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Request for Information on Federal Priorities for Information Integrity Research and Development

International Research & Exchanges Board (IREX)

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Request for Information (RFI) No. 87 FR 15274

Federal Priorities for Information Integrity Research and Development

Organization Name	Point of Contact
IREX	Researcher from IREX

Introduction

Established in 1968, IREX is a global non-profit organization headquartered in Washington, DC. IREX has embraced a people-centered approach, investing in development that maximizes human potential and improves the conditions that help people thrive to promote positive lasting change globally. With an annual portfolio of \$90 million, IREX maintains presence in over 100 countries through innovative programs that address information manipulation, empower youth, cultivate leaders, strengthen institutions, and extend access to quality education and information. This global portfolio includes the use of multiple strategies to help individuals, communities, and organizations protect information integrity and build resilience to information manipulation and produce a healthy media environment, including trainings, campaigns, institutional strengthening of media and watchdog groups among others.

IREX would like to thank Networking and Information Technology Research and Development (NITRD) National Coordination Office (NCO) and National Science Foundation (NSF) for the opportunity to provide feedback related to specific questions that reflect lessons learned and identified best practices from our global program experience.

Information Requested:

1. Understanding the information ecosystem: There are many components, interactions, incentives, social, psychological, physiological, and technological aspects, and other considerations that can be used to effectively characterize the information ecosystem. What are the key research challenges in providing a common foundation for understanding information manipulation within this complex information ecosystem?

Research is often poorly resourced and/or siloed into a single discipline, e.g. technology, psychology, etc. when a multidisciplinary approach is required to develop a shared understanding of information manipulation. IREX believes that developing a common understanding of information manipulation requires exploration of the technological aspects of the ecosystem (e.g., bots, artificial intelligence (AI), and virtual reality (VR)) and the strengths and challenges of people who engage in the system (e.g., users, policy makers, ecosystem developers) (Glasgow et al., 2012). In an effort to explore the complexity of these interactions, IREX created the [Vibrant Information Barometer \(VIBE\)](#), IREX's annual index to track how information is

produced, spread, consumed, and used. Another of IREX's efforts, [Securing Access to Free Expression \(SAFE\)-L2D](#), explores how journalists can be supported to engage with information and information consumers securely to prevent the spread of manipulated information. Investing in research that would enable practical application of multidisciplinary approaches, such as VIBE and SAFE-L2D, will help develop meaningful and differentiated understanding of the information ecosystem. In particular, the National Science Foundation's Accelerator program should build on previous research successes related to information manipulation, issuing opportunities for multidisciplinary teams to explore systems-levels approaches to develop common terminologies, theories, and understandings of the protective and risk factors for information manipulation within an ecosystem. To reach a common understanding of information manipulation and use it to engage multidisciplinary stakeholders, we need to understand its impact in the information ecosystem across sectors.

The politicization of information manipulation research creates obstacles to achieving a common understanding of information manipulation in the information space and generalizable, actionable, and credible results. Studies suggest that manipulative information creates pernicious cycles that foster disbelief, undermining trust in credible sources of information, attacking established methods of creating a common understanding of issues and solutions, and perpetuating belief in manipulated information (Jaiswal et al., 2020; Marwick & Lewis, 2017; Sharp, 2008). IREX proposes several methods for addressing these challenges. First, IREX supports this RFI's framing of the issue as "information manipulation," as this language establishes a productive line of inquiry without using now-politicized terms, such as "disinformation, fake news, misinformation, propaganda, conspiracy." Second, given the ongoing efforts to spread manipulated information, there is a need to ensure that even the term "information manipulation" does not become politicized. The federal government may seek to promote the acceptability of information manipulation research by seeking bi-partisan agreement on the terms around information manipulation and issuing RFIs and funding opportunities that address information manipulation regardless of its source, target audience, or intended effect. Encouraging agreement around terminology and definitions may also promote a common understanding of the challenges within ecosystems, such as Youtube, Facebook and Twitter, which apply unique terminologies and rules to addressing problematic information sharing (Aral & Eckles, 2019; Geeng et al., 2020).

Online information ecosystems provide differential levels of transparency and platforms for data access (e.g., public application programming interfaces (APIs)), creating barriers to the development of a common understanding of information manipulation. Research on online platforms is essential to understanding of the ever-evolving information landscape, especially its incentives and social and psychological dimensions. Given the global reach of these platforms, research on these ecosystems have the potential to produce generalizable inferences about the effectiveness of interventions not just in high income countries, but in low and middle income countries where research is lacking. In the aftermath of the 2018 Cambridge Analytica scandal, platforms restricted researcher API access (Tromble, 2021; Vallury et al., 2021; Walker et al., 2019). Researchers' lack of API restricts access to the data required for research involving rigorous causal inference (Pfeffer et al., 2022; Tsou, 2015), inhibits implementation of studies that could lead to understanding of behaviors associated with information manipulation, creates labor-

intensive data collection conditions (Aral & Eckles, 2019), and limits the ability of researchers to collect “large or representative samples of real-world events” (Walker et al., 2019). Twitter’s history of providing public API for researchers has made research over-reliant on Twitter-related content even though Twitter (and other platforms) remain a black box for researchers (Pfeffer et al., 2022; Tromble, 2021). Ecosystem creators’ deeper engagement and collaboration with researchers would be essential to move the research field forward from weaker quasi-experiments or observational studies to causal inference with actionable results (Tromble, 2021).

2. Preserving information integrity and mitigating the effects of information manipulation: Strategies for protecting information integrity must integrate the best technical, social, behavioral, cultural, and equitable approaches. These strategies should accomplish a range of objectives including to detect information manipulation, discern the influence mechanisms and the targets of the influence activities, mitigate information manipulation, assess how individuals and organizations are likely to respond, and build resiliency against information manipulation. What are the key gaps in knowledge or capabilities that research should focus on, in order to advance these objectives?

To mitigate the effects of information manipulation, research should focus on the resilience ecosystem, developing and testing multi-level theoretical models. Learn to Discern (L2D), IREX’s flagship initiative for empowering critical information engagement, has been adapted in 20 countries and with multiple, diverse populations ranging in age, native language, socioeconomic status, and geography. In implementing L2D and its multiple iterations including L2D-SAFE, L2D for decision makers, digital wellness, and others, we have come to view resilience as an ecosystem, equally dependent upon measures on *system, network, organization,* and *individual* levels of resilience building. Research that addresses multiple levels of behavioral determinants have the potential to be more effective than individual-level interventions alone and utilizing a social ecological approach would be critical for addressing information manipulation (Eldredge et al., 2016). There are multiple theoretical models that could be reviewed against the complexities of internal and external incentives, motivations, and specifics of information engagement upon which a multi-level model can be built including, for example, inoculation theory, (Compton et al., 2021) social cognitive theory (Bandura, 1977, 2001), information–motivation–

IREX Ecosystem of Resilience Approach to Information Manipulation

Community - In L2D, we use the principles of behavior change to introduce new behaviors, teach emotional regulation, cross-checking sources, and waiting before immediately sharing content, and create a close-knit community to reinforce these new behaviors.

Media - We support locally led strategies to address online disinformation. In Mozambique, we used machine learning and our Media Content Analysis Tool to [identify bias in news articles](#). This type of technology has the potential to strengthen news outlets’ vetting processes at scale.

Information consumers - We are building plug-ins, apps, and other tools that alert users when their data is being harvested for disinformation campaigns.

behavioral skills model (Fisher et al., 2003), etc. theories about decision making and rationality, such as the System I and System II thinking (Tversky & Kahneman, 1989) that have informed our L2D work for example. We have combined insights from their research with adapted elements of the information-(added skills) - motivation-behavior (added action and network to reinforce and maintain) and inoculation theory as well as best practices from initiatives and research in fighting addiction, gang membership, and other internally and externally absorptive phenomena. We are aware that we have only scratched a surface of what research could be informing truly impactful initiatives but know that all of these and many other models should also be considered, especially when trying to understand the intended and unintended abuse of our cognitive processes in today's information ecosystem.

To promote equity in information manipulation research, strong and universal ethical guidelines are needed. The study of information manipulation is burgeoning with few common guidelines for ethical conduct of such research. Ethical guidelines that center the participants in research, engage communities of interest at the outset of study development, and use human-centered techniques are needed to promote safety while enabling the study to draw rigorous causal inference. Of particular interest and concern is the use of inoculation theory, which may be effective in building resilience around information manipulation, but also requires that individuals are exposed to information manipulation as part of the intervention (Compton et al., 2021). The creation of these guidelines may be informed by other disciplines that have long grappled with the potential ethical issues, including, for example, violence prevention (Hartmann & Krishnan, 2014, 2016). In addition, interventions like this should be designed with intentions to disseminate and apply findings outside of the research environment. Because of the nature of the topic, it is unwise to rely on voluntary uptake/audiences seeping out these tools, and many of these tools, especially targeting children and young adults, such as games, require an adult champion/promoter such as educators, parents, and caregivers. These stakeholders need to be on board with using “anti-hero” and other tools that utilize negative examples. Their reluctance to use them, should it be registered, must be considered a valid obstacle to behavior change.

IREX recommends recognizing and deliberately focusing efforts on supporting locally-led strategies to build trust. The shift in the information infrastructure, which has so gravely affected the traditional media market, has enabled an unprecedented volume, speed, and reach of malign, low quality, or simply incorrect information, ranging from effective and targeted propaganda and influence campaigns, to misinformation, clickbait, and other forms of information “noise”. This has drastic consequences on the trust in media and civil society; on audience's attention spans and on the ability to agree on facts; and on the business models and incentives for information producers. Most alarmingly, disinformation has been used as an effective tool to drive and aggravate divisions, populism, and polarization—undermining social cohesion, peace, and reconciliation processes, democracy, and rule of law. Trust, once lost, is hard to restore, and has significant, negative implications for democratic integrity and the media sector's watchdog role.

To maintain a healthy information environment, research on the long-term effects of interventions on attitudes, skills, and behaviors is needed. Extant literature typically focuses on knowledge, skills, and intentions that are reported during the experiment or shortly thereafter. This approach creates multiple gaps in our understanding of interventions to create and maintain a healthy information environment. First, with few exceptions (Murrock et al., 2018), we lack knowledge about if the target skills and practices are maintained to reduce vulnerability to information manipulation. In particular, cognitive behavioral and emotional regulation components as well as digital wellness have shown promise in multiple studies, but their effectiveness post-intervention require further exploration (Karduni, 2019). Second, we lack knowledge about behavioral change associated with interventions, which could provide unbiased proof of the intervention effectiveness and increase the causal inference that can be drawn by our studies. Research that supports longitudinal studies and collaboration with ecosystem creators could help fill these important gaps in knowledge.

3. Information awareness and education: A key element of information integrity is to foster resilient and empowered individuals and institutions that can identify and abate manipulated information and create and utilize trustworthy information. What issues should research focus on to understand the barriers to greater public awareness of information manipulation? What challenges should research focus on to support the development of effective educational pathways?

To create and support resilience against information manipulation, research should move beyond exploring a single factor or skill to examining the package of skills and practices required to create resistance to information manipulation. In general, studies seek to isolate the effect of singular intervention techniques to build resiliency to manipulated information (e.g., analytic thinking, cognitive reflection, warning labels, emotional regulation, digital wellness) (Pennycook & Rand, 2021). However, it is extremely unlikely that such a complex issue can be solved through one skill or by one person alone or that the same skill is responsible for resilience in all population. Information manipulation creates emotional, mental, and even physical reactions (Marwick & Lewis, 2017; Swire-Thompson & Lazer, 2020) and has roots in systems-level inequalities including, for example, structural racism and discrimination (Cooke, 2017, 2018a, 2018b). Research should leverage agile study designs, such as the MOST framework (Collins et al., 2007) to understand the package of skills and practices needed to build resilience. An equitable approach would focus on adapting and testing the mechanisms by which these packages of skills can be delivered to different groups in a responsible and effective manner, as well as obstacles and reasons for why some populations are struggling with gaining these skills – aspects of access, format, etc.

Research must move beyond the language and assumptions of partisanship as cause or vulnerability to information manipulation to explore additional, modifiable factors. Studies often cite partisanship or identification with a specific ideology as risk factors for belief in manipulated information (Allcott & Gentzkow, 2017; Geeng et al., 2020). While factors such as

ideology cannot be ignored, we also recognize that manipulated information may reach and impact individuals differently based on multiple and often intersecting characteristics (e.g., socioeconomic status, experience of structural discrimination etc.) For example, marginalized groups are often targets of manipulated information rooted in historical inequities and there is a need learn more about building and sustaining behaviors around navigating hate speech and targeted disinformation (Cooke, 2021). We must also recognize the role of information engagement in shaping ideologies and belonging to partisan group – it is not inconceivable that information engagement habits that increase vulnerability to disinformation are, at least partially, the cause, and not the result of these characteristics. Research that seeks to understand what constitutes healthy resilience to information manipulation and what contributes to individuals and communities developing or not developing competencies that are associated with this resilience would have shed the light on approaches to increase it.

Public spaces and areas of community gathering could be an important educational pathway for addressing information manipulation, but not without significant investment in local resources. Related to the previous point, there are notable community-level disparities in internet access, mental and emotional health resources, educational opportunities, local news outlets/papers and these disparities may make some community members more vulnerable to manipulated information. In many instances, education on how to use the online space in a way that does not undermine democratic values and human rights (both our own and others) is quickly becoming inequitable. It is increasingly the case that well-resourced communities/countries/school districts will (and many already do) offer these skills to their members, citizens, and students, deepening divisions (Vogt & Scott, Forthcoming). Multiple solutions can be offered - whether policy and mandates, thoughtful and resonant resources, or trusted local community advocates for equitable access – as key for preventing further fracturing along the “factual” fault lines in societies worldwide. Policies that mainstream media and information literacy education, create safe public spaces for engagement using, for example, the use of urban planning and publicly owned spaces for engagement, are needed to close the growing divides and focus on especially vulnerable populations targeted with conspiracy theories and propaganda.

Greater public awareness may be raised through research on the second and third order effects of manipulated information. Understanding the cost of manipulated information on all aspects of societies, ranging from the individual to the society, may help galvanize support for interventions to address the widespread issue of manipulated information. Given the social costs of manipulated information in relation to the COVID-19 pandemic alone, the costs of investing in people and educational systems as part of primary strategies will pale in comparison.

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