, and their imposition of "higher reputational costs on sites and authors

⁵⁵ Benkler, Faris, and Roberts, *Network Propaganda*, 33.

⁵⁶ Benkler, Faris, and Roberts, 76.

⁵⁷ Benkler, Faris, and Roberts, 73–74.

who propagate rumor[s]", and their use of rapid fact-checking and distribution of corrective information when needed.⁵⁸

⁵⁸ Benkler, Faris, and Roberts, 73–74.

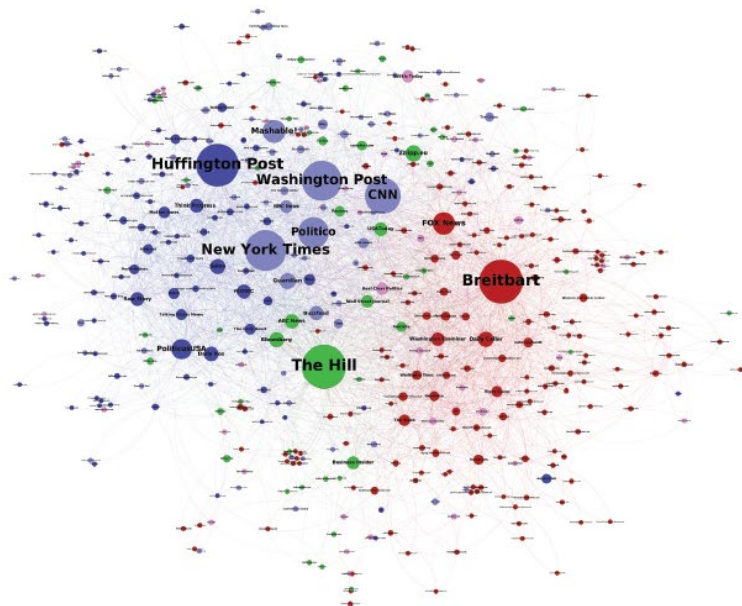


FIGURE 2.8 Network map based on Twitter media sharing, October 2015.

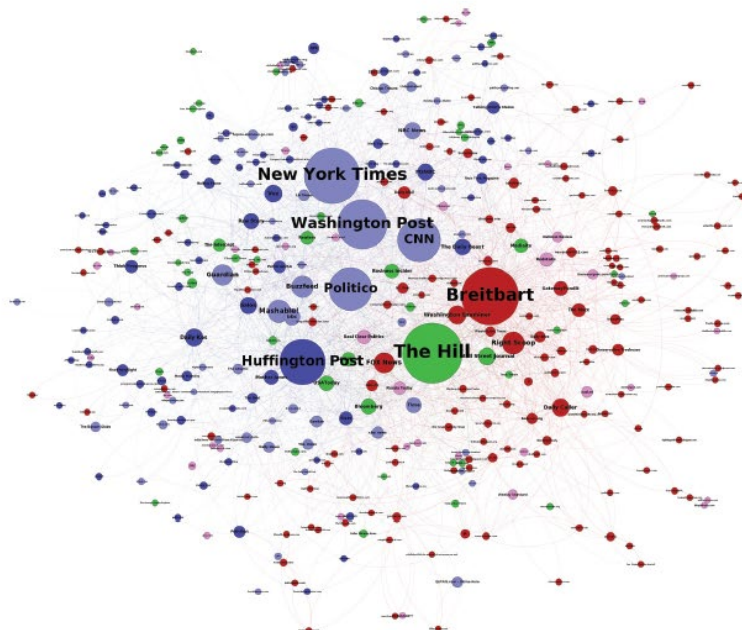


FIGURE 2.9 Network map based on Twitter media sharing, February 2016.

Figure 1: Twitter sharing maps of left-wing (Blue), right-wing (Red), and centrist (green) news sources, scaled by popularity. From Benkler et al. ⁵⁹

⁵⁹ Benkler, Faris, and Roberts, 58.

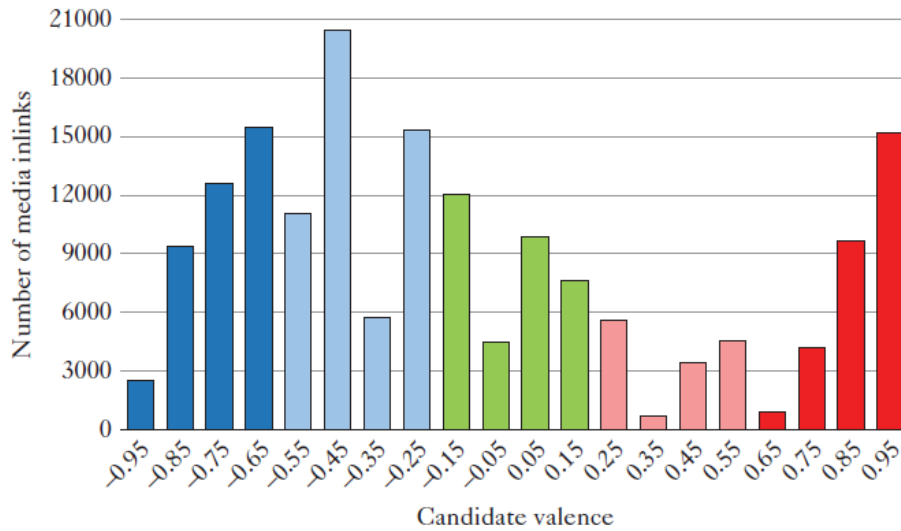


FIGURE 2.5 Partisan distribution of top 250 media sites by media inlinks, 2015–2016.

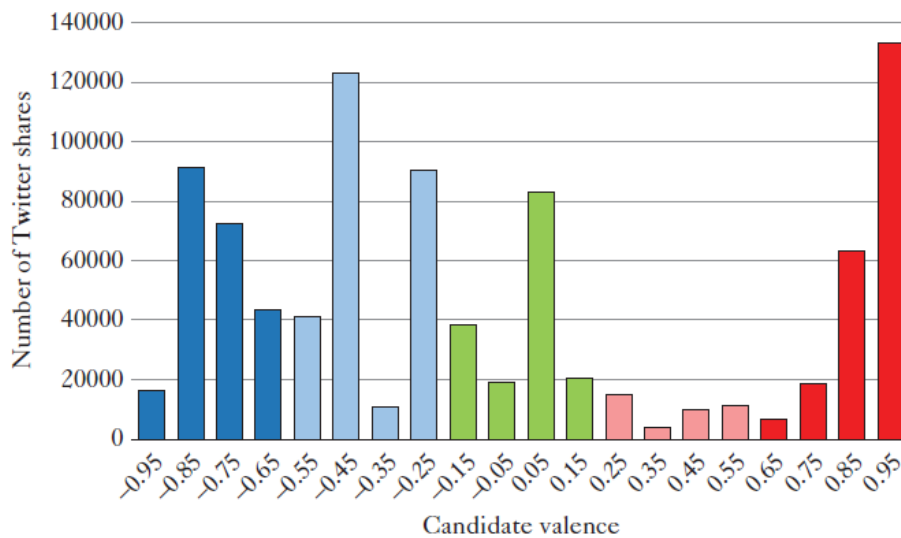


FIGURE 2.6 Partisan distribution of top 250 media sites by Twitter shares, 2015–2016.

Figure 2: Media in links / Twitter share distribution based on candidate valence from left-wing (-1, blue) to right-wing (1, red). From Benkler et al.⁶⁰

⁶⁰ Benkler, Faris, and Roberts, 55.

This all occurs within the context of novel economic incentives created by the commodification of attention—part of what Shoshana Zuboff describes in her 2019 *The Age of Surveillance Capitalism*.⁶¹ Every action online contributes to an explicit and targeted digital portrait of your interests, views, and activities, making it harder to navigate unfamiliar information ecologies. To classify the different malinformation with the contemporary, Claire Wardle's 2019 *Essential Guide to Understanding Information Disorder* provides a useful framework and taxonomy, ranked from lowest harm to highest harm:⁶²

- SATIRE OR PARODY: No intention to cause harm but has potential to fool.
- FALSE CONNECTION: When headlines, visuals or captions don't support the content.
- MISLEADING CONTENT: Misleading use of information to frame an issue or individual.
- FALSE CONTEXT: When genuine content is shared with false contextual information.
- IMPOSTER CONTENT: When genuine sources are impersonated.
- MANIPULATED CONTENT: When genuine information or imagery is manipulated to deceive.
- FABRICATED CONTENT: New content that is 100% false, designed to deceive and do harm.

⁶¹ Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, First edition (New York: PublicAffairs, 2019).

⁶² “Information Disorder.”

These categories are useful for priming communities on the types of media they might encounter, though here I am concerned primarily with false connection, misleading content, and false context. Manipulated, altered, or fabricated content – like deepfakes, shallow fakes, and algorithmically generated malinformation – are serious concerns, but they potentially demand more technically sophisticated solutions; some initial steps in this space include deepfake detection algorithms⁶³ baked into social media platforms and cryptographic public-key signatures on media.⁶⁴ Information and game theory analyses have also worked to categorize and describe how forms of malinformation operate. The below diagram from Carlo Kopp et al. suggests connections between five forms of information warfare deception. Of these effects, overt degradation (generation of noise) and denial (blinding or saturating) combine to increase uncertainty,⁶⁵ aligning closely with concepts of disorientation (figure 3).

⁶³ “Facebook AI Launches Its Deepfake Detection Challenge - IEEE Spectrum,” IEEE Spectrum: Technology, Engineering, and Science News, accessed April 15, 2020, <https://spectrum.ieee.org/tech-talk/artificial-intelligence/machine-learning/facebook-ai-launches-its-deepfake-detection-challenge>.

⁶⁴ Stephen Wolfram, “A Few Thoughts about Deepfakes,” Scientific American Blog Network, accessed April 15, 2020, <https://blogs.scientificamerican.com/observations/a-few-thoughts-about-deepfakes/>.

⁶⁵ Carlo Kopp, Kevin B. Korb, and Bruce I. Mills, “Information-Theoretic Models of Deception: Modelling Cooperation and Diffusion in Populations Exposed to ‘Fake News,’” ed. Yong Deng, *PLOS ONE* 13, no. 11 (November 28, 2018): e0207383, <https://doi.org/10.1371/journal.pone.0207383>.

Deception Model Effects

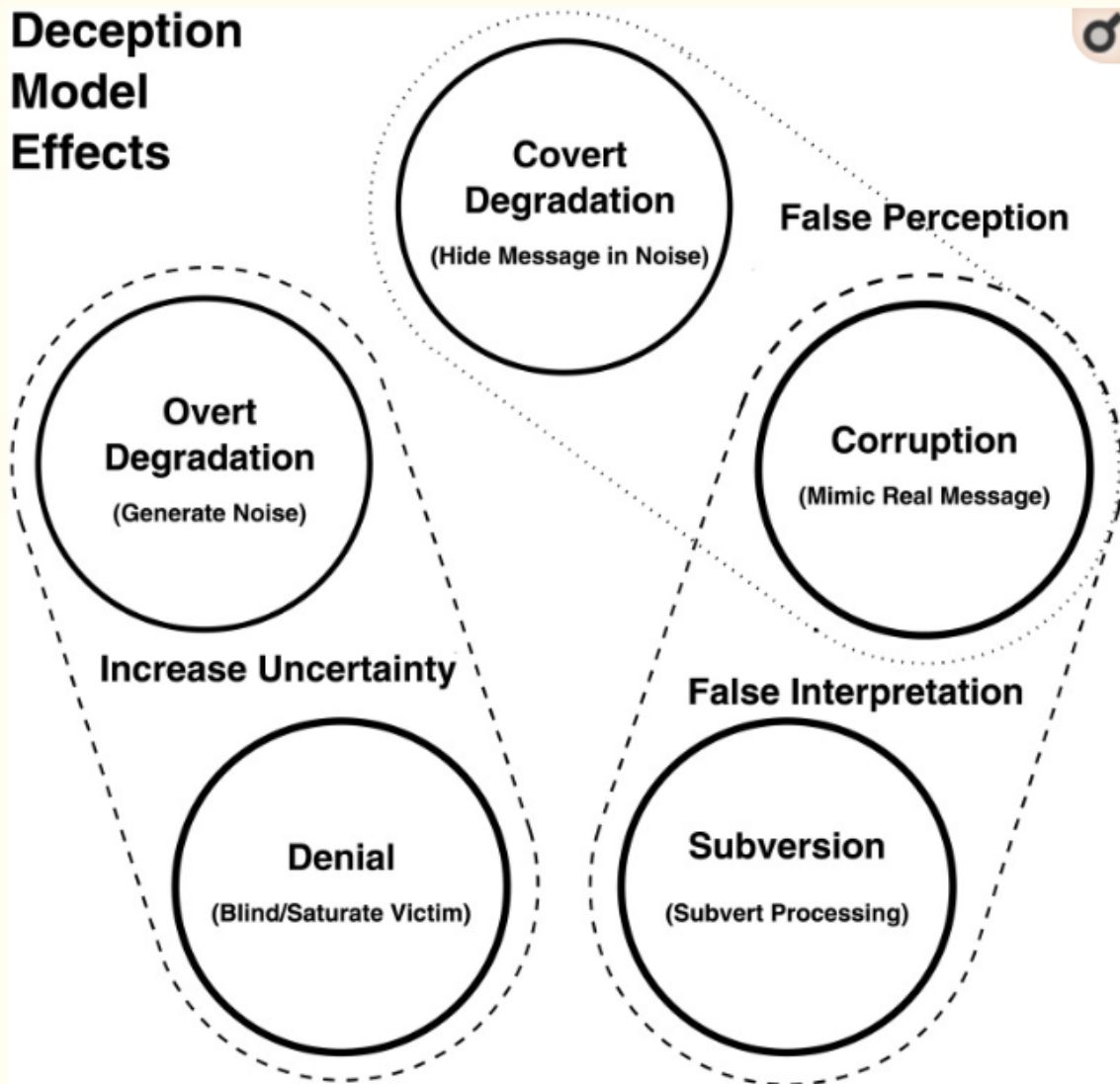


Fig 2

The effects of the four information-theoretic deception models.

The deception effect of increased uncertainty is produced by the overt form of *Degradation*, and by *Denial*. False beliefs resulting from false interpretation or false perception are produced by the covert form of *Degradation*, *Corruption* and *Subversion*.

Figure 3: Deception model effects and strategies. From Kopp, Korb, and Mills/

⁶⁶ Kopp, Korb, and Mills.

These and other models provide insight into system dynamics within social media networks and can be critical to understanding how content algorithms serve media and reinforce malinformation. Recent contributions to the study of malinformation suggest, for example, that certain degrees of clustering and polarization, but not too much, can have strong contributions to bandwagon effects and dynamics.⁶⁷ Another model suggests that even a small portion of a population that shares bad information can have a disproportionate impact on overall exposure.⁶⁸ The authors of the last study further suggest that a key measure to slow the spread of misinformation might be increasing the cost of social media deceptions:⁶⁹ increasing the costs either through a critical population (e.g. downvoting bad information) or costly online identities (e.g. requiring a phone number). However, models such as these are limited as solutions. Petter Törnberg notes in his 2018 "Echo chambers and viral misinformation: Modeling fake news as complex contagion" that:

While simulations offer an unparalleled possibility to study specific causal mechanisms, it should however be noted that the result of a computational model is not enough to draw definitive conclusions about real world dynamics, since the observed mechanism may be overshadowed by other factors.⁷⁰

⁶⁷ YEN-SHENG CHIANG, "Birds of Moderately Different Feathers: Bandwagon Dynamics and the Threshold Heterogeneity of Network Neighbors," *The Journal of Mathematical Sociology* 31, no. 1 (January 1, 2007): 47–69, <https://doi.org/10.1080/00222500601013536>; Petter Törnberg, "Echo Chambers and Viral Misinformation: Modeling Fake News as Complex Contagion," ed. Chris T. Bauch, *PLOS ONE* 13, no. 9 (September 20, 2018): e0203958, <https://doi.org/10.1371/journal.pone.0203958>.

⁶⁸ Kopp, Korb, and Mills, "Information-Theoretic Models of Deception."

⁶⁹ Kopp, Korb, and Mills.

⁷⁰ Törnberg, "Echo Chambers and Viral Misinformation."

Törnberg continues that the question of malinformation and polarization demands solutions for social media that "constitute the foundation for a common world" and "help weave, rather than fray, our social fabric."⁷¹ It is in this space that this thesis plays.

Platform Approaches and Reactions

Social media platforms themselves are now becoming active in documenting, understanding, and policing malinformation spreading through their services. Twitter has ostensibly been transparent and active. Recent actions taken by the company include banning political advertisements ahead of the 2020 election⁷² and creating new rules that label modified or deceptive content and more liberally remove content deemed to be harmful.⁷³ Twitter has been making additional efforts to detect suspicious or malicious users, including deleting over one million fake accounts each day⁷⁴ and tracking phone numbers used to generate multiple accounts.⁷⁵

Reddit's approach has adopted a combination of community moderation and platform investigations, the results of which are released in an annual transparency report. The platform discovered 944 suspicious accounts thought to have originated at the Internet Research Agency (IRA) and released a thorough overview of the key findings on

⁷¹ Törnberg.

⁷² Tony Romm, "Twitter to Ban All Political Ads amid 2020 Election Uproar," Washington Post, accessed April 15, 2020, <https://www.washingtonpost.com/technology/2019/10/30/twitter-ban-all-political-ads-amid-election-uproar/>.

⁷³ "Building Rules in Public: Our Approach to Synthetic & Manipulated Media," accessed April 15, 2020, https://blog.twitter.com/en_us/topics/company/2020/new-approach-to-synthetic-and-manipulated-media.html.

⁷⁴ Craig Timberg, "Twitter Is Sweeping out Fake Accounts like Never before, Putting User Growth at Risk," Washington Post, accessed April 15, 2020, <https://www.washingtonpost.com/technology/2018/07/06/twitter-is-sweeping-out-fake-accounts-like-never-before-putting-user-growth-risk/>.

⁷⁵ Casey Newton, "Twitter Starts Tracking Phone Numbers to Prevent Its Worst Users from Creating New Accounts," The Verge, February 26, 2015, <https://www.theverge.com/2015/2/26/8116645/twitter-improves-abuse-reporting-tools-phone-numbers>.

the accounts.⁷⁶ Interestingly, Reddit also made available archived links to the accounts, including all posts, comments, and measures on the site as of 2017.⁷⁷

In the wake of COVID-19 related malinformation, Facebook-owned chat messaging service WhatsApp has begun to implement restrictions on how many times a message can be forwarded in a move it describes as 'constraining virality.'⁷⁸ WhatsApp served as a major platform for the spread of disinformation, particularly in the case of the 2018 Brazilian Presidential election.⁷⁹ Facebook itself has been active, but less convincing in its efforts to curb malinformation; targeted advertisements and boosts have proven effective in delivering deceptive content to the right audiences.⁸⁰

These examples of platform responses illustrate a wide range of approaches to curbing malinformation spread, including removing suspicious accounts and publicize internal findings to its user bases such that they can better understand the tactics and forms of bad information. Individuals have more control over their engagement with social media platforms and content; they can utilize accessible and robust ad-blockers that can mute commercial or deceptive messages, and are hopefully becoming savvier in the critical assessment of news media. There remain questions of who bears the responsibility of guarding against malinformation, and indeed who *should*. Moreover,

⁷⁶ "R/Announcements - Reddit's 2017 Transparency Report and Suspect Account Findings," reddit, accessed April 15, 2020, https://www.reddit.com/r/announcements/comments/8bb85p/reddits_2017_transparency_report_and_suspect/.

⁷⁷ "Suspiciousaccounts - Reddit.Com," reddit, accessed April 15, 2020, <https://www.reddit.com/wiki/suspiciousaccounts>.

⁷⁸ WhatsApp, "Keeping WhatsApp Personal and Private," April 7, 2020, <https://blog.whatsapp.com/Keeping-WhatsApp-Personal-and-Private>.

⁷⁹ Latifa Abdin, "Bots and Fake News: The Role of WhatsApp in the 2018 Brazilian Presidential Election," *Casey Robertson* 41 (n.d.): 1.

⁸⁰ Russell Brandom, "Facebook's Misinformation Problem Goes Deeper than You Think," *The Verge*, March 17, 2020, <https://www.theverge.com/2020/3/17/21183341/facebook-misinformation-report-nathalie-marechal>.

critiques leveled at platforms argue that years of inaction have created the ideal network conditions for malinformation to spread: Joan Donovan writes in *Nature* that it is only recently that "tech companies are taking action against misinformation because the consequences of their doing nothing have become more obvious," and that "tech companies prefer to downplay the influence of their platforms, rather than to make sure that influence is understood."⁸¹ Simply, Donovan writes, "[m]oderating content after something goes wrong is too late."⁸²

Policy and Cybersecurity Responses to Malinformation

Beyond social media platforms' responses, state policies and agency actions have begun to respond; such responses have included transparency and reporting mandates, post moderation, joint statements and agreements with online services, educational efforts, and in some cases, criminal charges.⁸³ Some of the most tangible actions have taken place in the EU, where the 2018 Code of Practice on Disinformation (CPD) has been adopted by Facebook, Google, Twitter, Mozilla; supporters assert that the CPD will help more transparently identify political advertisements on their platforms and provide transparency surrounding automation.⁸⁴ This code relates closely to work released by the EU's High Level Expert Group (HLEG) on Fake News and Online Disinformation, released earlier in the same year as the CPD.⁸⁵ Similarly, this report emphasizes the

⁸¹ Joan Donovan, "Social-Media Companies Must Flatten the Curve of Misinformation," *Nature*, April 14, 2020, <https://doi.org/10.1038/d41586-020-01107-z>.

⁸² Donovan.

⁸³ Ruth Levush, "Government Responses to Disinformation on Social Media Platforms," Web page, September 2019, <https://www.loc.gov/law/help/social-media-disinformation/compsum.php>.

⁸⁴ Anonymous, "Code of Practice on Disinformation," Text, Shaping Europe's digital future - European Commission, September 26, 2018, <https://ec.europa.eu/digital-single-market/en/news/code-practice-disinformation>.

⁸⁵ Anonymous, "Final Report of the High Level Expert Group on Fake News and Online Disinformation," Text, Shaping Europe's digital future - European Commission, March 12, 2018,

importance of encouraging transparency, media literacy, tool development, diversity in the media network, and further research on the topic of malinformation.⁸⁶ Important to note is that US policy surrounding the evolving landscape of malinformation has not made as significant formal developments. In general, these efforts are a step in the right direction, particularly in the case of the EU's CPD and HLEG Fake News report; efforts to support rigorous and independent news outlets, educational efforts with specific scopes and regions, and transparency requirements are important initiatives and measures. However, the approaches so far remain focused on system-wide solutions and room remains to focus on individuals and communities. It is important to note that US policy surrounding the evolving landscape of malinformation has not made such significant formal developments, and has generally been comprised of fragmented and incomplete solutions and slowed by inaction and confusion.

Cybersecurity frameworks have also been applied to understanding and working to curbing malinformation. Much like in hacking and cybersecurity, the attacker—in this case, someone spreading malinformation—has a strong advantage over the defenders. This asymmetry has been described as an "essential element" for both cyberwarfare and malinformation, as relatively small forces can have a large impact on persuasion, mis- and disinformation.⁸⁷ This sort of asymmetry extends further when large, well-resourced groups utilize malinformation techniques with overwhelming power.⁸⁸ The concern aligns with Benkler et al. 's third failing of decentralized internet activity, the failure of

<https://ec.europa.eu/digital-single-market/en/news/final-report-high-level-expert-group-fake-news-and-online-disinformation>.

⁸⁶ Anonymous.

⁸⁷ Eric Perakslis and Robert M. Califf, "Employ Cybersecurity Techniques Against the Threat of Medical Misinformation," *JAMA* 322, no. 3 (July 16, 2019): 207, <https://doi.org/10.1001/jama.2019.6857>.

⁸⁸ Perakslis and Califf.

individuals' power versus the power of "well-organized, data-informed central powers" to mobilize.⁸⁹ Taken more broadly, these cases of asymmetry and power differentials within media ecologies can be observed in a platform like Twitter: a tweet from you or me will have relatively limited reach when compared to information broadcast from @realDonaldTrump. Further, the secondary and tertiary news channels (e.g. Local news, word of mouth, re-tweets, and screenshots) that our messages may travel upon are much less mobile than of a presidential message. And finally, once disseminated, an inflammatory or divisive message is hard, if not impossible, to retract and correct; the first exposure to a piece of information may stick with an individual even after being corrected.

While policy and cybersecurity are important parts of a larger collection of solutions, the tendency towards binary labels (attacker and defender) and paramilitary tone do not fully align with the individual and community network goals of this thesis. Rather than suggesting a state of war and conflict surrounding us, I argue for the constructive necessity of holding a focus on cooperation, responsibility, and mutual gains that may be more constructive. The below sections explore how some of these ideals have been operationalized through civic technology and epistemological responses to malinformation.

Civic Technology Responses

Defined by Laurenellen McCann of Civic Hall, civic technology represents tools built by people in order "to create, support, or serve public good."⁹⁰ McCann suggests that often times, civic technology limits itself to tools built for governments, and that civic

⁸⁹ Benkler, Faris, and Roberts, *Network Propaganda*.

⁹⁰ "But What Is 'Civic'?", Civic Hall, accessed April 29, 2020, <https://civichall.org/civicist/what-is-civic/>.

technology has a much broader remit, including questions of society, the public realm, and "what it means to live in a democracy."⁹¹ Not surprisingly, civic technologists have undertaken numerous efforts to address the challenges of malinformation. Matt Stempeck's *Civic Tech Field Guide*⁹² and Shane Greenup's catalog of projects working to solve malinformation⁹³ are excellent surveys of projects. Appendix 1 of this section includes a table compiled from some examples and roughly following the organization of Greenup's catalog.

Greenup's 2018 evolving catalog breaks up current and past civic technology efforts into six major camps: evaluation services, critical solutions, crowdsourced annotation, social engineering, "behind the scenes," platform efforts, and others.⁹⁴ The appendix to this chapter includes as well a handful of blockchain-specific efforts, and more broad media created to shed light on malinformation. These categories are useful to understand the landscape of civic technology responses and to identify gaps in current efforts.

Evaluation services is the largest category, and broadly covers bias or risk indicators, as well as media in-links and some crowdsourced fact-checking. The overall objective of these tools, whether built using AI or conventional language processing, site rating or indexing or crowdsourcing - is to provide a quick and accessible frame for considering a piece of information or news site; Trusted News, now part of Factmata, employed a simple "traffic light system" where content would be flagged as "looks

⁹¹ "But What Is 'Civic'?"

⁹² "Civic Tech Field Guide," Civic Tech Field Guide, accessed November 7, 2019, <https://civictech.guide/>.

⁹³ Shane Greenup, "Catalogue of All Projects Working to Solve Misinformation and Disinformation," Medium, July 12, 2019, <https://misinfocon.com/catalogue-of-all-projects-working-to-solve-misinformation-and-disinformation-f85324c6076c>.

⁹⁴ Greenup.

good," "questionable," or "may be harmful."⁹⁵ Greenup's categories of "critical solutions" and "crowdsourced annotation" have some overlap with evaluation services; critical solutions tend to provide tools for annotated bookmarking (WorldBrain/Memex) or for comparison with contrasting articles (Rbutr); crowdsourced annotation platforms provide purpose-built community fact-checking. The crowdsourced annotation projects possess a great deal of potential but face challenges in building up a significant user base and, relatedly, place the burden responsibility of truth-seeking on the communities of readers.

The blockchain-based solutions generally focus on reputation, credibility, or verification as a currency/token. In the case of Civil, a proof-of-stake news platform, members bet their reputation tokens on whether an incoming news outlet should be allowed on the platform and are rewarded for successful stakes. Similarly, Trive encourages users to flag articles or inaccuracies through a blockchain-based "Truth Discovery" and rewards engaged users with tokens. The technical and monetary barriers to entry to these solutions are particularly high, and they face many of the same challenges as crowdsourced annotations platforms in: they demand extensive user engagement to function.

It is important to note the turnover rate for many of these projects. Some are combined with other, larger initiatives—as with Factmata's acquisition of Trusted News—but many others simply become defunct or abandoned. For a few of the listed projects, Whitepapers and descriptions remain the primary outputs, describing and outlining a solution to later be implemented.

⁹⁵ "TrustedNews," accessed April 29, 2020, <https://trusted-news.com/>.

Civic Technology Catalog

Evaluation services

Project Name	Sub-topic	Interface	Link
Disinformation Index	Media Risk Rating	Website + PDFs	https://disinformationindex.org/
Factmata	Bias indicator	API	https://factmata.com/
Web of Trust	Website Danger	Chrome Extension	https://www.mywot.com/
FakerFact	Bias indicator	Website + Extension	https://www.fakerfact.org/
TrustedNews	Bias indicator	Extension	https://trusted-news.com/
Our.News	Crowdsourced Fact-Checking	Web Platform	https://our.news/how-it-works/
Emergent	Crowdsourced Fact-Checking	Web Platform	http://www.emergent.info/
DeepFreeze	News Outlet Validator	Website	http://deepfreeze.it/index.php
FiB	Content Feed Evaluator	API (?)	https://devpost.com/software/fib

Blockchain-based solutions

Project Name	Sub-topic	Interface	Link
Civil	PoS News Platform	Blockchain	https://civil.co/
BitPress	News Credibility	Blockchain	https://medium.com/bitpress/bitpress-an-open-protocol-for-tracking-the-credibility-of-news-2f8c961cd67c
NewsCheck	CMS	Blockchain	https://www.newscheck.com/

Trive	Truth Discovery	Blockchain + Plugin	https://trive.news/
Verity	Reputation tools	Blockchain	http://verity.site/
Svandis	Community Evaluation	Blockchain	https://medium.com/svandis/machine-learning-can-solve-the-epidemic-of-fake-news-in-cryptocurrency-ce9818b85cd7

"Critical solutions"

Project Name	Sub-topic	Interface	Link
Rbutr	Page Dispute	Extension	http://rbutr.com/
Socratic Web	Critical Thinking (?)	Whitepaper	https://medium.com/@Aegist/what-is-the-socratic-web-c6095c452c6
WorldBrain	Bookmarking evaluation (?)	Extension	https://worldbrain.io/

"Crowdsourced annotation"

Project Name	Sub-topic	Interface	Link
Hypothes.is	Community annotation	Extension + Platform	https://web.hypothes.is/
CaptainFact	Community Sourcing and Voting	Extension + Platform	https://captainfact.io/
Factlink	Discussion	Extension + Site forum	https://factlink.com/

Media

Project Name	Sub-topic	Interface	Link

(mis)informed	Fact- Checkin g	Podcast (4 ep)	https://podcasts.apple.com/us/podcast/mis-informed/id1445704479
Catalog of projects	Catalog	Article	https://misinfocon.com/catalogue-of-all-projects-working-to-solve-misinformation-and-disinformation-f85324c6076c?gi=3c811c3c902
Digital Disinfo calendar	Calenda r	Google Doc / Calenda r	https://docs.google.com/spreadsheets/d/1ricpNBuQjb5Hu07_hv8lloEPR-YpgiZFoSCxLyzcMGA/edit#gid=0
Fight against Disinformation ... Landscape Analysis	Mappin g Efforts (ca Nov 2018)	Article	https://shorensteincenter.org/the-fight-against-disinformation-in-the-u-s-a-landscape-analysis/
The Disinformation Report	IRA	PDF / Deck	https://www.yonder.co/articles/the-disinformation-report/
Megaphone	General	Podcast	https://anchor.fm/megaphone/

Labs + Other

Project Name	Sub-topic	Interface	Link
Legal Lab	Litigation against misinformation	Volunteer Platform	https://www.opentech.fund/labs/legal-lab/
Misinformation Lab	Misinformation Research	Academic Lab	https://shorensteincenter.org/about-us/areas-of-focus/misinformation/

0III // Transmission

The R_0 value of a disease represents how many people will contract it from a single carrier. This implies that the R_0 metric depicts the number of infections that you might transmit, were you to contract the disease. Depending on the disease, that number may be as high as 12-18; this is true of Measles, which can survive in the air for the better part of a day. The value can also be as low as $1 \frac{1}{2}$ or below, as is the case with influenza.⁹⁶ A multitude of factors determine how a disease can spread: on what media can the infectious agent survive? In the air, on surfaces? For how long? How sick does someone need to be to spread the disease?

Information or idea spread models based on mathematical epidemiological models, such as SIR (Susceptible, Infectious, Recovered) remain an important method of understanding the mechanics of malinformation. Particularly, the work from Luís M.A. Bettencourt et al. developing remains central in the larger understanding of malinformation.⁹⁷ However, where these models present robust mechanical insights into the flows of information, the context of platform vulnerabilities, the tactics of disinformation-spreading actors, and the types of content disseminated are all in constant flux. Decisions from platforms—like Twitter's decision to label modified content and ban political advertisements—will no doubt change the way malinformation flows, prioritizing organic attention over paid promotion. Examples of targeted activity from groups like the Internet Research Agency are well documented in work from Renee

⁹⁶ Paul L. Delamater et al., “Complexity of the Basic Reproduction Number (R_0) - Volume 25, Number 1—January 2019 - Emerging Infectious Diseases Journal - CDC,” accessed April 28, 2020, <https://doi.org/10.3201/eid2501.171901>.

⁹⁷ Luís M.A. Bettencourt et al., “The Power of a Good Idea: Quantitative Modeling of the Spread of Ideas from Epidemiological Models,” *Physica A: Statistical Mechanics and Its Applications* 364 (May 2006): 513–36, <https://doi.org/10.1016/j.physa.2005.08.083>.

DiResta and *New Knowledge*,⁹⁸ alongside the refinement of these tactics.⁹⁹ At the same time, communities' and individuals' ability to engage and resist flows of malinformation are also changing. Building meaningful resilience to malinformation requires understanding the media ecosystems, models, and tactics. However, formulating sustainable and tangible interventions requires more: that people be engaged in conversation and in community, considering where and how they receive news—and how they respond.

To better understand experiences of media and efforts in civic education and engagement, this thesis undertook a collaboration with MassVote, a local Boston non-profit 501(c)3 organization. The organization seeks to encourage civic engagement in the greater Boston area through workshops, youth advocacy, and election fairness campaigns. MassVote also engages a variety of other civic topic areas, including participation in the US decennial Census, the effects of redistricting, and advocating for voting accessibility. The organization has been in operation since 2008 and has championed local efforts in the area to making voting accessible to Boston's diverse citizenry; efforts include bilingual ballots, early voting implementation, and online registration, as well as advocating for disclosure of financial conflicts of interest. The collaboration with MassVote was initiated in the Fall of 2019 during the thesis preparation course with the intention of creating a design output that would help further the organization's efforts surrounding mis- and disinformation; the open-ended

⁹⁸ Renee DiResta et al., “The Tactics and Tropes of the Internet Research Agency” (Austin, Texas: New Knowledge, 2018).

⁹⁹ Davey Alba, “How Russia’s Troll Farm Is Changing Tactics Before the Fall Election,” *The New York Times*, March 29, 2020, sec. Technology, <https://www.nytimes.com/2020/03/29/technology/russia-troll-farm-election.html>.

partnership aims to understand what topic areas are most critical for young voters regarding malinformation and to design engaging workshops to help address those issues.

Central to this thesis and its partnership with MassVote is the Young Civic Leaders (YCL) program. The Young Civic Leaders are a cohort of high school age interns who carry out work on the ground for MassVote, such as delivering workshops, and conducting voter registration, and providing an opportunity to engage in critical work and political advocacy. The stated goal of the program is to "raise up, politicize, encourage and activate the next generation of leaders," and the program aims to educate and mold the YCL interns "into agents of change in their communities through a series of training, workshops, project-based learning opportunities, and collaborations."¹⁰⁰ The current cohort of six YCLs drives and engages a variety of programming, with workshops covering Allyship, Fake News, Civil Rights, and other civic education topics. The YCLs commit to a 10-hour weekly internship for 11-months, with the possibility of continuing for succeeding high school years and for receiving a college scholarship following successful completion.

The partnership aimed to create critical space for the exploration of high school-aged youth media consumption, civic education, and education curricula related to malinformation. Interviews with the YCL's provided perspective on high school media diets and information ecologies: how their news travels, their interests and topics, their interpersonal dynamics and responses, and their relationships to online and offline communication. The fake news workshop from MassVote that the YCLs facilitate is relatively unique, as a hands-on and purpose-built effort to educate high school students

¹⁰⁰ <https://www.massvote.org/young-civic-leaders>

on malinformation phenomena. Additionally, the experience and knowledge of YCLs who had facilitated past workshops gave them a clear understanding of effective engagement techniques; by understanding what worked best in previous engagement efforts, I designed workshops to improve outcomes and engagement impact.

Approach

Through the process of engaging MassVote and the YCLs, this research aims to generate a more complete understanding of malinformation through engaging different forms of knowledge. Working with the YCL's and asking questions not just of critical reactions to malinformation, but of affect, experience, family, and community elevates this process to start identifying the social assumptions of existing research on malinformation. Through these questions and engagement with the YCL's, this process has taken cues from Sandra Harding's theory of "strong objectivity." Catherine D'Ignazio and Lauren F. Klein, in their 2020 *Data Feminism*, frame "strong objectivity" and related theories of "feminist objectivity" as ideas that "offer alternatives to the quest for a universal objectivity—which is of course not an attainable goal."¹⁰¹ This theoretical consideration is compounded in importance with discussions of malinformation, itself a product of an ever-distorted representation of the world.

Harding argues that traditional scientific or ostensibly neutral perspectives may in fact cause the *more* distortion, and that traditionally marginalized perspectives can be those through which we get the clearest picture of the world. It is through engaging and embracing these multiple and partial perspectives, Harding argues, that we begin to piece together a "less distorted" picture of what is going on. Strong objectivity requires that we

¹⁰¹ Catherine D'Ignazio and Lauren F. Klein, *Data Feminism*, Strong Ideas Series (Cambridge, Massachusetts: The MIT Press, 2020), 83.

consider the positionality and partial nature of differing perspectives, and it suggests we challenge the status of traditional knowledge generation and "neutral" processes that have created a flawed system of knowledge production— succinctly from D'Ignazio and Klein:

"The key to fixing this problem is to acknowledge that all science, and indeed all work in the world, is undertaken by individuals. Each person occupies a particular perspective as Haraway might say; a particular standpoint, as Harding might say; or a particular set of positionalities, as Alcott might say."

The approach to the interviews aimed to utilize this theoretical perspective by engaging participants to set the agenda and to decide what the topics might be – to open up the format so that the perspectives and expertise from the YCLs might come through and reveal new insights on malinformation. From the first meeting with the group, open-ended questions of what matters in malinformation, who is responsible, and how 'we' fix it were posed...but as avenues of exploration rather than as means of information extraction. The content of the interviews and of the synthesis included in this chapter are not value-neutral; rather, both seek progressive change and community action to build resilience. Inspired by this theory, the interview process had three formal objectives, though I allowed for a broad range of play in the specific topics discussed with participants.

The first formal objective was to understand the media context in which the Young Civic Leaders participate, their general interests, and the types of malinformation they might see or engage with. The participants' exposure to media in terms of volume, setting, and discussion varied greatly. The subject matter of greatest interest in news media ranged from popular culture, to sports, COVID-19, and the democratic primary.

The second formal objective was to tease out how participants respond to malinformation and news media, how their perceptions might change along with the perception of potentially questionable news, and how they understood the emotional impacts of news media. I also sought to understand if and how the participants remained engaged in critical thought around potential malinformation on a daily basis- in which spaces could critical discussions occur? How did they think about the burden of responsibility? The third objective of the interviews was to understand how participants evaluated the success of MassVote workshops, or of other educational arenas. This third objective proved critical to operationalize the information from the first objectives into workshop templates and useful design outputs for MassVote.

Participants

There were four participants, identified pseudonymously here as Everett, J, Sean, and Amita. Each participant is a current YCL intern, and high school student in the greater Boston metropolitan area. Across the board, the participants felt that MassVote had been a transformative and even "enlightening" work experience; the critical thinking skills honed and perspectives granted were considered highly valuable. But the specific relationship of each participant to MassVote differed. Each participant developed and led their own spin on a workshop; other interns supported and attended the activities. Some tasks were common to all - weekly meetings and discussions, voter registration drives, and hosting guest speakers - but specific areas of advocacy and interest exist for each YCL. One participant is heavily involved in the Vote16 movement in Boston – a campaign to lower the voting age to 16 years of age.

The virtual interviews took place over two Saturdays over video chat apps, originally intended to take place in MassVote's offices. Of the interviews, three took place via Zoom and the institutionally available license and one over Google Hangouts for convenience. Two channels of audio were recorded for the interviews and stitched together after the completion of the interviews; a playback recording on the computer used to conduct the interviews captured the participant's side of the conversation. This was recorded via free and open-source audio editor Audacity directly to an encrypted virtual hard drive contained within the laptop storage device, and each participant was assigned a random universally unique identifier (UUID) for file nomenclature and note documents to add another layer of separation from real-world names. The questions and my side of the interviews were recorded via the Google Pixel Recorder app, generating a text transcript of the conversation as well as the source audio. After completing these interviews, these files were additionally transferred to the encrypted drive and any local copies removed.

Based on my review of the recordings and field notes, the findings from these interviews have been compiled below distilled into several key areas of insight. First, participants identified the informational ecology in which they engaged, their media preferences, and their offline social circles. Next, I will unpack the methods and sentiments with which the participants respond to malinformation, both as a genuine article in mis/disinformation and as a perceived threat. This section will conclude by positioning these phenomena in the context of media, education, and social systems identified as salient by the participants brought up and, finally, explore the dimensions of

virality that drove many of participants' the perceptions of and responses to malinformation.

Information Ecology

The semi-structured interview always began by asking simply where the participant gets their news. For all participants, center-left popular press news sources like the *New York Times* and *Washington Post* were the first responses. CNN was generally well-regarded with one critic, and more explicitly right-leaning media like Fox News were distrusted overall. Particularly divisive information streams like Brietbart, Infowars, or Rush Limbaugh, discussed heavily by Benkler et al., were not present in the conversations. There were a handful of subject matter specific outlets brought up, such as Complex, a music and culture outlet publishing mostly Instagram content, and Politico, for specifically political and policy-focused news. One participant, Everett, expressed their appreciation for *National Geographic* after previously discussing a distrust of Fox News. Later in the interview I brought up that *National Geographic* is owned by the same media mogul as Fox News, Rupert Murdoch. We discussed then if Everett's perception of *National Geographic* changed knowing the owner of the outlet, and they noted that *National Geographic's* work on nature and conservation tended to be descriptive of the environment, but not to have specific calls to action. The media diet of the participants lined up with mainstream, left-leaning media that might appeal to youth in the Greater Boston area. The discussion of news sources served as an easy starting point to kick off the conversation and provided a general framing for the information ecosystems the participants inhabit. As a cursory snapshot of information streams, the news sources

followed more or less line up with the broader conversations discussed in the previous chapter.

On social media, three of the four YCL participants reported social media use primarily on Instagram and Snapchat with some Facebook and Pinterest as well. The use reported was fairly typical, with a handful of trusted and distrusted outlets. One of the four participants, Amita, noted that they quit social media about one month prior to the interview. Unambiguously, Amita declared that "social media is irrelevant. We didn't need it then, and we don't need it now." Amita's distancing from social media had less to do with any personal episode of harassment or targeted hate, but more with a feeling of muted expression online and the observation of drama between their friends. Similarly, Amita noted how phone banking was a particularly challenging task at MassVote – "When I talk to somebody on the phone, I feel like they're not really getting a lot of me."

Particularly in the context of COVID-19, the depersonalization and separation expressed in this sentiment is critical to consider. More than discussions of how hate might be enabled online through distance or effective anonymity, the separation of personality online or over the phone ("not really getting a lot of me") sets the stage for individuals to more readily be bystanders rather than active community members in an online space. This distance and dispassion set the stage for small groups of users to drive the conversation, normalize otherwise hateful and extreme ideas, and generate a context vulnerable to malinformation. Observed by Jackie Huba and Ben McConnell in 2006 of Wikipedia activity, a general rule of internet media is that 89% of people will only consume information, 10% might comment, and 1% will create it.¹⁰² While this is a

¹⁰² Charles Arthur, "What Is the 1% Rule?," *The Guardian*, July 20, 2006, sec. Technology, <https://www.theguardian.com/technology/2006/jul/20/guardianweeklytechnologysection2>; "The 1% Rule:

simplification, it holds true for the case of the interview participants, all of whom did not report widely participating in comment sections, with one exception discussed below.

This sort of distance lays the groundwork for a brittle media ecosystem of network propaganda when contrasting, critical views do not intersect with more extreme opinions as they foment.

Contrastive to participation postures towards online spaces, certain physical spaces held particular importance for participants. MassVote's weekly news share-outs and check-ins were highlights of note for learning about and communicating the week's important happenings. Similarly, two participants spoke about the significance of formal educational spaces in better understanding political news and information. For both, the homeroom class served as a safe space to share and discuss news; if a piece of news was truly significant, their teachers would bring it up. For Everett, a high school required civics and history course in the preceding term served as a way to approach political news as a class unit; a time to build a better understanding the perspectives of peers and of the political ecosystem. Significant events such as the Robert Mueller hearings that were part of the Trump impeachment were featured in the class. Other common meet spaces were lunch or break time gatherings; for some, this was a place of conversation about local information, class schedule changes, and school or community-specific news exchange. For others, it was a space for political and cultural information. The importance of these physical and discursively open spaces highlights the willingness—even excitement—for the participants to engage in political discourse. This starts to

Charting Citizen Participation: Church of the Customer Blog," May 11, 2010, https://web.archive.org/web/20100511081141/http://www.churchofthecustomer.com/blog/2006/05/charting_wiki_p.html.

reveal as well the importance of creating a better toolkit for individuals, allowing them to feel comfortable in expressing opinions and participating in civic activity online.

Responses to Malinformation

The two most striking anecdotal commonalities across all interviews related to two very specific figures: basketball legend Kobe Bryant and American Samoa 2020 Democratic primary winner Michael Bloomberg. For the former, the story of Kobe Bryant's passing was a reference point for questionable reporting. TMZ was the first news outlet to report Bryant's death, that resulting from a helicopter crash at approximately 10 am on January 26th, 2020.¹⁰³ At 11:24am that same day, TMZ posted the story of the crash, resulting in scorn from police who had not yet contact all family members of the deceased.¹⁰⁴ The story of TMZ's reporting on Kobe Bryant was an immediate and visceral response when participants were asked if they had ever seen a piece of questionable content or news. While TMZ's reporting was mostly accurate, the incident represented a major red flag for recognizing potential malinformation with the participants: single-source news that aimed to be the first to post.

Multiple source verification and linking between trusted news sources represent one of the strategies that all of the participants noted as a method for confirming the truthfulness of a given article. The first response to the question of what you might do when encountering a questionable piece of content was always to Google it, to search for supporting sources. This strategy can be useful and represents the method of verification for a number of technical solutions that use network analysis of linking and referencing

¹⁰³ <https://www.si.com/nba/2020/01/26/kobe-bryant-death-california-helicopter-crash-los-angeles-lakers>

¹⁰⁴ <https://www.wate.com/news/police-scold-tmz-for-reporting-kobe-bryants-death-before-families-could-be-notified/>; <https://www.tMZ.com/2020/01/26/kobe-bryant-killed-dead-helicopter-crash-in-calabasas/>

among news sources to understand what is widely reported and the nature of the reporting.¹⁰⁵ For the YCLs, the rational approach of critical thinking underscores their toolkits for malinformation. J, who leads the "fake news" workshop, discussed markers on an article to assess its value; an author by-line, timestamp, and sources were noted as three standard indicators.

More than these critical standards and elements of good reporting, participants suggested that the virality of information and its trending status conferred a level of trustworthiness. If a story were trending, participants tended to assert that a convergent wisdom elevated it to be so. First party news aggregators like Apple News on iPhones and built-in information streams like Google News stories on Google services were important frames for information. J reported how their mother would trust anything on Facebook that made it to the top of the feed. The constancy and broad accessibility of information may lead to a perceived over-confidence of knowledge, as Amita suggested:

"A lot of the things with our generation that I notice is that they like to think they know it all, just because of how interactive we are on social media and how we can access so many different things at some many different times."

The rush to report, comment on, and consume information and media, epitomized by TMZ's reporting of the Kobe Bryant helicopter crash, lays the groundwork for not only sloppy reporting or media bullshit, but indeed propagation of false or harmful malinformation, confusion and disorientation, and a civically-destructive culture of

¹⁰⁵ See survey of civic tech

knowledge competition. This competitive, sometimes gamified consumption is the mirror image of an attention economy; the betting markets of which post to read or comment on rewarded by internet points of various forms. Beyond article components, participants noted that there is a common sense to understanding what may or may not be malinformation. Amita framed this common sense as an understanding of what might seem "outlandish." When unpacked, the common sense or understanding of outlandishness was justified by previous knowledge, framing the possibility of future events. Similarly, the perceived media spin and whether the news outlet was blowing the story out of proportion support assessments of plausibility. In a context where rapid and competitive knowledge consumption and participation is the prevailing tempo, reliance on intuition is not unreasonable; but if that intuition forms in a distorted context, it is not unreasonable to expect more extreme visions of reality to develop.

Returning to the case of Michael Bloomberg, participants noted frequent advertisements leading up to the 2020 democratic primary in Massachusetts as examples of targeted advertisements delivered to their screens. While sentiment towards Bloomberg was relatively neutral, the ads delivered remained low stakes as participants were not of voting age. Sean noted that many of the ads asserted a tone of familiarity and that the media mogul was a part of the local community helping to advance local economic goals. Sean's, and other perspectives, questioned this messaging, as candidate Bloomberg was relatively unknown and late to the primary; perceptions of his ad blitz at worst made interviewees more skeptical of his outsider status and at best only kept him momentarily in the conversation.

Individuals and Systems

The participants' perception of truthfulness in an article depended on more than just cross-linking and sources behind information. For some, comments on an article or piece of content play a central role in checking and self-checking the rigor and veracity of claims made. On Instagram, J noted the significance of celebrity comments on posts, which can be elevated and pulled out to provide a quick, trusted reaction to the content. Similarly, Sean regarded the YouTube comment section as an important layer of information about the video and potential perception of it. Trust was also expressed for trending topics, suggesting that a certain volume of attention or conversation on a topic suggests its believability. This trust for trending information extends to the comments as well, since the most popular or most engaged with posts will likely rise to the top. This aligns also with the competition for knowledge and desire to be first to post or comment, as the earlier a user comments, the more likely they may be to accrue attention and rise to the top. Of the tens, hundreds, or thousands of comments on a piece of information, only the first few dozen might be read by an average viewer; and so, the first few who make a relevant, insightful, or otherwise attention-grabbing comment are those likely to receive further attention. When asked to elaborate on why comments might stand on more trustworthy ground than the content itself, Sean indicated that together with the comments of the comments—and implicitly the comment moderation and voting system—there is a safety net of accurate information: a small-scale network of diverse, critical, and engaged perspectives forging collaborative truth. But everyone on the internet has experienced comments potentially classified as malinformation—from confusion to bias, outright hate to transparent soap-boxing, comment sections can often be the most vulnerable part of a media platform's information stream.

On malinformative comments, Sean also suggested that incorrect comments were mainly instances of individuals who had not yet been informed on a given topic. The same leniency of transmitting bad information was not afforded to the media platforms themselves, which would reasonably be held to a higher standard. This forgiveness of an individual's reproduction of information was a common thread throughout several of the interviews. To understand the criticality of information online versus in-person, interview questions approached how skeptical the participant might be of information received face to face in an offline social network versus an online digital one. While some participants suggested an equal level of critical assessment online and offline, there was a thread throughout that suggested more leniency on information directly from people. This difference in critical approaches to information potentially comes from an acknowledgment of fallibility or an understanding of systemic issues at play in the conversation. The willingness to forgive an imperfect transmission on information from a commenter online or an offline individual may reflect the perceived personhood of the presenter. Further, an individual mistake was suggested by Everett to be part of a systemic information or education issue and forgivable – an affordance generally not given to media outlets themselves.

But while an equal grace was suggested for information transmissions online and off, the majority of discussions and challenges reported by participants took place in the meet spaces in the physical world. Further, while personhood is assumed for a comment online, large volumes of algorithmic comments, and otherwise automated propaganda exist online; a person relaying information is guaranteed to exist as you see them. This thread highlights an important asymmetry that emerges in the treatment of the small-scale

networks of comments and information distribution online and offline, all taking place in an arena where speed is incentivized. This observation is not a critique of the participants' engagement and comment behaviors; they represent some of the most engaged, aware, and technically proficient users on their social media and information platforms of choice. Rather, it suggests that the comment infrastructure and information ecology do not provide sufficient affordances to engage in civic debate and that their limitations and feedback loops incubating malinformation are saved only by an active few.

The race to post or comment first and the critique of that competition is faced with a paradox in the form of bandwagoning. Participants expressed an obligation to participate in the collective conversation on social media – "you feel obligated to do it because everyone else is doing it" – while simultaneously avoiding labels of bandwagoning. The paradox forms in that the first to post or comment information may be perceived as less trustworthy, but if retrospectively they prove correct or insightful, the most internet status is awarded. Similarly, individual expression aims to appear unique and novel while also resting on more general trends. As Amita describes below, users find themselves stuck in an awkward tension of participating in mainstream culture while also iterating, remixing, and presenting all their own:

"I know people like that, and they told me like 'Oh it's not even like that, I'm just trying to do me.' Everybody's kind of like persona is kind of like 'Oh I'm just trying to do me, I don't care what anyone else says.' But it's like you do, you *so* do.... People are making a fool of themselves because they're not being

themselves, and you can tell, and it's so hard. It's hard to watch."

- Amita

In no uncertain terms, the pressure to conform shapes the role of and interaction with social media platforms:

"It's hard for a lot of people to start loving themselves just purely on their own because of social media. Because from such an early age you see all these women...you're following this path that someone else has already created for you."

The impulses to be at once part of a larger movement and the first to possess a piece of knowledge contradict some of the everyday strategies used by the participants in checking an article before sharing. Sean argued that the immediacy of online interactions reflects strong feelings, being in the moment, and potential assumptions of previous confirmation. Everett suggested in their interview that beyond education on critical thinking, there is a need for wisdom in considering news; where education and critical thinking improves the capacity to spot red flags, wisdom over news and social networks might enable readers to challenge the impulse to conform to the mob and 'see the world from their own eyes.'

Towards Network Citizenship

The findings from this interview point towards the need for more robust engagement online to activate skills and desires for civic conversation. In particular, considerations of

comments as a first response safety net for malinformation opens the door to more seriously approach how comments function, the small-scale interactions and networks that form within comment sections, and ways to utilize comment sections as progressive and critical forums. The workshop templates and guides outlined in the following chapter explore and operationalize the idea of what it means to be a network citizen. The context of citizenship is somewhat troubled, particularly in recent events surrounding the 2020 decennial census citizenship question.¹⁰⁶ However, it is the hope of this thesis to apply citizenship in good faith, closer to a concept of *civitas*, a sense of community and participation, social contract, and duty to each in the civic body.¹⁰⁷

Network citizenship aims to foster better awareness of our own personal biases and blind spots, better awareness of our tendencies – like competition for knowledge – and how technological affordances may exacerbate or curb them. With these aspirations in mind, the following chapter aims to create a first attempt at resources that might help educators, civic groups, and communities to better resist flows of malinformation and network propaganda and to remain integral and oriented in a challenging information ecosystem.

Knowledge into Practice

The knowledge generated from these interviews provides several avenues for further inquiry and for action. The PDF workshop guide included in this document serves as the first pass at operationalizing these ideas. It includes three workshops that can be given as

¹⁰⁶ “Why Did I Receive A Census Bureau Survey With A Citizenship Question? : NPR,” accessed April 28, 2020, <https://www.npr.org/2019/08/09/743296249/why-is-the-census-bureau-still-asking-a-citizenship-question-on-forms>.

¹⁰⁷ “LacusCurtius • Roman Citizenship (Smith’s Dictionary, 1875),” accessed April 28, 2020, http://penelope.uchicago.edu/Thayer/E/Roman/Texts/secondary/SMIGRA*/Civitas.html.

self-contained lessons or in series. Many concerns from participants centered on the urge to share information and compete for knowledge or the appearance of being in the know. To approach this issue, engagement and education practice can start to evaluate and reflect on the attention economy's impact on these behaviors. In the *Network Citizen's Guide*, the first workshop, on individual perception, asks participants to consider how different online platforms impact reactions and encourage commenting, sharing, or other interactions; in the second workshop, on community-scaled issues, the icebreaker activity explicitly considers constraining virality through an exercise on the attention-grabbing potential of headlines, and through a later activity focused on spotting signs or markers of malinformation.

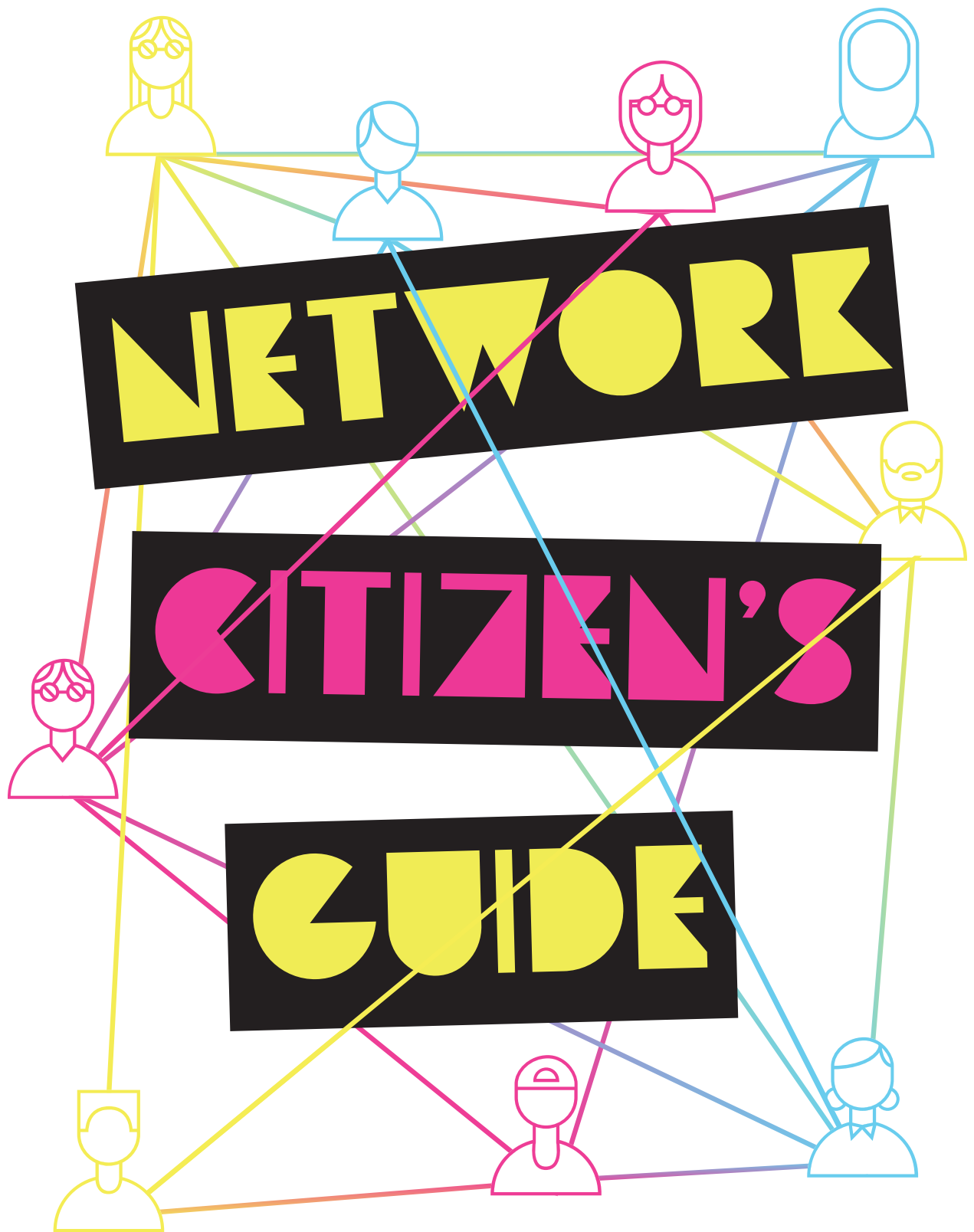
The next, and potentially most challenging action, is to make online discussion, forum, and comment sections more appealing and approachable as places of civic engagement. The idea from interview participants that comment sections serve as an immediate, self-correcting layer of fact-checking is an important opportunity to combat malinformation. The comment sections exist in three main areas – directly on articles (e.g. Disqus add-on, News comments), first-party social media posts (eg. NYTimes, CNN, Fox Facebook pages), and community re-posting (e.g. someone in your network re-posts an article). By encouraging participation, particularly in the latter of those three spaces, there is an opportunity to create aware, civic-minded discourse and meet readers where they currently are. While this conceptualization of comment sections is not entirely innovative, some estimates suggest that ~90% of internet participants refrain from

contributing or commenting and only "lurk" online.¹⁰⁸ To address this, activities in the community workshop and citizenry workshops aim, respectively, to encourage more participation in comment sections as you would in the physical world and consider how we can create better technology to support this in the future. One of the commonalities participants expressed on what made lessons or workshops particularly memorable was engaging and assuming a different perspective or point of view; to that end, the community workshop prompts participants to consider internet comments as if they were being transmitted by friends or family members. How would you respond if someone right next to you were espousing strong, divisive beliefs or perpetuating falsehoods? Why, and how, is it different online? This activity, and efforts to create more civic engagement in everyday online spaces, aligns with an overarching goal of building resilience to malinformation within communities. Information moves online through a variety of channels: WhatsApp groups, Twitter threads, and Facebook pages. Encouraging the individuals and communities already engaged in those spaces to critically consider information and share their perspectives is fundamental to a more robust information network.

Finally, broader questions remain of how we can bring the lessons learned from primarily online malinformation techniques back to offline social networks and the world away-from-keys. Meet spaces, classrooms, meals, and civic spaces, are important locations of discourse, and, within the context of interview participants, active places to engage. It is important to consider how these workshops may operate across contexts,

¹⁰⁸ World Leaders in Research-Based User Experience, "Participation Inequality: The 90-9-1 Rule for Social Features," Nielsen Norman Group, accessed May 12, 2020, <https://www.nngroup.com/articles/participation-inequality/>.

among places of more obvious political division and heterogeneity, and across linguistic and cultural contexts. The first step may be to attain a level of virality in these ideas and activities themselves, building a broad citizenship able to ask questions and entertain novel approaches that ask what new forms of citizenship they can participate in do limit malinformation, and why.



This guide was created as part of “Community Remedies for Civic Disorientation, De-mobilization, and Malinformation” -- a master’s thesis conducted as part of master in city planning program at MIT’s department of urban studies and planning.

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HOW TO USE THIS GUIDE

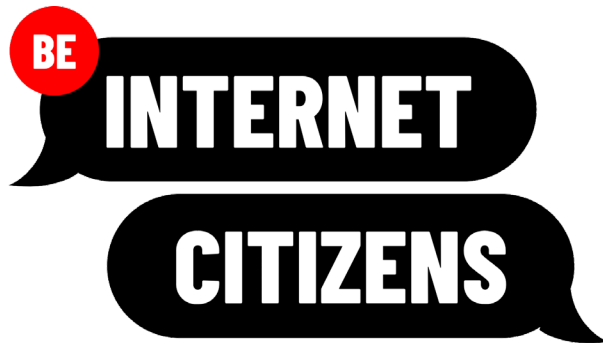
This guide is a starting point for community groups, non-profits, and educators to explore how to build resilience against bad information (misinformation and disinformation) and encourage civic participation in the information age.

This document contains three workshops, each of which approaches the idea of “network citizenship” through one scale: the first workshop considers individual perception, bias, and emotional resilience; the second workshop engages community and information flows, and the third workshop asks participants to consider a bigger picture, and how they might play a part in shaping the future of civic technology.

These workshops can be conducted in series or individually, and specific activities can be utilized as needed. The activities described in the three workshops are designed for a high school or college aged audience, and should be conducted with a group of ~15 or more participants.

Each workshop outlines the materials needed to facilitate it, and it is recommended that these activities be presented in conjunction with background information about mis- and disinformation, critical media literacy, and online safety and tech literacy.

PRECEDENTS + OTHER MATERIALS



Be Internet Citizens is an educator's toolkit produced by Institute for Strategic Dialogue (ISD) in conjunction with Google and Youtube. The document contains five modules which broadly focus on emotional and mental wellbeing in navigating online spaces, as well as media literacy and encouraging participants to think about the digital landscape they want to see. The document, well-produced and applicable to high school participants, mainly addresses the individual experience of and challenges with media; the materials in this chapter are building on the questions asked by ISD, Google and Youtube to towards engagement that encourages networked resilience.

"Be Internet Citizens," Be Internet Citizens, accessed April 23, 2020, <https://internetcitizens.withyoutube.com/>



Field Guide to Fake News is a document produced by First Draft, Public Data Lab, and a handful of other partner organizations, specifically compiled by Liliana Bounegru, Jonathan Gray, Tommaso Venturini, and Michele Mauri. The document is intended for a savvier audience, like journalists and researchers, but provides helpful "recipes" to approaching various issues around bad information.

"Field Guide to 'Fake News,'" First Draft, accessed April 23, 2020, <https://firstdraftnews.org:443/project/field-guide-fake-news/>.

NETWORK

CITIZENSHIP

Networks of information, news, data, and anything else can resist mis- and disinformation or let it flow freely. Platforms work to make change, and sometimes policy-makers get involved. But sometimes, it's on us - people and communities - to see what change we can come up with ourselves.

That's what it means to be a network citizen.

To be an active part of your network, social or otherwise, to know yourself and those around you, and work to make it a more resilient, healthier, and more enjoyable place to be.

The workshops in this document start the conversation about what it means to be part of a network and how individuals can make a big contribution. It's not easy, and it's not happening overnight. But problems of mis- and disinformation aren't going anywhere.

Network citizens challenge assumptions, engage new perspectives, and work alongside platforms and leaders to help information ecosystems and networks better represent the people in them.



WHAT'S MY PROFILE?

Workshop 1: What's My Profile?

What you will need:

1. Computer / phone access. Presentation screen.
2. Prepared news articles on social media platforms. Access to icebreaker websites.

Overview:

What's my profile? is an hour long workshop that engages participants on themes of mis- and disinformation, personal and platform biases, and emotional resilience. The workshop is best for participants in high school or college, and assumes basic news and technological literacy.

Objectives:

1. Participants develop a clear picture of what news/information they gravitate towards, the implicit biases, and platform limitations.
2. Participants consider alternative viewpoints to understand their own blindspots, platform limitations, etc.
3. Participants approach the emotional impact and understand how they feel and respond to challenging news.

ICEBREAKER

Two Truths and a Lie

1. Ask everyone to take a screenshot or photo of a news article and post in in a shared doc or drive.

2. Navigate to 2truths.wrong website, on it, the website will show two true articles, and one fake headline. Group the participants into small teams, and prompt them to guess which headline is false.

Key Questions

Which headlines tend to be the most believable?

What do participants look for to identify a fake headline?

How do people react to being correct or incorrect?



True, if you define 'crop circles' loosely!



True, but somewhat sensationalized!



Bad information!

ACTIVITY 1

WHAT'S MY TAKE?

Understanding your position (10 min)

1. Start with a major piece of news that week. Provide printed copies or a link online.
2. Divide the participants into three groups:
 - Full Article
 - Headlines Only
 - Article and Comments
3. Each group should (for their assigned format) find articles that are contrast with their regularly consumed media diet.

For the full article group, ask participants to find and read 1 full article, for the headlines group find 10-15 headlines from different news outlets on the same topic, and for the article and comments group ask them to read a full article with comments.

4. Each group should note:
 - Why was this article or headline surprising?
 - What made it different from your regular news?
 - What was it like reading only {headlines / one article / article + comments}? Do you think there was any missing information?

Imagining another view (6 minutes)

1. Each group should report back and talk about what they found. Note the changes across what different groups experienced with the same story, and ask participants on their perception of receiving different parts of the story.

Key Questions:

How did different news sources present the story?

What was it like reading just the headline, or just one story? What did the comments add?

What were some of the ways the headlines varied? Were any of them spinning the information or trying to manipulate a response?

How did it feel to see such different information?

ACTIVITY 2

PLATFORM PROBLEMS

What do I see? (10 minutes)

1. Go through reactions to an article on Instagram, Facebook, and Twitter. How do these different platforms influence the way people react?

2. Poll the audience – what social media platforms do participants use?

3. Reflect:

Do participants think their behavior is impacted by the platform they use?

What patterns do participants notice?

Key Questions:

How did reactions differ across the platforms?

How did conversations play out across each?

Was there anything in the format of the social media platform that might have encouraged a specific response?

What social media do you use, and how do you think it might impact your responses?

The screenshot shows a Bloomberg article titled "World's Richest Are Waiting for New Dip in Stocks Before Buying" by Ksenia Galouchko, dated April 29, 2020. The article features a line graph showing stock prices and a quote from Warren Buffett. Below the article, there are three social media platforms displaying reactions:

- Facebook:** Shows a post from Bloomberg with 436 likes, 175 comments, and 137 shares. Comments include:
 - Armando D. Spinks: "I'm not waiting since I don't need my money for another 20 years. I bought all dips in every stock I own and will continue to do so. 'Scared money doesn't make any'"
 - Adam Taylor: "Then they worry they'll miss the discount and drive prices even higher and close to pre-covid levels."
- Twitter:** Shows a tweet from Bloomberg Markets (@markets) with several replies:
 - TechBull22: "We can learn a great deal from the stock investment principles and frugal life habits of Warren Buffett and his long-time business partner Charlie Munger at Berkshire Hathaway."
 - Bullish for stocks: "Which is why it won't happen"
 - hibernating grizzly bear: "61% want to see equities fall another 5% to 20% before buying, while 23% say it's already a good time to do so. Some 16% say that now is not the time to load up on stocks as it's a bear market."
- Reddit:** Shows a post from r/investing with several comments:
 - radunee: "The world's richest do not publicly tell you what their strategy is, ever -- they only tell you information that would profit them."
 - carashamed: "AVA fintech network platform provides proprietary alpha stock signals, stock market trends, personal ..."
 - desirex: "The phenomenon where a bag short selling hedge fund managers gained general public respect after the GFC was so strange to me. Profiting from the unwinding of MBSs was not some benevolent action. People like Ackman, Eisman, and Barry profited and tried to deepen the crisis while the world burned. I find that behavior and the sociological 'carrots and sticks' that creates to be deeply disturbing."

ACTIVITY 3

FEELING ONLINE

Thinking like an internet (5 mins)

The way we process information isn't just what we think. Introduce the diagram on the right, and ask the questions included about how news or information can generate thoughts, emotions, sensations, or behaviors.

Emotional impact (5 minutes):

Get in small groups, discuss these ideas with regard to the news from earlier.

Ask participants if they've ever experienced one of these feelings.

Information Resilience - things to keep in mind:

1. Critical thinking: does the information or article have key indicators of authentic and rigorous content? (spelling and grammar, date, author, source) Are there other news sources discussing this event or issue?
2. How does the platform you are reading or hearing about this change the information?
3. Who wins if this is true? Is there a financial or political interest in the information?
4. What does this mean for you if this is true?

WRAP UP

Summary:

It's important to know your profile, because social media platforms do, too.

Understand the basic steps of checking for bad information: always use critical thinking and news sources you can trust.

When you see a comment online, ask yourself how you would respond online. Consider what role the social media or news platform plays in the conversation.

Be aware of how you might be feeling emotionally.

YOUR BRAIN.



THOUGHTS

How does this information relate to things you know? What does it remind you of? Does this confirm or challenge any beliefs you already had? Do you believe this information?

EMOTIONS

What does this news make you feel? Is it a good or bad feeling? Does the news challenge or confuse what you thought was true? Does it relate to other systems you have experienced?

SENSATIONS

What is your body feeling when you learn the info? Do you want to keep looking at the screen, or keep listening? Is there any change in feeling in your chest or lungs?

BEHAVIORS

What do you do with this new information? Do you share or discuss it? Does this information impact the way you would read news in the future? Does this information change how you interact w/source?

Resource: First Exposure Bias

It's great when news sources issue corrections or people learn more about an issue, but there is a problem: the first exposure bias. When someone learns something that isn't quite right, even if they get new information later, there is a tendency to stick with that original information. Somewhere in the back of your mind, an echo of that bad information might hang around.

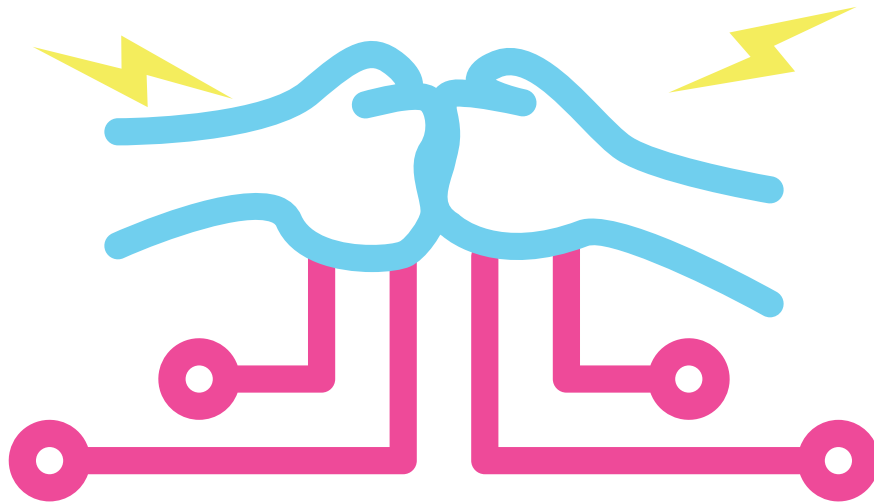
Always be aware of what you're reading, and protect your brain!

Resource: Attention Economy

Way back when, there was not a whole lot of content or information, but lots of interest and attention. Now, we have more content than anyone can handle, so paying attention is a valuable thing. This is called the attention economy: what you think about, pay attention to, watch, or play is worth a lot to a few companies and people.

Be aware of clickbait and other tactics meant to pull you in, and always remember to think about who made and published the content your watching!

DIGITAL ALLYSHIP



Workshop 2: Digital Allyship

What you will need: Prepared cards with headlines, example divisive comment from a social media platform, prepared cards with symbols for bad information.

Overview:

Digital Allyship is an hour long workshop that connects the dots between the interpersonal communities we build and actions we take online. It engages participants to think about how we can be better advocates, allies, and participants in online arenas and also take those lessons back to the physical world.

Objectives:

1. Participants will engage themes of virality and attention economy and think about how information spreads through a community, and reflect on what catches their attention.
2. Participants will think about how online and physical discussion places differ, and how they respond differently. Participants will formulate opinions on how ways people act change in front of a screen, and come up with methods to better respond to challenging scenarios.
3. Participants will observe how bad information can reach a lot of people, even when a majority of folks are being careful and observant.

ICEBREAKER

Constraining Virality

1. **Game:** Everyone gets a card with a headline on it. Some outrageous, some subdued. Everyone gets 5 stickers (emoji, stars, etc.), and they should choose which headlines to give those stickers to. Participants can choose based on which articles they would want to read, which headlines are the craziest, or just give stickers to their friends! (5 minutes)

2. After 5 minutes, poll participants to see which headlines got the most stickers. See which headlines were less successful – emphasizing that this is just a game.

Key Questions:

Why did participants chose the cards they did?

What headlines got the most stickers? Why?

What headlines got fewer stickers? Why?

Have participants ever been pulled in by a headline, and later realized it wasn't as interesting as they hoped? What did that feel like?

“Foiled lobster truck heist in Charlestown 'was a very Boston experience for everyone involved”
- Boston Magazine

(STICKERS HERE)

“C-SPAN to broadcast audio of Supreme Court oral arguments live in May”
- The Hill

(STICKERS HERE)

“Trump: I didn't say it. (He did. Here's the tape.)”
- CNN

(STICKERS HERE)

ACTIVITY 1

BUILD A BETTER

COMMENT SECTION

1. Come prepared with a comment from a social media source.

Present the comment to the participants as 'If you heard a friend say {X}, what would you say?' Get a few responses, and summarize the key ideas.

2. Next, reveal that the comment was online. Ask what seems different about hearing from a person versus hearing it online.

3. Finally, ask participants to get in small groups and come up with a response to the comment online.

Key Questions:

Is it different having a discussion online instead of in person? What's makes it different?

Do you read comment sections? Do they matter? What do they help you do?

Everyone knows something new – have you ever contributed to the comments? What do you want to contribute?

Example story:



Tags: coronavirus, health

Posted April 27, 2020 4:24 a.m. EDT

Updated April 27, 2020 10:49 p.m. EDT

12:30 p.m.: One of three mothers who said they started the ReOpenNC protest has tested positive for COVID-19. She said she was in a two week quarantine that ended Sunday and was asymptomatic.

It's unclear if she attended the protest last week, which drew hundreds downtown, since she was under quarantine.

"As an asymptomatic COVID19 positive patient (quarantine ends 4/26) another concern I have is the treatment of COVID patients as it relates to other communicable diseases. I have been forced to quarantine in my home for 2 weeks," she wrote on her social media page.

Example comments:

↑ noobpipesmoker 27 points · 2 days ago
 ↓ Should not be allowed treatment.
 ■ Reply Give Award Share Report Save

↑ ChunkyMoose -1 points · 2 days ago
 ↓ Sweet justice let this man die plz
 ■ Reply Give Award Share Report Save

ACTIVITY 2

STOP THE BUCK

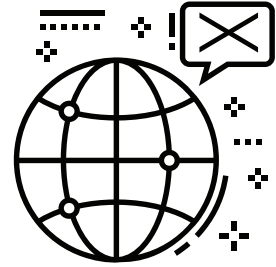
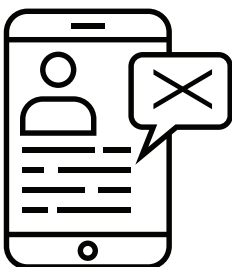
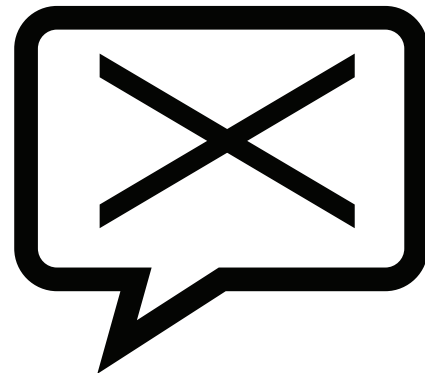
HERE.

1. Plant two facilitators in the crowd.
2. Hand out prepared cards to participants (see next page), each with a series of symbols on them. Show on screen the “bad information” symbol, meaning that something about that card is wrong.
3. Instruct participants that each time they pass a card, make a tally in the box.
4. Have the facilitators pass out cards with many tallies, and also many symbols.
5. After 5 minutes of passing cards around, have facilitators collect the cards and see which cards with the “bad information” symbol have the most tallies.

Key Questions:

Did you notice a few people spreading the “bad information” symbol intentionally?

What made it hard to notice the sign, and what did you do to recognize it?



WRAP UP

Summary:

Bad information, and what we choose to pay attention to, can shape what our social circles and social networks.

It takes only a few people - either by accident or on purpose - to spread around a lot of media spin or bad information.

The comment section online can be an important place to share perspectives and information that only you have. Be careful and stay safe, but be bold and share your perspective!

Resource: Information Virus

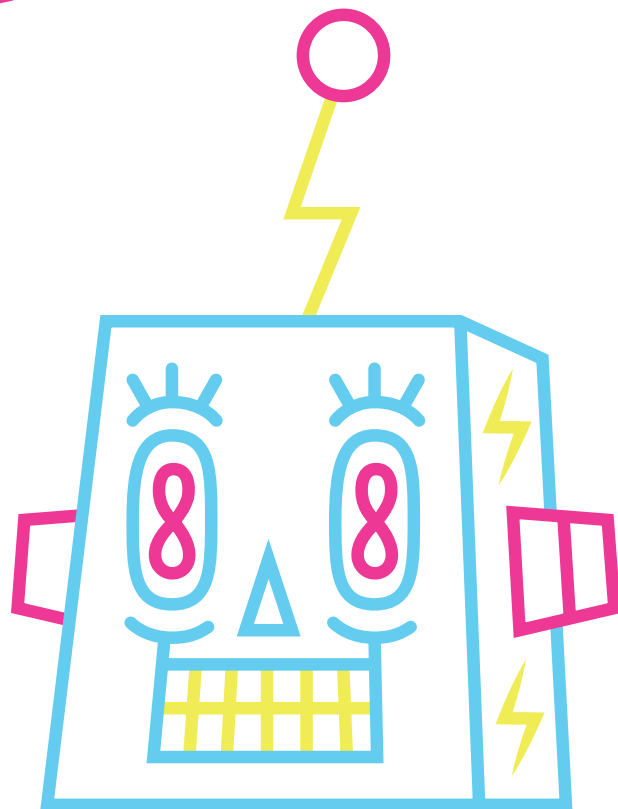
A lot of the time, information and news can act like a virus. Think about how a few sick people can infect a lot more if they don't receive care, just like that bad information can spread from people who don't even know what they are doing!

The experts who create models for how information spreads in this way, called agent-based modeling, think that if we can make it harder for bad information to spread around social

circles or networks, than the information system will generally improve.

Platforms like Facebook and Twitter are working on this, with actions like banning political advertisements or limiting what bots (aka automated accounts) can do on the sites. But, if individuals and communities can help stop bad information, we can hope for an even better outcome.

NET- WORK CITIZENS



Workshop 3: Network Citizens

What you will need: Prepared UI/UX cutouts. Prepared Cards. Paper/pen.

Overview: Network Citizens is a workshop aimed at engaging participants to think about how the technology around them works, and how they might contribute to a better tech world. Especially around civic technology or “public interest technology,” this workshop aims to inspire considerations of how participants could contribute to a more equitable future.

Objectives:

1. Participants will consider the limits of current technology and how they could improve upon it.
2. Participants will learn about civic technology and how it has the capacity to impact daily life.
3. Participants will prototype with hand-drawn and collaged elements a new technology that *might* just start a revolution.

ICEBREAKER

Text Telephone

1. Form the participants into a circle, and have the first participant write a message on a card, noting the number of characters.

2. Pass the card to the next participant reducing the number of characters by ~10%. By the last participant, the character limit should be under 50.

Key Questions

What made it hard to shorten the message?

Have you ever had to compress a message to fit a format, or have you ever experienced things getting lost in translation?

Have you ever felt limited by the social media platforms you use?

Example Telephone Character Count

240 > 200 > 170 > 140 > 120 > 100 > 80 > 65 > 50

ACTIVITY 1

CIVIC & PUBLIC

TECHNOLOGY

1. Introduce the idea of civic technology as it relates most to the interests of the group.
2. Show 3–4 examples of relevant civic tech projects, and discuss the mission and ideals behind them.
3. Open up the discussion with participants using the key questions for this section.

Key Questions:

What does civic technology mean to you? How is it different from regular technology?

Who needs civic tech most? Why do we need civic technology?

ACTIVITY 2

EVERYTHING'S

A PROTOTYPE

X for Y

1. Print out a user experience design kit like the one included in the resources appendix of this document.
2. Print out the “Platform” and “Audience” tags below, and have participant groups of 2–3 pick one of each from two hats.
3. Give plenty of time for the participants to mock up their new platform, and then have participants pitch the new innovation!

Key Questions:

What was it like thinking about making new technology?

Were any of the combinations surprising? Were any difficult?

What would you design for to make a more fair world? What do you think is missing?

DESIGN A NEW APP...		
NETFLIX	GAME	CALENDAR
SNAPCHAT	PUZZLE	ART APP
MESSENGER	ALARM	MUSIC
BANK	WEATHER	TWITTER
DRAWING	PHOTO APP	TIKTOK
NEWS APP	INSTAGRAM	MAPS

MADE JUST FOR...		
LITERALLY JUST MY FAMILY	NATURE	TRAVELERS
MY STATE	CLIMATE CHANGE	SLEEPY PEOPLE
MY COMMUNITY	CARE	??? YOU CHOOSE!
MY CLASSROOM	MOMS	CHEFS
OFFLINE USERS	DADS	REVOLUTIONS
OLD FOLKS	INT'L FOLKS	STUDENTS

WRAP UP

Summary:

Technology, however good or poorly designed, always has constraints and opportunities. Think about how technology impacts what you do on a daily basis.

Civic technology or public interest technology provide an alternative way to use tech skills.

More and more, there is opportunity to use technology for your community, family, or city.

Think about exploring what you can make and who the audience might be!

APPENDIX: RESOURCES

Useful Guides:

First Draft Field Guide to “Fake News” - firstdraftnews.org/project/field-guide-fake-news/

Be Internet Citizens - internetcitizens.withyoutube.com/

Catalogue of Dis/Misinformation Projects - misinfocon.com/catalogue-of-all-projects-working-to-solve-misinformation-and-disinformation-f85324c6076c

Civic Tech Field Guide - civictech.guide/

Research Groups:

Data + Feminism Lab, MIT - dataplusfeminism.mit.edu/

Civic Data Design Lab, MIT - civicdatadesignlab.mit.edu/

Berkman Klein Center - cyber.harvard.edu/

Stanford Internet Observatory - cyber.fsi.stanford.edu/io/

Oxford Internet Institute - oii.ox.ac.uk/

Tools:

MediaCloud Media Analysis - mediacloud.org/

Snopes News Checker - www.snopes.com/

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