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# **Taking Back Control: An Unconventional Approach to Information Disorder**

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## **Introduction**

In this paper, I provide a brief overview of media literacy programs that have been proposed or trialed thus far, whether through public education or in an experimental lab setting, examining the pros, cons, and barriers to implementation. I examine media literacy against the full taxonomy of mis/disinformation solutions, and propose strategies derived from psychology and behavioral science that can encourage buy-in and give these policies a real chance at success.

Through my research, I find that while media literacy shows potential in experimental settings, there is no longitudinal field research to definitively prove the efficacy of media literacy to reduce the negative impacts of mis/disinformation. To that end, I examine the potential for education and training practices—such as cognitive behavioral therapy (CBT) and mindfulness programs—that could work in tandem with consumer-side levers such as media literacy, and top-down solutions such as increased platform transparency and antitrust laws, to improve how we perceive, absorb, and share information.

## **Media Literacy**

Malik et al. (2013) identify five dimensions that encompass media literacy. The first dimension is that media literacy should inform on the role of news in society. Second, media literacy should intrinsically motivate people to seek out news. Third, media literacy should encourage those to find and recognize news, and fourth, media literacy should be able to critically evaluate news. Lastly, media literacy should encourage the

practice of news creation as a method for understanding how news is made and distributed (Malik, Cortesi and Gasser).

Karen Fowler-Watt, in her 2023 book *Challenges and New Directions in Journalism Education*, details a theory of change approach to media literacy in 5 parts: 1) equal and sustained access to public interest media content that is integrated with media literacy; 2) critical assessment and evaluation criteria providing the public with increased awareness of the health of media ecosystems; 3) capability for people to act in ways that strengthen the media ecosystem by making informed decisions about what to consume; and 4) a level of awareness and capability that enables a more resilient media consumer base that can challenge media representations and unverified information (Fowler-Watt).

These concepts and theories provide a framework for testing media literacy in real life applications. We are in the early stages of experimentation, but media literacy programs are proving to be effective in teaching students how to spot mis/disinformation, how to control for biases and errors in judgement and decision making, and even how to think like a media manipulator via pre-bunking exercises. Common media literacy curriculums for high school students include such topics as identifying hoaxes and fakes, challenging confirmation bias, identifying and understanding how advertising contributes to disinformation, and understanding how filter bubbles can limit the

information we receive (Common Sense Education). And according to reports <sup>1</sup>, these programs couldn't come soon enough.

### *Trials & Results*

Early results from trials in media literacy programs have shown positive signs of success. Finland, ranked first of 41 European countries in misinformation resilience<sup>2</sup>, incorporates media literacy as part of its national core curriculum (Gross). Mari Uusitalo, middle and high school teacher in Helsinki, explains that media literacy is less about teaching students what to think, and more about providing them the tools to make their own opinions.

*“I can't make them think just like me...I just have to give them the tools to make up their own opinions.”*

- Mari Uusitalo, middle and high school teacher in Helsinki, (Gross)

In the US and India, a large-scale study of over 20 thousand participants found that a media literacy intervention that exposed people to “tips” to help spot false news stories improved discernment between mainstream and false news headlines among both a

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<sup>1</sup> A 2019 survey of 3,446 high school students conducted by the Stanford History Education Group (SHEG) found that 52% of students believed a grainy video showing ballot stuffing in the 2016 Democratic primaries revealed “strong evidence” of voter fraud, although the video was shot in Russia. Two-thirds of students could not tell the difference between news stories and ads on Slate’s homepage. And 96% of students did not consider ties between a climate change website and the fossil fuel industry might lessen that website’s credibility (Breakstone, Smith and Wineburg).

<sup>2</sup> Based on a survey published by the Open Society Institute in Sofia, Bulgaria (Gross).

nationally representative sample in the United States (by 26.5%) and a highly educated online sample in India (by 17.5%) (Guess, Lerner and Lyons).

In a 2021 study conducted by Wineburg et al. (2021), researchers found that Nebraska high school students exposed to media literacy education resulted in an improved ability to make quick, accurate judgements of internet sources (Wineburg, Breakstone and McGrew). Results show that students improved in the judgement of credibility of digital content and encouraged students to make wise decision about the information they see online.

A 2021 study on the impact of media literacy education found that, among 187 participants, those trained in media and information literacy (MIL) “were more likely to determine authenticity or otherwise of information and less likely to share inaccurate stories” (Adjin-Tettey). The author notes that some respondents in the control group, not exposed to MIL, were able to successfully identify false information, and cites Pennycook et al. (2020) in the assumption that potential study effects and the event of nudging people to think about the accuracy of information could make them cautious in looking for markers of authenticity before sharing information.

A 2022 study on older adults found that an interactive media literacy program significantly improved their likelihood of accurately identifying fake news from true, with 64% success rate pre-intervention, to an 85% success rate post-intervention (Moore and Hancock).

Findings measuring the impact of media literacy to combat COVID-19 misinformation can be particularly useful, and due to the recency and scale of the COVID-19 crisis, are not hard to find. A 2022 study by Borah et al. found a statistically significant association between media literacy for source behavior—those who think critically about the source attributed to news and information—and COVID-19 behavior (e.g., willingness to wash hands with alcohol-based hand rub or with soap and water; willingness to practice social distancing; avoiding touching eyes, nose, mouth, or eyes; staying home when feeling sick; wearing a mask in public gatherings). This effect on COVID-19 behavior was even stronger for media literacy for content, or those who think about the news content itself (Borah, Lorenzano and Vishnevskaya).

By providing people with media literacy programs, we can establish some basic practices for using digital media responsibly. Knowing the history of mis/disinformation, practicing methods for detecting mis/disinformation, understanding our vulnerabilities (e.g., when we're in a "hot" or emotional state <sup>3</sup>; being aware of confirmation bias), using pre-bunking exercises to get in the minds of a media manipulator, are all ways we can slow down, improve our analytical reasoning skills, and prepare for the harsh realities of the digital world.

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<sup>3</sup> Dan Ariely's 2010 book *Predictably Irrational* draws on hot and cold emotional states. Ariely writes that when in a 'hot' state, we are more likely to become emotional, excited, angry, hungry, in pain, or otherwise aroused in some way (Ariely).

*How does Media Literacy stack up in the Taxonomy of Solutions?*

Media literacy makes up just one of many policy proposals to curb mis/disinformation.

Solutions range from consumer-side concepts such as raising awareness around the scale and impact of mis/disinformation, to improving local news reporting and community participation, to building better fact-checking resources and capabilities.

Top-down organizational solutions range from information provisioning such as counter speech, to changing incentives, to adjusting algorithms to suppress or downrank mis/disinformation, to increased platform regulations, to antitrust law and the breaking up of large media platforms.<sup>4</sup>

But let's consider for a moment the outcomes of these policy levers. Would media literacy, or any one of the above proposals make a significant impact on their own to slow or stop the spread of mis/disinformation? Consider this angle – even if each of these solutions are enacted, and mis/disinformation is largely removed from digital media platforms around the world, what are the societal implications? Would every government follow suit, defining the mis/information problem in a similar context? How often would the consumer-side policies need refreshed to keep up with technological advances? And even if we have regulation and technological symmetry around the world, would we discover a newfound harmony of information in which everyone agrees on the facts?

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<sup>4</sup> See The current taxonomy of solutions, designed by Columbia University SIPA professor Anya Schiffrin, in the Index.



Justin Hendrix, founder and editor of Tech Policy Press suggests that “the problem of online mis/disinformation is substantial and unsolvable. But there are nevertheless regulatory, reputational, and other commercial reasons to address it. This has created a market for a variety of solutions bought by governments and enterprises.” (Schiffrin, Beg and Eyzaguirre) In an ideal world, free market solutions would be sufficient to solve this problem.

But I agree with Dr. Anya Schiffrin, director of Director of Technology, Media, and Communications specialization at Columbia SIPA, that there are a lot of factors working against a market-based solution. Truepic founder Mounir Ibrahim suggests, “fixing online mis/disinformation is either not part of their [technology companies] business model or antithetical to it” (Schiffrin, Beg and Eyzaguirre). We can’t rely on the platforms themselves to sort the issue, as its not conducive to their business model (at least at this time).

While there is promise in each one of these strategies, it is my opinion that unless the government heavily subsidizes it, we may never see a pure market solution. I believe we need a solution more sustainable than the never-ending ‘whack a mole’ of tech regulation. And although effective in the short run, I believe we need a solution more adaptive and more appealing to the public than media literacy.

## **Backing up**

*What causes the spread of mis/disinformation?*

I had the pleasure of studying with Yumi Shimabukuro, professor of Social Policy at Columbia SIPA. In a course on Comparative Social Policy, the students learned that sometimes seemingly impossible problems require disruptive or innovative solutions that don't always appear so obvious. A conversation I had with an NYU researcher in 2020 nicely illustrates this mental model: A community in sub-Saharan Africa struggling with education outcomes for several years asks a non-profit agency to assist. The agency provides the schools with books, electronics, and other learning resources to assist the students, however, the academic underperformance persists. It's not until researchers examine possible externalities that they discover the root cause of struggle for the students — a high prevalence of intestinal worms, with symptoms ranging from anemia, fatigue, and difficulty learning (Miguel and Kremer).

Mis/disinformation has existed in some form for hundreds if not thousands of years. But as we move further into the digital age, humans are being exposed to such information at a speed and volume never experienced before, and are even more motivated to use information to communicate, to connect, and to achieve a sense of belonging. Are the solutions above enough to counteract these powerful—often tribal—motivations, or will we need to take step back and consider more sustainable interventions?

*Why do people share mis/disinformation content?*

Considering the behavioral aspects of mis/disinformation, we can look to the environmental and cultural settings that encourage its spread. Consider a 2019 Yale study that investigated why people blatantly believe, engage with, or share inaccurate news (Pennycook and Rand). The researchers found that analytical reasoning is negatively correlated with the perceived accuracy of fake news, and positively correlated with the ability to discern fake news. Put another way, when we rely less on our critical thinking capacities, it's easier for us to fall victim to mis- and disinformation. Digital devices and digital platforms are designed to carry out tasks as quickly and efficiently as possible. Sometimes, when we look at our mobile phones, we aren't going in with a deliberate and analytic mindset. We often rely on these devices to distract, to relax, or to have fun. In other words, our minds are not prepared for the complex, harsh, and often manipulative realities of the digital world.

It's well known throughout psychology and behavioral science circles that repeated exposure to an idea makes that idea more believable over time (Kahneman). This "illusory truth effect", as Ecker et al. (2022) define it, arises when we use peripheral cues such as familiarity (the message has been seen before), processing fluency (the message is either encoded or retrieved effortlessly), and cohesion (an element of the message has references in memory that are internally consistent) (Ecker, Lewandowsky and Cook).

*Is there a lack of motivation to share accurate news stories?*

A 2022 study examined whether small monetary incentives could improve accuracy in identifying the validity of false content, the time spent researching false content, and the degree to which participants exercised civic online reasoning skills (Panizza, Ronzani and Martini).

The researchers found that the probability of giving a “definitely valid” correct response



Figure 1 Panizza et al. (2022)

increases by 4.4% in the incentive condition. Additionally, they found that both the incentive and a pop-up, a figure presenting a list of civic online reasoning techniques (see Figure 1), increased the use of civic online reasoning techniques to recognize false scientific content. Interestingly, the effect was markedly higher with the presence of the pop-up than with the monetary incentive. Last, the researchers confirmed that participants in the incentive condition took significantly more time than the control to evaluate a post, and the longer evaluation times predicted higher accuracy scores in correctly guessing the validity of posts (Panizza, Ronzani and Martini).

In March 2023, Rathje et al. hypothesized that a substantial portion of people’s judgements of the accuracy of news reflects motivational factors (Rathje, Roozenbeek and Bavel). Rathje et al. found that motivating people through small monetary incentives improved accuracy and reduced partisan bias in the judgement of headlines by about 30% (Rathje, Roozenbeek and Bavel). Interestingly, when incentivizing people to identify articles that would be liked by the participant’s in-group, the researchers

found reduced accuracy and increased intent to share politically congruent true and false news, supporting a common theory in social psychology that people are largely motivated to seek connectedness and belonging.

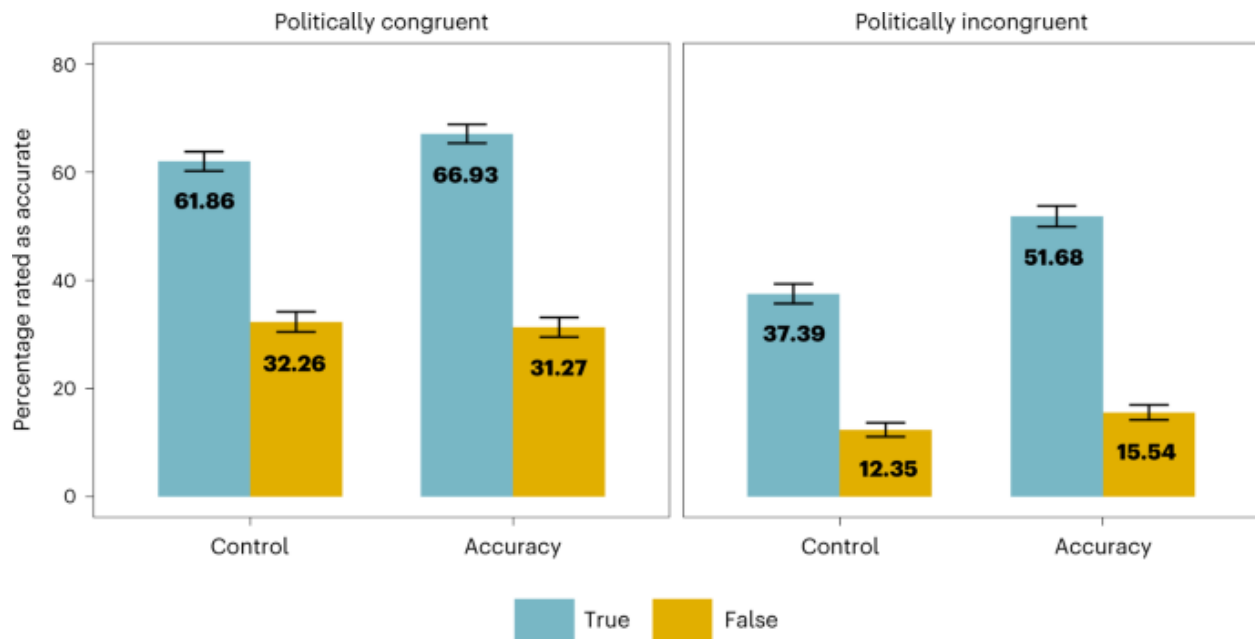


Figure 2: Accuracy incentives had the strongest impact on belief in politically incongruent true news. Rathje et al. (2023)

### *A mis/disinformation perfect storm*

Combine 'lazy thinking' with a digital ecosystem designed to serve more suggestive, sensationalist content over time, and reduce the motivation to share accurate news (or contrarywise, increase the motivation to share fake news to connect with an in-group), and it's only a matter of time before we're engrained in our own delusional mis/disinformation echo chambers.

**Mission: ‘Taking Back Control’**

I believe a solution lies in a collective effort to take back control of our time, energy, independence, and creativity. The myriad of solutions above is disorienting, for policymakers let alone the public. If you ask any number of researchers in the field of mis/disinformation to define the problem, you’re likely to get a diverse array of answers. We need a common cause to fight back against the media companies and the media manipulators who are taking advantage of our vulnerabilities, amassing billions in profit, while we become angrier and more divided. It’s a psychological game, our attention is on the line, and the tech giants, the media manipulators, and the propagandists are winning.

How do we do this? I suggest a backward mapping approach. Mariana Mazzucato in her book *Mission Economy* uses the US Apollo mission to depict how mission-oriented thinking can inspire cohesion and passion among several actors—in this case government, private industry, and the public—to work together toward a common goal, putting a man on the moon (Mazzucato). Mazzucato suggests defining an exciting and ambitious outcome, and moving backwards through the objectives, stakeholders, and processes to achieve this outcome.

Using Mazzucato’s teachings as a guide, imagine a world where, not only is mis/disinformation largely contained, but society is generally more self-aware, better at critical thinking, more collaborative, and less prone to impulsive decision making. What does that solution look like? How do people interact with one another? What are the positive spillover effects for climate change, war, civil rights, healthcare, violence, labor?

To drive motivation and encourage buy-in from private and public actors, “Taking Back Control” will require that we approach the problem from three different motivational perspectives: the Rider, the Elephant, and the Path.<sup>5,6</sup> I propose the following:

- **Speak to the Rider:** Knowledge via media literacy designed to increase students’ understanding of the mis/disinformation landscape, and ‘deep thinking’ modules (e.g., social and emotional learning) to improve critical thinking skills.
- **Speak to the Elephant:** Motivation via social and cultural narratives that illustrate the scale and severity of the mis/disinformation problem, and incentives to encourage fact-based information production and dissemination.
- **Chart the Path:** Guidance via simple roadmaps for policymakers and the public, guiding us through the steps needed to build support and awareness around the issue of mis/disinformation, and how to take action to correct it.<sup>7</sup>

To get there, we need a set of achievable objectives. This area of research sorely lacks in quantitative data. I suggest starting with what can be accomplished and measured in the immediate term and working toward longer more sustainable objectives.

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<sup>5</sup> In *The Happiness Hypothesis*, social psychologist and bestselling author Jonathan Haidt depicts the metaphor of a rider on an elephant to describe two motivating forces that guide behavior—the smaller, more decisive Rider as the logical, rational actor. The larger, more physically commanding Elephant as the emotional, irrational actor (Haidt).

<sup>6</sup> In *Switch*, authors Chip and Dan Heath call on Jonathan Haidt’s metaphor of the rider and the elephant, and add a third actor, the Path, to suggest that often the environmental contexts are just as important for guiding behavior (Heath and Heath).

<sup>7</sup> Chart the Path also includes enacting regulatory measures such as platform transparency to ensure that we’re inferring the cleanest possible link between cause and effect (see Aral & Eckles, 2019), and subsidies for new digital media platforms that reward accuracy in sharing news and information (see Rathje, 2023)

***Building momentum: what can help right now?****Media Literacy*

Following in the footsteps of Finland, the US and other nations should make media literacy compulsory in K-12 education and increase accessibility to media literacy for all members of society. Media literacy programs should be provided by public or non-profit entities to reduce or eliminate private industry bias and should come with a regular reassessment protocol to ensure programming is as current as possible to stay up with the rapidly evolving technological landscape. As discussed in this paper, media literacy cannot solve mis/disinformation on its own, but it is a necessary step to providing the public with the information they need to practice responsible media consumption.

*Transparency legislation*

Without transparency, it is virtually impossible to measure the impact of any intervention outside of a lab setting. David Nosák, writing for the Center for Democracy & Technology in 2021 argues that transparency is crucial if we are to hold digital platforms accountable. “Whether it is to shed light on the requests that governments make to companies to remove user-generated content, or to understand how online platforms themselves influence our information ecosystem, we need to know what is happening online before we can move to remedy any potential rights violations” (Nosák). Article 13 of the Digital Services Act (DSA), a regulation in EU law aimed to



create a safe digital space and protect the fundamental rights of users, requires providers of intermediary services to “publish, at least once a year, clear, easily comprehensible and detailed reports on any content moderation they engaged in during the relevant period” and that these reports shall include, among other things, information on the types and frequency of illegal content, the average time before action is taken, the content moderation measures being conducted, and the number of complaints received through the internal complaint-handling system (Digital Services Act).

By enacting transparency laws that provide access to data and cooperation from the platforms, such as those in the DSA, we can begin to conduct empirical investigations that infer causation, such as the model proposed by Aral and Eckles (2019). See Figure 3 Blueprint for Empirical Investigations of Social Media Manipulation, (Aral and Eckles) below.



Figure 3 Blueprint for Empirical Investigations of Social Media Manipulation, (Aral and Eckles)

***Looking Forward: what can protect us in the future?***

Media literacy programs can provide tools that slow the spread of mis/disinformation now, and transparency laws can help researchers and lawmakers infer the causal effects of the problem. But to build long lasting resistance, we will need to build on the critical thinking skills<sup>8</sup> and social and emotional learning skills that have left people—Americans in particular—vulnerable to manipulation. We need to build the skills that can keep up with the speed of media and technological advancement and protect the world from the future of mis- and disinformation.

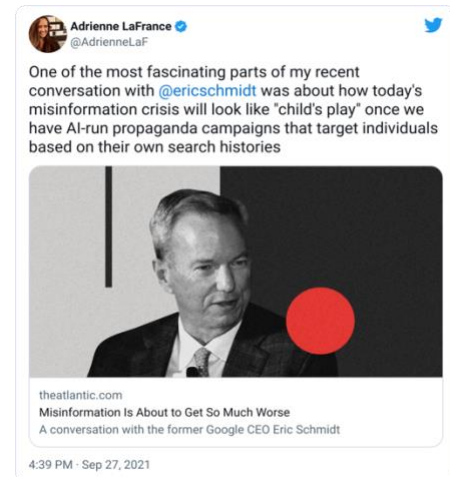


Figure 4 Source: Adrienne LaFrance, Twitter

*“Educational systems move slowly, but technology doesn’t....We need to act urgently to ensure our students’ ability to engage in civic life.”*

- **Joel Breakstone, Stanford News, 2019 (Spector)**

Social and emotional learning (SEL)

As discussed above, it is supported by research that cognitive behavioral therapy (CBT) can improve critical thinking skills and reduce the impact of biases on decision-making.

Mission Taking Back Control will bring social and emotional learning (SEL) to the

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<sup>8</sup> A 2019 Stanford University study of media literacy on international students found that, compared to the US, the IBDP students in Finland consistently outperformed in digital literacy of social media and online news, said to be a result of facilitating students’ critical thinking skills, as opposed to media literacy education (Horn and Veermans).

forefront of public education, helping K-12 students and beyond develop deep thinking skills that can improve awareness, critical thinking, decision-making, and other behavioral outcomes.<sup>9,10</sup> By building self-awareness and critical thinking skills, not only can we reduce the lazy thinking and impulsive decisions that lead to the consumption and circulation of mis/disinformation, but we can achieve innumerable positive spillover effects on life outcomes in the process.

### Mindfulness practice

Mindfulness practice is known to reduce anxiety, diminish stress reactivity, enhance coping, benefit attention, increase compassion, and strengthen emotional regulation (Mindful Schools). While there is limited research into the effectiveness of mindfulness to improve critical thinking and analytical reasoning skills, positive outcomes appear to counter several the emotional characteristics that make us susceptible to mis/disinformation—lazy or incoherent thinking, impulsivity, elevated emotion.

Mission Taking Back Control will engage stakeholders to introduce mindfulness programs into public education and increase funding to study the potential benefits of such programs to curb the spread of mis/disinformation.

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<sup>9</sup> A 2020 study found that PATHS, a classroom-based social and emotional learning (SEL) program for elementary school students, led to students who were less impulsive, less disruptive, and displayed less opposition to teachers and parents. In class, treated children become less likely to disturb lessons and more likely to focus on the teaching content (Sorrenti, Zöllitz, Ribeaud, & Eisner, 2020).

<sup>10</sup> See the Durlak et al. (2011) meta-analysis titled 'The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions' that shows an 11-percentile-point gain in academic achievement for students exposed to SEL programs.

*“If you want to build a ship, don’t drum up people to collect wood and don’t assign them tasks and work, but rather teach them to long for the endless immensity of the sea.”*

**Attributed to Antoine de Sainte-Exupéry**

A public-private partnership approach

Using Mariana Mazzucato’s wonderful story of the Apollo mission as a guide, federal government or an international agency could subsidize private industry to develop a social media platform that incentivizes accurate information production and dissemination. An inspiring leader or advocacy group could build a collection of facts and narrate a story that rallies society together to support a digital information mission that could benefit us all. Or much like we’re seeing with the growing climate and sustainability movement, advocacy groups could rise up to build awareness around the issue, and put public pressure on the tech giants that enable manipulative and damaging mis/disinformation to spread. Without the motivation to overcome the mis/disinformation problem, we are left to rely on top-down alternatives that have thus far struggled to make a significant impact.

## **Conclusion**

Assuming we’re dealing with a ‘lazy thinking’ and motivation problem, as this article suggests, what are other creative policy solutions that can get at the root of the issue? How can we test these solutions to measure outcomes? If we were to implement and execute each intervention in the supply/demand taxonomy of solutions cited above,

would we make a significant dent to the problem? Or would we be struggling to keep up with the rapid advancement of media and technology?

I believe that a policy suite that includes 1) improved **knowledge** of the problem and preventative measures via media literacy, 2) training in **critical thinking** and **awareness**, through social and emotional learning (SEL), cognitive behavioral therapy (CBT), and other cognitive health and mindfulness programs, 3) a heightened **motivation** to combat the mis/disinformation issue, using effective storytelling and creative incentives, and 4) presenting a **clear path** to a fact-based media ecosystem—such as a public-private digital media mission—not only hold great promise to reducing mis/disinformation today, but could prepare future generations for a host of future challenges, including the next era of information disorder.

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## Index

### *Information Disorder – Defining The problem*

The current consensus on mis/disinformation is that this content is being used to incite violence and crime against ethnic minorities <sup>11</sup>, has resulted in the death and displacement of children, has led to lower vaccination rates and has enabled increased mortality from COVID-19 <sup>12</sup>, has delegitimized journalism and science, and has silenced the most marginalized voices (Vosloo). Disinformation campaigns have been designed and implemented to target democratic process and elections <sup>13</sup>, have spread lies about the conduct and behavior in sovereign nations to justify international conflict and crimes against humanity <sup>14</sup>.

*“Since 2016, it appears that foreign states can afford to take some of the foot off the gas, because they have already created such sufficient division that there are many domestic actors to carry the water of disinformation for them.”*

- **Steven Lee Myers (2022)**

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<sup>11</sup> Former Facebook employee Frances Haugen has accused Facebook’s algorithms of “literally fanning ethnic violence” in Ethiopia (Hale and Peralta).

<sup>12</sup> It is well documented that online and offline misinformation can provoke vaccine hesitancy. A 2021 study on the impact of COVID-19 vaccine misinformation on vaccination intent found that, for those who had previously agreed to accept a vaccine, in fact *reduced their intent* to take a COVID-19 vaccine (by 6.2 percentage points in the UK, 6.4 percentage points in the US) after being exposed to recent misinformation (Loomba, Figueiredo and Piatek).

<sup>13</sup> In the U.S., violent conspiracy movements from the likes of QAnon, or the ‘Stop the Steal’ movements enabled the January 6 insurrection, where at least seven people had lost their lives in connection with the attack (Cameron).

<sup>14</sup> Since 2014, disinformation campaigns propagated by Russian state-funded and state-directed media have targeted Crimea and Ukraine, promoting false and provocative stories. about Crimea, and most recently about Ukraine. A recurring theme of the new Russian efforts is an argument that the United States under President Biden is wasting money by supporting Ukraine in its resistance to the Russian invasion that began in February.

In a time when professional journalism is on the decline, tech platforms are on the rise. Roughly one-third of U.S. adults get their news from Facebook, and 22% get news from YouTube. The issue has heavily saturated the US media landscape. False news within these platforms spreads faster than truthful news—six times faster according to one study that analyzed the propagation of misinformation on Twitter from 2006 to 2017 (Vosoughi, Roy and Aral). The scale of the problem is immense. As one example, the three-month runup to the 2016 US Presidential election saw false news stories favoring Trump being shared a total of 30 million times on Facebook, while those favoring Clinton were shared 8 million times (Allcott and Gentzkow).

Tech platforms are awash with professional media manipulators — experts who know how to use our worst instincts and impulses against us in the name of attention, engagement, and ultimately, profit. While a few tech giants host or enable most of the mis/disinformation that users see, they experience little to no accountability for the ill effects. Facebook has suggested that their product is not harmful, but those investigating the problem consider misinformation to be a harmful by-product in the current design of tech platforms, and that social harms can derive from the core business model (Fox). Misinformation on digital platforms drives user engagement, and this engagement translates into big money for the platforms, largely through advertising revenue. The Global Disinformation Index reports that private companies and political actors have sent at least \$235 million toward extremist and disinformation websites, by way of annual advertising revenue (Global Disinformation Index). A report by *NewsGuard*, a journalism and technology organization, found that top brands are sending \$2.6 billion to misinformation websites each year (Skibinski). With little

competition, enormous sums of money concentrated among a few corporations, and heavy lobbying power, it's not surprising that policymakers are struggling to find a solution.

*Level setting: what is misinformation, disinformation, and an infodemic?*

The nonprofit coalition First Draft lists seven types of content — called ‘The Deceptive Seven’ — that are commonly found in mis/disinformation campaigns (First Draft).

Content that falls under ‘The Deceptive Seven’ can include 1) satire, 2) false connection, 3) misleading content, 4) imposter content, 5) false context, 6) manipulated content, and 7) fabricated content. This content can span across both mis/disinformation. A few definitions provided by Wardle and Derakhshan (2017):

- I. Misinformation: When false information is shared but no harm is intended.
- II. Disinformation: When false information is knowingly shared to cause harm.

Misinformation is content that is false, but not created with the intention of causing harm (UNESCO). What distinguishes disinformation from misinformation?

Disinformation content is *intentionally* false, designed and published to deceive. The World Health Organization (WHO) defines an infodemic as an overabundance of information—some accurate and some not—occurring during an epidemic (World Health Organization). As we've seen recently with the COVID-19 pandemic, an overabundance of information during a crisis can create panic and make the sourcing of trustworthy and reliable information more difficult.

Keeping up with advancements in technology has always been—and may always be—a challenge for government regulators. And the lag to regulate digital media has been exacerbated by a massive tech industry lobbying apparatus. Top-down solutions look bleak.

*“Quality information and a healthy public square are not a bonus, but a fundamental cornerstone of a functioning democracy. That foundation is degrading badly.”*

- **Laleh Ispahani, Democracy Journal**

### *A brief history*

Most of us are now familiar with QAnon. But what many don't know is that QAnon, a conspiracy network predicated on the idea that there is a secret cabal that is taking over the world, is not dissimilar to a narrative propagated by Russian anti-Jewish conspirators around 1902, through *The Protocols of the Elders of Zion* (Stanton).

According to some researchers, information fabrication has been a feature of human communication since the Roman times when Antony met Cleopatra (c. 44 BC), if not earlier (Posetti and Matthews). Historic examples of “fake news” date back to 1835 when the *New York Sun* published the 'Great Moon Hoax', claiming that an alien civilization existed on the moon. As communication modernized from print to radio, from radio to television, and from television to the internet, the lines continued to be blurred between satire and fact-based news.



Figure 5 image via Wikimedia Commons, public domain

As media became more available to the public, it became more weaponized. Antagonists began to use disinformation<sup>15</sup> as a mechanism to stir unrest within populations, to sway public opinion, and to gain power. Posetti and Matthews (2018) provide a timeline of ‘information disorder’ detailing the range of disinformation campaigns conducted by state and non-state actors in recent history. Examples include but are not limited to:

- I. **1914-1918 – World War I:** Propaganda used to encourage recruitment, appealing to nationalism and patriotism.

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<sup>15</sup> A term traced to the Russian word *dezinformatsiya*, used by Soviet planners in the 1950s to disseminate false reports to intentionally mislead the public (Jackson).

- II. **1917 – The German corpse factory:** British propaganda used to disparage German soldiers in WWI may have contributed to initial skepticism of Nazi atrocities.
- III. **1933 – Reich Ministry of Public Enlightenment and Propaganda established:** an organization established by Joseph Goebbels to spread Nazi messages of hatred-inciting violence against Jews, using theatre and press.
- IV. **1939-1945 – World War II:** Hitler’s propaganda campaign used to demonize and persecute Jews was so effective that it gained popular support at the time, and Holocaust denialism that continues in the 21<sup>st</sup> century.
- V. **1947-1991 – The Cold War:** the U.S. and Soviet Union engaged in disinformation as a core tactic to gain ideological support, both internationally and domestically (Ward, Pierson and Beyer).<sup>16,17</sup>
- VI. **2014–current Russia and Ukraine:** Reports of *Internet Research Agency*, an organization based in St. Petersburg, emerge that agents in are being “paid to flood forums and social with anti-Western and pro-Kremlin comments”.<sup>18</sup>
- VII. **2016 US election:** The term ‘fake news’ is weaponized by US President Donald Trump and spread around the world. Conspiracy theories become common in digital media, spread to mainstream news networks.<sup>19</sup>

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<sup>16</sup> The “Red Scare” encompassed a period from the late 1940s through the early 1950s. Senator Joseph R. McCarthy (R-Wisconsin) claimed that a significant number of Communists had infiltrated the US State Department, causing paranoia throughout American politics, culture, and society (Storrs).

<sup>17</sup> Operation INFEKTION, an active measure disinformation campaign designed and initiated by the KGB to blame the emergence of AIDS on the United States in the early 1980s (Boghardt).

<sup>18</sup> For years, Russian state-funded and state-directed media have pushed false and sensationalized stories about Ukraine (ShareAmerica), leading up to Russia’s invasion of the sovereign country on February 24th, 2022.

<sup>19</sup> Two studies commissioned by the U.S. Senate Intelligence Committee suggest that Russian misinformation campaigns targeted hundreds of millions of U.S. citizens during the 2016 presidential election (Aral and Eckles).



VIII. **2019-current COVID-19 pandemic:** misinformation and conspiracy theories based on the origin of the coronavirus, the number of cases <sup>20</sup>, the efficacy or legitimacy of the vaccines <sup>21</sup>, and rumors of odd and sometimes dangerous treatment methods <sup>22</sup> spread around the world.

*What does the public think about mis/disinformation?*

About half of U.S. adults (48%) believe that the government should take steps to restrict false information, even if it means losing some freedom to access and publish content, according to a 2021 Pew survey of 11,178 adults (Mitchell and Walker; Bernstein). And 59% of U.S. adults agree technology companies should take steps to restrict misinformation online, even if it puts some restrictions on Americans' ability to access and publish content (Mitchell and Walker). The figures are up from the same survey conducted in 2018, from 39% and 56%, respectively.

Yet not everyone sees disinformation as a problem. A 2022 Pew Research study surveyed 24,525 people from 19 countries to assess the perceived threat to the spread of misinformation. Across the entire sample, 70 percent of respondents believe that the spread of false information online is a major threat to their country. Responses varied by age across countries, but on average those aged 50 and older perceived

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<sup>20</sup> In a study conducted by KFF COVID-19 Vaccine Monitor (October 14-24, 2021), 38% of respondents believed that the government is exaggerating the number of COVID-19 deaths, and 18% believed that deaths due to the COVID-19 vaccine are being intentionally hidden by the government (Hamel, Lopes and Kirzinger).

<sup>21</sup> In the same KFF (2021) study cited above, 7% of participants believed that the COVID-19 vaccine effectively implanted a microchip in your body.

<sup>22</sup> In the same KFF (2021) study, 14% of participants believed that Ivermectin, a drug used to treat parasitic worms, is a safe and effective treatment for COVID-19.

misinformation to be more of a threat than those aged 18-29. In the U.S., results skewed toward false information being a major threat, but was split across party lines, 66 percent of Donald Trump voters compared with 78 percent Joe Biden voters (Poushter, Fagan and Gubbala). As Théophile Lenoir suggests in a 2022 article in Tech Policy, “politics is about describing the world to justify actions” (Lenoir). Thus, it is important to consider that how mis/disinformation is defined, and the solutions put in place to counter it, is likely to be decided by those in power at any given time. As witnessed in recent history, policies that are designed and implemented in the West tend to reverberate across all corners of the globe, affecting the powerful as well as the disenfranchised.

Although a starting point for its spread, mis/disinformation isn't beholden to social media and video platforms such as YouTube. Mis/disinformation often carries over to mainstream digital platforms such as cable news, where it is further legitimized and engrained in the fabric of our societies.

*The current taxonomy of solutions*

There are a number of ideas, policy proposals, and regulations currently in place making great efforts to curb the spread of mis- and disinformation. Dr. Anya Schiffrin at Columbia University SIPA offers a comprehensive framework that presents solutions from the perspective of a demand vs. supply model (Schiffrin, Taxonomy of Solutions – Supply vs Demand Side). On the demand

side, Schiffrin lists 1) raising awareness, 2) community participation, and 3) fact-checking. The supply side includes 1) information provisioning, 2) changing incentives, 3) algorithms, 4) regulations, and 5) breaking up platforms.

Taxonomy of Solutions – Supply vs Demand Side	
Demand	Supply
<b>Raising Awareness</b> e.g. media literacy training; reporting on the platforms so that people understand the effects of mis/disinformation; Researcher Safe Harbour Laws to protect academic research	<b>Information Provisioning</b> Counterspeech and providing more speech e.g. by supporting media pluralism and quality news, including local news support and covering big tech
<b>Community Participation</b> e.g. local news reporting, building trust & engagement, newsroom visits	<b>Changing Incentives</b> e.g. advertising boycotts
<b>Fact-Checking</b> Includes labeling and browser extensions that audiences can use Middleware (overlaps with Supply side)	<b>Algorithms</b> Suppression, downranking of content, removal of bots, de-platforming
	<b>Regulations</b> i.e., hate speech laws, intermediary liability. Banning or taxing microtargeting Content Moderation Facebook Supreme Court
	<b>Break up Platforms</b> New Facebook - build new platform or break up existing one Antitrust Lawsuits

Figure 6 ‘Taxonomy of Solutions’ by Dr. Anya Schiffrin (2023)

The Forum on Information & Democracy, a non-governmental working group developed to address infodemics, suggests a regulatory framework made up of four structural challenges with solutions for each. They include 1) platform transparency; 2) content moderation; 3) promotion of reliable news and information; and 4) private messaging services—core areas that have shown some cohesion across the academic landscape as of late (Information Democracy).

*Transparency*

On the supply side, there is no shortage of ideas, definitions, concepts, and proposals. Yet there is little empirical evidence to back up these strategies. For a problem that is so

steeped in technology and data, there is little quantitative evidence to infer causal relationships, the impact of current interventions, or the promise of future ones.

One of UNESCO'S recommendations in their 2020 report titled 'Balance Act' is for internet communications companies to "produce detailed and frequent public transparency reports, including specific information on identification of the origins, scale, views, flow and types of disinformation, removals of disinformation, demonetization of disinformation content, and suspension of accounts spreading disinformation, as well as provide information on other curational steps such as labelling and appeals" (Posetti and Bontcheva). The Forum on Information and Democracy lists transparency in three of its twelve main recommendations, stating that "access to the qualitative and quantitative data of the leading digital platforms and access to their algorithms" is a prerequisite for evaluation (Information Democracy). Europe's Digital Services Act (European Parliament) is stacked with transparency policy, with standards requiring internet companies allow access to platform algorithms, remove illegal products, services, or content, protect minors from targeted advertising, and inform users of how content is recommended to them.

South Korea has taken action via information provisioning to reign in the information overload issue around the COVID-19 pandemic. Through the Infectious Diseases and Prevention Control Act, the South Korean ministry is required to disclose all necessary information to citizens for preventing the spread of infectious disease (Access Now).

Like many other sectors with heavy lobbying power <sup>23</sup>, without transparency, it's arguable that no other regulatory measures can be effective, and without choice, users will be beholden to digital platforms that are slow, or resistant, to change.<sup>24,25,26</sup>

### *Antitrust law*

In a 2018 article published to Vox, Hubbard argues that fledging antitrust law and lack of competition allows purveyors of fake news to flood only a few platforms with mis/disinformation, while preventing users from finding alternative platforms to browse, produce, or share content (Illing). What would breaking up of the tech giants look like in the context of mis/disinformation? Skeptics argue that doing so will only lead to disinformation spreading more widely. Schiffrin et al. (2022) suggest that the economic and political barriers are too vast for market-based solutions.

But proponents of antitrust suggest that a wider variety of choices would quarantine the most extreme voices on the web, less likely to be spread into mainstream arenas

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<sup>23</sup> Data on the role of firearms in association with American violence is scarce. Researchers from the University of Chicago point to two congressional acts: 1) an amendment in the 1996 Omnibus spending bill (the Dickey Amendment) that required "none of the funds made available for injury prevention and control at the Centers for Disease Control and Prevention (CDC) be used to advocate or promote gun control;" and 2) a 2003 federal spending bill (Tiahrt Amendment) restricting the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) from sharing firearms trace data. This lack of data and empirical evidence essentially stalls any attempt to prove or disprove the potential impact of gun control legislation (Roman).

<sup>24</sup> Sally Hubbard, senior editor of tech antitrust enforcement at the Capitol Forum, makes the case in a 2017 Forbes article that tech giants such as Facebook increase dependence until few viable alternatives exist, and then use this power to affect policy.

<sup>25</sup> In the EU, just ten companies are responsible for almost a third of the total tech lobby spend (Bank, Duffy and Leyendecker). In the US, Amazon, Apple, Google, Meta and Microsoft spent nearly \$69 million lobbying the federal government in 2022 (Feiner).

<sup>26</sup> Laleh Ispahani in the Democracy Journal argues that fundamental competition reform could open the door for independent media and alternative platform business models that do not profit from optimizing for outrage (Ispahani).

(Masnick). In a blog post titled ‘In the Future, Our Attention Will Be Sold’, bestselling author Mark Manson explained that the most extreme views tend to get the most attention, as that’s how the algorithms in today’s ‘attention economy’ are designed (Manson).

*“...it appears as if the world is spiraling into a festering shithole, when really, we’re just getting exposed to the people on the fringes more often than ever before.”*

- **Mark Manson (2014)**

Whether or not stronger antitrust laws and greater choice in digital platforms will have any effect depends on whether platforming mis/disinformation (the increased ‘virality’ of content on larger digital platforms), or a wide range of disparate views in smaller circles, is the defining issue.

### *AI solutions*

Last, innovative solutions such as the use of AI may be able to contain mis/disinformation while opening the door for media integrity and verification (Schiffrin, Beg and Eyzaguirre). Using advanced AI techniques such as natural language processing (NLP) to detect mis/disinformation to stop it before it’s spread, pattern recognition with machine learning to detect malicious information are novel examples. Many challenges exist in this domain, such as how to control for bias and error, and the technology is yet to be proven.

### *Pre-bunking*

On the demand side, “pre-bunking” equips people to recognize and resist misinformation by showing them the tactics and tropes of misleading information before they encounter it on digital platforms. Games like *Bad News* and *Go Viral!* let players act as conspiracy theorists with the objective being to initiate a successful misinformation campaign. Google released an online game called *Interland* where the player can float around as a robot character through digital worlds (e.g., “Reality River” for example) that “flows with fact and fiction.” (Hsu) Researchers at the University of Cambridge learned that once people had participated in the *Bad News* game, they were less likely to consider tweets using the same techniques were reliable (Bond).



Figure 7 *Interland* game, Google