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Treating a Viral Culture: Using Cultural Competency and Social Informatics to Design Contextualized Information Literacy Efforts for Specific Social Information Cultures

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4   Treating a Viral Culture: Using Cultural Competency and Social Informatics to Design Contextualized Information Literacy Efforts for Specific Social Information Cultures

Rachel N. Simons and Aaron J. Elkins

Introduction

Information does not exist in a void; it is created by people, for people, in specific contexts and for specific purposes. These contexts and purposes also shape how information is shared between individuals and within groups. Researchers have long argued for the importance of understanding information behavior in context (Agarwal, 2017; Courtright, 2007), including the role of sociocultural factors (Savolainen, 2016; Shin et al., 2007). Yet, even given that information behaviors are performed in the context of sociocultural belonging, the shifting approach to understanding the "post-truth" nature of information literacy (Cooke, 2018) starkly underlines that information behaviors within a single context may be far from homogenous. A single larger sociocultural context (e.g., the population of the United States) can contain multiple different social information cultures; members of one information culture can even find another information culture to be completely incomprehensible.

Thus far, little research has focused particularly on how shared sociocultural frameworks shape information behavior within groups or communities as a culture. In this chapter, we develop a novel framework for understanding "social information cultures" (SICs) as unique subjects of study. We argue that developing an understanding of how people interact with information, as contextualized within a specific SIC, can enable information literacy (IL) efforts that more effectively address members of that culture. This process requires information professionals to focus on increasing their social information cultural competency (SICC).

In order to understand fully any social information culture, we must also examine how a culture is shaped by and reflected in its usage of information and communication technologies (ICTs). In today's global information society ICTs, such as social media platforms, bring together individuals from different geographic areas and allow them to create distinct social

information cultures that leverage both social and technical aspects to maintain a community. The field of social informatics (SI) focuses on using a sociotechnical approach to understanding the "design, uses, and consequences of information technologies" while "[taking] into account their interaction with institutional and cultural contexts" (Kling, 2007, p. 205). Accordingly, SI provides a crucial framework for using cultural competency to understand a particular social information culture in context.

After describing the SICC framework, we illustrate how SICC can be used to analyze a case study of the COVID-19 misinformation SICs engaged with through social media during the current pandemic. In particular, we examine three current IL intervention approaches for addressing COVID-19 misinformation (inoculation or "prebunking" efforts, accuracy prompts before posting or sharing, and online conversation groups). During this examination, we consider how each approach compares to key features of the SICC framework, and how adopting the SICC framework might enhance such IL efforts. Finally, we conclude with some suggestions for how IL and SI researchers might employ the SICC framework to help information professionals treat and inoculate those infected by viral misinformation cultures.

Social Information Cultural Competency: A Sociotechnical Approach to Understanding Information Behaviors in Context

In this section, we discuss the different frameworks that contribute to our novel approach to understanding SICs, by bringing together theoretical perspectives on psychosocial understandings of information behavior, cultural competence, and SI. We then discuss how information professionals might better design contextualized information literacy efforts by applying SICC.

Contextualizing information behavior within social information cultures

We define culture (Jahoda, 2012) here primarily as a socially constructed, systematic set of beliefs and concomitant behaviors to which individuals may adhere—and in which they may engage to various extents—in order to experience social belonging. A key part of those beliefs and behaviors is determined by their relationship to narratives within the culture (Bruner, 2014; Miller et al., 2007), including both shared and personal narratives (Hammack, 2008). All human beings need to feel a sense of belonging to/in a sociocultural context (Allen et al., 2021); increasingly, many people use online interactions to foster a sense of social belonging (Meshi et al., 2020). Social media is an important tool for fostering belonging in educational settings (Vaccaro et al., 2015), work settings (Eren & Vardarlıer, 2013), and for older adults (Sum et al., 2009).

In addition to culture, a variety of psychosocial factors interact to create information contexts that influence peoples' information behavior (Hollister et al., 2020). Identity performance is one way to indicate belonging to a given culture; identity performance is the purposive expression of certain behaviors and suppression of other behaviors (O. Klein et al., 2007). Identity performance also includes information behavior (O. Klein et al., 2007; Mahmud & Wong, 2021; S-O'Brien et al., 2011; Torres, 2010; Vignoles et al., 2006). As individuals participate in both information and cultural contexts, they engage in particular information behaviors guided by beliefs that provide them with comfort and moral direction; they additionally hope their beliefs and subsequent actions will provide them with a better life (Shermer, 2002).

While research on information worlds (Burnett & Jaeger, 2008), social media culture (Cino & Formenti, 2021; Megarry, 2018; Odii, 2020), conspiracy culture (De Maeyer, 2019; Grodzicka & Harambam, 2021), and communities of practice (Wenger & Snyder, 2000) address some aspects of information behavior in particular sociocultural contexts, they have not necessarily considered the relationship between information behavior and identity performance as situated within a sociotechnical context. In particular, very little research has considered this relationship within the context of cultures whose information behaviors are intertwined with information and communication technologies (ICTs); such social information cultures may exist in hybrid online and physical spaces, primarily online, or even shift between spaces.

The concept of an information culture is a particularly powerful tool for interrogating information behaviors performed in a situated context. Current uses of the term "information culture" typically focus on knowledge management and sharing behaviors within an organizational work context, often in relation to productivity (Choo, 2013; Oliver, 2017). This concept of information culture is important, as it provides a tool to interrogate information behaviors performed in the particular context of an organizational environment. However, because of its critical value, we argue that the term "information culture" should be extended to contexts beyond the traditional organizational model, to include other groups and communities of practice. We therefore propose the term "social information culture" (SIC) to understand better the information behaviors that are performed in the context of sociocultural belonging, and within a specific sociotechnical community that includes ICT use as an integral feature.

Social information cultural competency

A single larger sociocultural context (e.g., the population of the United States) can contain multiple different SICs. In particular, the growing need for information professionals to address a "posttruth era" (Baer, 2018; Cooke, 2018; Lewandowsky, 2019; Lewandowsky et al., 2017) starkly

underlines that social information culture is far from homogenous. However, very few of the researchers examining the information behaviors of such cultures have discussed in depth just how information professionals attempting to work with these SICs (but who are not themselves part of the SIC) can develop an understanding of how to approach them. One approach to understanding the information behaviors of such cultures—after recognizing them as cultures—is to develop a nuanced cultural competency.

Cultural competence is an important framework within the fields of library and information studies (LIS) (Cooke, 2017), although authors have criticized the lack of critical awareness and theoretical rigor around the term (Blackburn, 2020). Broadly defined as the ability to interact respectfully with people from other cultures, and sometimes framed in terms of "cultural humility" (Hodge, 2019; Hodge & Mowdood, 2016; Hurley et al., 2019), cultural competence is partially developed by understanding the intersectional nature of identity, and how our identities variously privilege or oppress us within the systems of power of a culture (Blackburn, 2020; Montiel-Overall, 2009). In particular, an understanding of such cultural hierarchies and beliefs may be facilitated by analyzing both the dominant cultural narratives and counternarratives within the culture (Cooke, 2017). Accordingly, developing a nuanced cultural competence for a specific culture requires significant time and critical reflection, usually including developing a meaningful relationship with the culture/community (Cooke, 2017).

Intellectual empathy is one tool that information professionals may use while developing cultural competence (Hollister et al., 2020). Intellectual empathy asks us to consider how the affective and cognitive factors that comprise social identity interact to affect reasoning and belief (Baer, 2018, 2019; Linker, 2011, 2015). The five skills essential for intellectual empathy are: "[U]nderstanding the invisibility of privilege; knowing that social identity is intersectional; using the model of cooperative reasoning; applying the principal of conditional trust; [and] recognizing our mutual vulnerability" (Linker, 2015, p. 14). Along with these five skills, we may use the "web of belief" model (van Orman Quine, 1975) to understand how beliefs exist in relation to their importance to identity; as people adopt some beliefs into the core of their identities, those beliefs become highly resistant to change, even in the face of overwhelming counter-evidence. Developing an understanding of what beliefs people have adopted as core to their identities, and why they have so internalized those beliefs over others, can provide part of the blueprint to build a bridge of intercultural understanding successfully.

Accordingly, we propose that Social Information Cultural Competence (SICC) is the ability to respectfully interact with people from different SICs formed through a deeper relationship with the community, an understanding of the privileges and oppressions resulting from the intersectional nature of identity, and intellectual empathy. Additionally, a foundational aspect of SICC is the expectation both to analyze dominant cultural narratives of an SIC, and to make space for counternarratives.

Social informatics and SICC

While the application of cultural competence is an important framework of practice and instruction within the field of LIS more broadly, the framework is not frequently applied to research in the area of SI. Yet SI shares several relevant principles with cultural competence, including encouraging careful attention to the details of practice and identity as they are enacted within a specific context.

An integral part of the SICC approach, SI "emphasizes the core relationships among people, ICT, and organizational and social life from perspectives that integrate aspects of social theory" (Fichman & Rosenbaum, 2014, p. xviii). Through close examination of these relationships, "the invisible can be made visible and its hidden assumptions brought to light for careful critical examination" (Fichman & Rosenbaum, 2014, p. xviii). This ability is incredibly important for developing SICC for a specific SIC. SI has also discussed the importance of looking at cultural norms, such as around interactions with intellectual property through ICTs (Eschenfelder, 2014).

The field of SI is not only well-attuned to examining closely both the sociocultural and technical details of how an SIC engages with ICTs, but is also useful for considering "embodied, culturally situated knowledge" performed by users of specific ICTs (Simons et al., 2020, p. 183). The significance of sociocultural context is a core principle of SI (Goggins & Mascaro, 2013; Sawyer & Tapia, 2007), wherein "the situated nature and uses of computing means that context and use are bound up through practice" (Sawyer & Tapia, 2007, p. 274). Moreover, SI emphasizes that, because "the design, implementation, and uses of ICT have reciprocal relationships with the larger social context", we cannot ignore the larger societal consequences of "the differential effects of the design, implementation, and uses of ICTs" (Sawyer & Tapia, 2007, p. 274).

SICC is particularly informed by previous SI theory examining the practices of knowledge sharing in online communities (Hara & Fichman, 2014). Much like the concept of SICs, Hara and Fichman (2014) similarly emphasize the need to examine the practices of communities outside of traditional organizations. Similar in some ways to the idea of using boundary objects or boundary spanners (Hara & Fichman, 2014), SICC provides a perhaps more contextualized approach for communicating and understanding information behaviors between those who may not fully share SIC memberships. In recent years, the rise of "posttruth" conceptualizations of information have only increased the importance for SI to consider such frameworks of knowledge sharing.

Integrating an SICC approach into the field of SI accordingly has potential impacts for both research and practice in a number of areas. In our case study within this chapter, we show both how SICs can be analyzed as a sociotechnical subject of study by SI researchers, and how SICC can

guide the direct practice of information professionals engaging in information literacy interventions with a particular SIC.

SICC-informed information literacy interventions

Although the field of IL has historically focused on developing skills focused on traditional methods of reading (i.e., books and other authoritative written documents), some authors have argued that IL must adopt a sociotechnical approach to theory and practice, as well as integrating social context into IL education and practice (Tuominen et al., 2005). While research in the areas of digital literacy, ICT literacy, information literacy, and media literacy frequently overlap among many different disciplines when considering ICTs (Park et al., 2020), the field of LIS has a particular interest in addressing the topic through community instruction led by information institutions (Lloyd, 2010). Accordingly, the field of LIS has traditionally discussed IL as "more of a practical and strategic concept used by librarians and information specialists" that should be implemented through direct education practice or curriculum development (Tuominen et al., 2005, p. 330).

In particular, social media literacy (or competence) has become a priority for such efforts (Zhu et al., 2021). The focus on social media within the field of IL has increased rapidly over the past ten years, especially because of rising public concern about the increasing spread of "fake news" and misinformation through these ICTs (Jaeger & Taylor, 2021). In response to these growing concerns, researchers have called for IL interventions for addressing misinformation on social media (Rubin, 2019). Rubin (2019), for example, has proposed a sociocultural and sociotechnical framework for IL interventions, which follows the epidemiological disease triangle model and focuses on causal factors, virulent pathogens, and susceptible hosts. Rubin asserts that automated interventions should only "assist (but not replace) human judgments" and "require further in-depth understanding of the phenomenon and interdisciplinary collaboration" (2019, p. 1013).

The SICC framework is well-suited to build on previous IL theory and research, while better informing such attempts to address misinformation through interventions with specific SICs (which necessarily include ICTs). Currently, only some IL approaches focus on sociocultural factors as a critical aspect of tailoring literacy development and instruction (Budd & Lloyd, 2014) or integrate a cultural competency/humility framework (Cobus, 2008; Hodge & Mowdood, 2016; Montiel-Overall, 2007). While researchers have looked at the relationship between IL and social capital (Widén et al., 2021), and how social structures outside of the control of individuals can impact the development of IL skills (Lin, 2010), IL frameworks continue to struggle between a desire to highlight individual agency by promoting "the knowledge and skills to battle the complexity of

the modern information world", and the tendency to frame individuals through a "deficit perception" of their current agency and perceived lack of appropriate literacies (Hicks & Lloyd, 2020, p. 363). Despite making great progress, IL interventions generally fail to account for the full complexity of the context of information behaviors. Instead, IL interventions need to recognize that "knowledge is not located in texts as such—or in the individual's head", and focus on the "co-construction of situated meanings and takes place in networks of actors and artifacts" (Tuominen et al., 2005, p. 338).

An SICC-informed approach aims to honor the focus on agency and skill development that is central to most IL interventions within the field of LIS. An important part of this process is an emphasis on critical reflective practice (Corrall, 2017) for everyone involved in the intervention. At the same time, an SICC-informed approach shifts the primary focus from the individual to an SIC—thereby allowing for an information professional to better understand the sociocultural and sociotechnical context of that group, before engaging them directly in an intervention. Developing SICC for an IL intervention necessarily requires developing a relationship with the SIC and approaching this relationship with intellectual empathy.

Finally, we again emphasize the importance for an SICC-informed IL intervention to understand and address the significance of cultural narratives within an SIC. As information professionals attempt to grapple with the role of "posttruth" and misinformation, they must address the important role of narrative in creating a sense of meaning and belonging in relation to misinformation (Bessi et al., 2015; Bessi et al., 2015; Dahlstrom, 2021). Researchers looking at the problem of misinformation on social media have discussed the power of conspiracy narratives, for example, as being "a combination of disinformation, misinformation, and rumour that are especially effective in drawing people to believe in post-factual claims and form disinformed social movements" (Darius & Urquhart, 2021, p. 1). In fact, some research indicates that ignoring the relevant narrative during an intervention may have a "backfire effect" that causes members of an SIC to become even more invested in misinformation (Zollo, 2019, p. 1). However, it is worth noting that counterstories can exist even alongside these dominant narratives of misinformation within an SIC (Goldstein, 2018).

We therefore propose that such SICs that become organized around cultural narratives of misinformation may be called "misinformation SICs". These SICs require a careful SICC approach to IL intervention, lest the intervention support the very misinformation it is trying to address. In the rest of this chapter, we develop a specific case study, in order to illustrate both the SICC framework and how it might improve IL interventions with a misinformation SIC.

Case Study: Information Literacy Campaigns Addressing COVID-19 Misinformation on Social Media

In this section, we will use a specific case study on current approaches to addressing the rapid spread of misinformation related to the COVID-19 pandemic through social media. We first discuss the specific context of the COVID-19 misinformation SIC, including developing an understanding of this SIC as a culture, and illuminating some important technical features of social media platforms on which this SIC draws. We then discuss some current frameworks for approaching IL interventions with this SIC. We conclude by discussing three examples of IL interventions and comparing these approaches to the SICC framework.

Background

As the COVID-19 pandemic continues throughout the world, access to accurate and timely information remains a high priority for individuals and global society. Throughout the pandemic, a significant number of people across cultures and demographics have and are searching for, engaging with, and sharing information about the COVID-19 pandemic, specifically through social media platforms (Banerjee & Meena, 2021; Neely et al., 2021). Accordingly, the quick spread of accurate health information over social media can be useful for sharing important and even life-saving information (Venegas-Vera et al., 2020).

Unfortunately, an alarming amount of the information about COVID-19 and the pandemic that is being circulated is "disinformation", "misinformation", "false rumor", or "conspiracy theories" (Cinelli et al., 2020; Islam et al., 2021; Kouzy et al., 2020).[1] In addition to coverage of these topics in several previously established fields of research (Pool et al., 2021), the field of "infodemiology" has rapidly developed after the World Health Organization popularized the term "infodemic" (Purnat et al., 2021; Zielinski, 2021). While not all information contained in the COVID-19 infodemic is inaccurate, the prevalence of inaccurate information can make it even more difficult for individuals to access or assess the accurate information (Calleja et al., 2021). Even a well-intentioned rush to share academic knowledge about the COVID-19 pandemic has led to a boom of preprint articles, including many that have been later retracted or revised (Fraser et al., 2021; Tentolouris et al., 2021). At least one systematic review identified "social media usage, [a] low level of health/eHealth literacy, and [the] fast publication process and preprint service" to be "the major causes" of our current COVID-19 infodemic (Pian et al., 2021, p. 1).

Researchers are alarmed at both the rapid spread and sheer quantity of misinformation being shared over social media (N. Ahmed et al., 2020; Banerjee & Meena, 2021; Bin Naeem et al., 2021). One recent study found, for example, that roughly 25% of tweets with COVID-19 health

information contained inaccurate information (Swetland et al., 2021). What makes this particular kind of dis/misinformation especially concerning is the seriousness of the consequences for not only those individuals who engage with this dis/misinformation (Barua et al., 2020; De Coninck et al., 2021; Pian et al., 2021), but also for those in the same physical communities who do not actively engage with this misinformation (Calleja et al., 2021; Hornik et al., 2021).

Understanding COVID-19 misinformation networks as social information cultures

In order to address effectively the negative impacts of COVID-19 dis/misinformation spread through social media, we must first better understand who is sharing this content, how and where networks of sharing develop, and—perhaps most importantly—why individuals engage with COVID-19 dis/misinformation content and choose to share it with others in their social networks. Previous research on "fake news" and dis/misinformation has identified several different psychosocial factors for why individuals engage with and share this content on social media, including a lack of deliberation in evaluating the content (Bago et al., 2020), a reliance on emotion (Martel et al., 2020), a "laziness" in utilizing analytic thinking (Pennycook & Rand, 2019, p. 2521), and using heuristics of familiarity when encountering information, without a depth of personal knowledge on the topic (Pennycook & Rand, 2021).

While the research on COVID-19 dis/misinformation engagement and sharing on social media is still (rapidly) developing, there is compelling evidence that a cultural model is an appropriate approach for understanding this information behavior (Rampersad & Althiyabi, 2020). Similar to previous examinations of groups such as the "antivax" or "vaccine hesitant" communities on social media (Koltai, 2020a, 2020b; Wawrzuta et al., 2021), preliminary research indicates that people who go beyond simply reading and decide to share COVID-19 "fake news" or dis/misinformation, do so for complex sociocultural reasons. While individual differences may predict a particular user's likelihood of sharing certain kinds of COVID-19 misinformation, such as conspiracy theories (Lobato et al., 2020), research has found that the general motivation for sharing COVID-19 dis/misinformation is greatly determined by tie strength to others in the sharing network (Apuke & Omar, 2020), along with a value of altruism (Apuke & Omar, 2021). These shared beliefs may lead social media users into closed networks of COVID-19 dis/misinformation that further their ties to the group through "echo chambers" that promote "confirmation bias" (Modgil et al., 2021).

In short, an individual's reasoning for whether or not to share COVID-19 misinformation goes beyond individual psychological factors, and is influenced by their connections to others with similar beliefs and values.

These connections form a unique SIC that is both mediated by and reflected in the use of social media. There are indications that content sharing networks are not necessarily bound by the same traditional geographical, national, or demographic divisions as traditional cultures. Within boundaries such as the United States, for example, COVID-19 dis/misinformation is spreading across traditional racial, socioeconomic, and gender lines (Collins-Dexter, 2020; Ross, 2020). Or at least, dis/misinformation narratives can be taken and repurposed for different groups, so that "concepts similar enough to pass as first cousins on the misinformation family tree have proliferated in social media spaces that do not usually cross or blend" (Ross, 2020, para. 5).

This COVID-19 misinformation SIC represents a culture that is unique to and shaped by the specific context of COVID-19, while also drawing on preexisting SICs such as the "alternative medicine community" (Soveri et al., 2021) and "antivax" or "vaccine hesitant community" (Koltai, 2020b). For example, dedicated sharers of COVID-19 dis/misinformation have begun employing shared "secret codes" and alternative words to get around bans on misinformation designed by social media platforms—a tactic that is particularly well-documented among the previously existing "antivax" SIC (Collins & Zadrozny, 2021). This shared language not only provides the SIC with a valuable tool for using social media platforms on their own terms, but also solidifies their shared sense of group identity as a culture.

Members of the COVID-19 dis/misinformation SIC accordingly draw on these overlapping SICs to learn both social media tactics (Kalichman et al., 2021), and how to frame compelling narratives rhetorically (Martin & Vanderslott, 2021), both of which are key aspects for the SIC to grow and flourish. Research indicates that, while antivaccine cultural narratives on social media have tended to coalesce around a few prevalent themes such as freedom of choice and harm prevention from vaccine-related injuries (Wawrzuta et al., 2021), antivaccine narratives are increasingly able to incorporate more diversity and flexibility, and thus to draw in individuals with more diverse interests (Johnson et al., 2020). Furthermore, antivaccine content is better able to present and use rhetorical message framings that are known to be persuasive and engaging, while provaccine content on social media may not use such compelling rhetoric (Argyris et al., 2021).

This greater cohesion of narrative and rhetorical framing on one side of the debate may be explained by the fact that people who engage with provaccine content on social media do not necessarily consider themselves to be part of a "provaccine" social group, and do not perceive their information behaviors to be within the context of such an SIC. For example, there are far fewer "provaccine" groups on Facebook than "antivaccine" or "vaccine hesitant" groups; on average, antivaccine groups not only create more content but also stay active for a longer period of time than provaccine groups (Kim & Kim, 2021). Previous research has shown that antivaccine

groups on platforms such as Facebook foster a sense of community and belonging among members, and form "network ties due to homophily through values", with those values being consistent between different groups (Koltai, 2020b, p. 3). These connections indicate a larger sense of culture that goes beyond specific groups or content. At least one study has shown that any two local clusters of antivaccine groups on Facebook (e.g., within two US states) are "typically interconnected through an ether of global clusters and so feel part of both a local and global campaign" (Johnson et al., 2020, p. 231).

As this SIC continues to coalesce, it produces a feedback loop that amplifies its own presence. With many of their normal cognitive and social structures disrupted by the pandemic, individuals look for alternative sociocultural structures on social media, and may find a compelling one in the COVID-19 misinformation SIC. As they become socialized into this SIC, they begin acting in the "real" world based on these cultural beliefs, and sharing the results of their actions back on social media—which then amplifies the cultural narratives even more and draws greater attention (and new members) to the SIC (Dow et al., 2021). Significantly, the Center for Countering Digital Hate (CCDH) claims that a number of "leading antivaxxers" met secretly in person in October 2020 to share their approaches to using social media and—among other goals—to coordinate around a "master narrative" (CCDH, 2020, p. 4).

Relevant technical features and understanding the role of platforms

As the CCDH additionally points out (CCDH, 2020), antivax leaders and average sharers must successfully leverage the technical features of social media platforms to propagate cultural narratives effectively. It is worth noting, however, that even the broad use of the term "social media" may erase important distinctions in how the affordances of each specific platform interact with the information behaviors of an SIC. For example, "echo chambers" may look and function very differently on different social media platforms, based on the features of those platforms (Cinelli et al., 2021). The use of private groups, the inability for users to curate highly their own "feed" of posts shared by "friends", and other sharing features, may create more highly segregated "homophilic clusters" on Facebook than on a platform such as Reddit (Cinelli et al., 2021).

At the same time, social media users are capable of translating dis/misinformation narratives successfully across platforms and adapting to leveraging the different affordances of these platforms. For example, the organization First Draft has a number of guides and "recipes" to help researchers and journalists understand the spread of specific dis/misinformation across different platforms (First Draft, 2022). The guide to "tracking the cross-platform spread of harmful and misleading narratives" asserts that "misinformation and conspiracy theories are not static" and

"move from one platform to another, often promulgated by organized online communities that seed this information across the web" (Smith & De Keulenaar, 2021, para. 1). One example of a particularly contagious piece of disinformation is the Plandemic "documentary", which continued to be shared across multiple platforms, even as individual platforms attempted to ban the video and discussion (Graham, 2020).

Several researchers studying the spread of COVID-19 dis/misinformation on social media have urged that attempts to address this problem must consider the deliberate use of "media manipulation" on these platforms by conscious actors (Donovan et al., 2021; Nazar & Pieters, 2021). Donovan et al. (2021) argue that not only is such "media manipulation" an understudied aspect of the COVID-19 infodemic, but also that it is specifically "a sociotechnical process, whereby motivated actors leverage conditions or features within an information ecosystem to […] advance their agenda" (p. 6). Their advice "is designed to work within any cultural context", is "fluid", and relies on "the method of research known as investigative digital ethnography, which takes into account the differences in geography, culture, language, law, and demographic diversity, so that these recommendations can be tailored to specific environments as per the needs of the locale and situation" (Donovan et al., 2021, pp. 4–5). Notably, they also identify the sharing of specific narratives as an important component of the "seeding" of a dis/misinformation campaign through social media (Donovan et al., 2021, p. 20).

Donovan et al. discuss several specific features of the use of social media to distribute narratives, including attempting to dominate conversations on specific platforms "where they believe they can reach a target audience", for example, by identifying specific Facebook pages, or engaging with a particular Twitter hashtag (2021, p. 20). The CCDH has identified similar tactics around the spread of dis/misinformation, with the goal of advancing narratives, as well the use of social media deliberately to create spaces for confused or uncertain individuals to receive misinformation under the guise of getting "answers", including misleadingly named Facebook groups and misleading hashtags on Instagram and Twitter (CCDH, 2020, p. 10). By achieving a "critical mass in conversation that will lead to a campaign['s] becoming newsworthy or result in a false perception of massive public concern", seeded dis/misinformation ultimately lends authority to narratives that become increasingly compelling (Donovan et al., 2021, p. 20). Once "a particular piece of disinformation has spread beyond a core group of media manipulation campaign operators, resulting in trending topics on social media, uptake by influential social media accounts, and coverage by fringe websites with little or no editorial oversight", this dis/misinformation has been successfully integrated into wider discussions on social media beyond the initial group doing the "seeding" (Donovan et al., 2021, p. 20). These narratives may then engage both core members of the SIC and other users of social media.

Significantly, some researchers have argued that the solution to such deliberate manipulation of the specific affordances of social media platforms is not simply to increase technical or digital literacy for all people who may interact with dis/misinformation narratives. For example, Sirlin et al.'s (2021) study of social media users who were presented with a set of true and false news posts, found significant differences in the factors associated with believing false posts versus sharing false posts. While this study supports previous research associating lower digital literacy with "less ability to tell truth from falsehood", it simultaneously contradicts the prevalent belief that this same relationship explains sharing behaviors around dis/misinformation (Sirlin et al., 2021, p. 3). In fact, the authors argue that "the pattern is strikingly different" for sharing intentions, whereby "[no] digital literacy measure is consistently associated with sharing discernment—the tendency to share true news more than false news—nor are they significantly associated with the fraction of headlines the subject shared that are true (an alternative metric of information sharing quality)". Sirlin and colleagues also noted that "analytic thinking is also not significantly associated with either sharing quality measure" (Sirlin et al., 2021, p. 3).

Researchers, politicians, and concerned users have all called for greater transparency from social media platforms (Donovan et al., 2021), and for these companies to take greater responsibility for the spread of COVID-19 dis/misinformation (CCDH, 2021; B. Klein et al., 2021). Over the past year and a half, several platforms have made efforts to control this aspect of the infodemic, primarily by banning certain misinformation (Stelter & Pellico, 2021), and occasionally by banning the accounts of well-known "super-spreaders" (De Vynck, 2021; Pietsch, 2021). However, these efforts have been criticized as still lacking transparency or unity across platforms (Krishnan et al., 2021).

Such platform-driven efforts have had only limited success in controlling either the spread of dis/misinformation narratives or the growth of the COVID-19 misinformation SIC (N. Ahmed et al., 2020; De Vynck & Lerman, 2021). As evidenced by the Plandemic video (Graham, 2020) and other narratives, such as the "#FilmYourHospital" conspiracy (W. Ahmed 2020), specific narratives may easily circumvent moderation by any one platform (Cruickshank et al., 2021). To get around bans of specific links known to contain misinformation, users may develop workarounds such as using the WayBack Machine digital archive to point to links of since-removed (or debunked) articles that are now banned on platforms (Donovan, 2020). Posts may also use "co-tagging" with multiple hashtags to circumvent bans on specific misinformation-related hashtags (Quinn et al., 2021). Automatic flagging on platforms like Twitter has had mixed results and may even backfire, as members of such misinformation SICs may be influenced by narratives alleging that these efforts are "political" attempts to control them, and become even more firm

in their beliefs (Lanius et al., 2021). Notably, many of these moderation approaches are largely automated. While automated moderation does show some promise, it still struggles to follow both the role of psycho-social factors and the way that SICs continue to amend and adapt narratives across platforms—especially as misinformation narratives evolve and change over time (Gerts et al., 2021).

Accordingly, we argue that there is still a significant need for information professionals to intervene and to address the spread of harmful dis/misinformation on social media platforms, especially within the dedicated COVID-19 dis/misinformation SIC.

COVID-19 misinformation IL interventions

Because of their long history with similar IL efforts, and their sophisticated understanding of "information", information professionals are not only well-suited to these interventions, but also should feel obligated to intervene. Bin Naeem and Bhatti (2020), for example, refer to the current COVID-19 infodemic as a "new front for information professionals" and document existing guides that librarians have assembled to combat misinformation (p. 233).

Researchers and platforms have tried several approaches to ban or otherwise label COVID-19 dis/misinformation content on social media, including fact-checking (Roitero et al., 2021) and de-bunking (Wang et al., 2021) strategies. As mentioned above, many of these approaches are automated. However, most such attempts to control dis/misinformation content do not really attempt to improve the IL within the COVID-19 dis/misinformation SIC. Instead, such approaches focused on limiting the spread of the content itself, and therefore do not really correspond to IL frameworks in LIS, which focus on developing the agency and skills of users. Accordingly, researchers have argued that interventions need to go beyond "fact-checking" approaches (Burel et al., 2021; Chou et al., 2021; Shahi et al., 2021) to developing long-term eHealth and science literacy (Eysenbach, 2020). Yet these literacy interventions are still framed in terms of individual users, rather than the SIC as a whole.

Of the approaches aimed at individual users, many COVID-19 dis/misinformation interventions are framed as media (Melki et al., 2021; Su et al., 2022) or communication literacy (Mheidly & Fares, 2020) approaches. Some may be called health literacy (Bin Naeem & Kamel Boulos, 2021; Silva & Santos, 2021) or digital health literacy (Dadaczynski et al., 2021; Nguyen et al., 2021; Patil et al., 2021; Vrdelja et al., 2021) interventions. Others have focused on proactively increasing trust in science (Agley et al., 2020; Agley & Xiao, 2021), including by using infographics (Crutcher & Seidler, 2021; Rotolo et al., 2021). Despite the differences in names, nearly all of these approaches share an interest in trying to automate the intervention and to scale it up in order to reach as many people as possible.

Next, we analyze three specific types of intervention efforts that have recently been gaining significant research and media coverage in more detail. In our analysis, we discuss both similarities with our proposed SICC framework, and where possible gaps in these approaches might be better addressed by incorporating an SICC approach. To develop our analysis, we have closely read these processes (Feinberg, 2012) through online documentation, research articles, and interviews that discuss these approaches. Our analysis is also informed by the approach of Critical Technocultural Discourse Analysis (CTDA), which "applies critical cultural and, importantly, technocultural theories to ICT artifacts" (Sweeney & Brock, 2014, p. 3). We discuss these specific intervention approaches merely as examples, not as a comprehensive review of all approaches.

Inoculation or prebunking

A growing body of research indicates that approaches focusing on fact-checking or de-bunking dis/misinformation that has already been extensively shared on social media are not particularly effective in changing the minds of users who have already been exposed. Even a single exposure may form an "illusory truth effect" that is hard to combat (Pennycook et al., 2018, p. 1865). Additionally, debunks "don't reach as many people as misinformation, and they don't spread nearly as quickly" (Garcia & Shane, 2021, para. 3). "Inoculation" or "prebunking" efforts therefore attempt to catch users at (or before) the first time they encounter a new piece of dis/misinformation (Lewandowsky & van der Linden, 2021). In a guide developed for First Draft, Garcia and Shane (2021) list three main types of prebunking efforts: fact-based (focused on correcting a specific false claim or narrative), logic-based (focused on explaining tactics used to manipulate), or source-based (pointing out bad sources of information). While the approach can be used for different types of dis/misinformation, the guide particularly emphasizes COVID-19 dis/misinformation.

Focusing primarily on a combination of "fact" and "logic" based approaches, First Draft offers a guide to designing prebunking efforts. Notably, the first step is to "figure out what information people need"; the authors encourage those designing an intervention to "anticipate [their] audience's questions" by not assuming "that [their] questions are the same as [their] audience's" (Garcia & Shane, 2021, sec. What to prebunk). The authors encourage the use of "tools such as Google Trends to figure out trending questions or issues", as well as "[checking] in with community figures and [thinking] about creating a space where people can submit their questions" (Garcia & Shane, 2021, sec. What to prebunk). This step involves asking questions such as "What preexisting narratives might bad actors exploit?" and "How can you help people identify these tactics and narratives so that they are less likely to fall for them?" (Garcia & Shane, 2021, sec. What to prebunk).

The tenth (and final) step is "Find where your audience is and publish there", in which "successful prebunks will join and be integrated in online spaces and platforms where your audience is already spending time" (Garcia & Shane, 2021, sec. How and where to share). Those designing interventions are encouraged to "use social listening and monitoring tools to figure out the digital spaces where "the party" is happening and join in", after "[reading] the room before [jumping] into the conversation" (Garcia & Shane, 2021, sec. How and where to share). This final step involves "[thinking] about the culture of the specific online space or platform you have identified" by asking questions such as "What are the trends or styles that people use to communicate?" and "How can you use those in a way that effectively communicates the information you want people to have?" (Garcia & Shane, 2021, sec. How and where to share).

This approach to addressing dis/misinformation is mostly in line with a true IL approach, as it aims to develop the agency and skills of individuals by teaching them to "be better equipped to spot it and question it" (Garcia & Shane, 2021, sec. The basics). The process described here includes several other qualities that are integral to the SICC framework, most notably a nascent understanding of the importance of targeting prebunking efforts at communities that have their own "cultures". Focusing on listening and understanding existing narratives are also key components of developing cultural competency/humility for a specific SIC.

Integrating the SICC framework into this prebunking process would encourage intervention designers to think more deeply in a few key areas. In particular, the SICC framework would encourage a deeper approach to understanding the target SIC, beyond using more shallow tools such as Google Trends. In particular, developing a better understanding of why members of the SIC value and share certain narratives would further deepen the approach to supporting members' ability to spot and question these narratives—as well as to evaluate more critically their membership in the SIC as a whole. Teaching intervention designers more clearly how to engage in the process of developing cultural competency/humility, such as how to employ an "investigative digital ethnography" (Donovan et al., 2021, p. 4), would be particularly helpful.

Finally, while preventative dis/misinformation IL interventions are a great approach in theory, it is worth considering how cultural competency should be applied to understanding who is likely to participate in such interventions. It seems unlikely that core or deeply invested members of the COVID-19 dis/misinformation SIC would be eager to approach such interventions without a preexisting value for spotting and questioning dis/misinformation—which seems especially unlikely given the values of this SIC. Accordingly, a pre-prebunking effort might be necessary just to build trust with the SIC and to entice such members to participate in the intervention. As the primary tool for engaging individuals in these interventions is often automated games that are aimed at reaching as many

people in a general population as possible (e.g., DROG, 2022; Social Decision-Making Lab, 2022; Warner, 2022), it may be difficult to build this kind of pretrust through a relationship specifically with the SIC.

Accuracy prompts

Based on prior research that indicates a boost in critical thinking reduces "inattentive" sharing of fake news and misinformation, the intervention approach of "accuracy reminders" (also called prompts or nudges) aims to encourage social media users to evaluate COVID-19 dis/misinformation more closely before sharing it (Pennycook et al., 2020, p. 777). Pennycook et al. (2020) argue that this approach is effective for fighting COVID-19 dis/misinformation because "people generally wish to avoid spreading misinformation and, in fact, are often able to tell truth from falsehood; however, they nonetheless share false and misleading content because the social media context focuses their attention on factors other than accuracy" (p. 771). Accordingly, the approach focuses on applying "subtle nudges" to make the "concept of accuracy more salient" in users' minds as they interact with social media content. Several researchers in this area believe that this approach can be widely applied, because the analytical thinking mechanism can work independently from users' "political ideology" or personal background (Pennycook & Rand, 2019, p. 39).

In particular, recent research by Epstein et al. (2021) examined several different accuracy prompt interventions, using survey experiments with US social media users "quota-matched to the national distribution on age, gender, ethnicity, and geographic region" (p. 2). As with previous studies, this study focused primarily on judging the content of headlines (some with misinformation and some with accurate information), and asking participants about their sharing intentions. The authors found that the most effective intervention into reducing participants' stated intention to share false headlines incorporated a multistep approach before asking them about their sharing intentions for the specific headlines of the study: "(i) asking participants to judge the accuracy of a non-COVID-19 related headline, (ii) providing minimal digital literacy tips, (iii) asking participants how important it was to them to share only accurate news, [...] (iv) asking participants to judge the accuracy of a series of [four] non-COVID-19–related headlines (and providing corrective feedback on their responses), [and] (v) informing participants that other people thought it was important to share only accurate news (providing "descriptive norm" information)" (Epstein et al., 2021, p. 3).

The authors argue that certain forms of this multistep accuracy prompt intervention are "particularly appealing" because of the following factors: the approach does not "require technology companies to decide (e.g., via machine learning or human moderators) what is true versus false"; the approach allows users to "exercise [their] desire to avoid sharing inaccurate

content, preserving user autonomy"; and because "accuracy prompts are scalable (unlike, for example, professional fact-checking, which is typically slow and only covers a small fraction of all news content)" (Epstein et al., 2021, p. 2). They additionally argue that "gender, race, partisanship, and concern about COVID-19 did not moderate effectiveness, suggesting that the accuracy prompts will be effective for a wide range of demographic subgroups" (p. 2). Yet the authors do conclude that "the prompts were more effective for participants who were more attentive, reflective, engaged with COVID-related news, concerned about accuracy, college-educated, and middle-aged" (Epstein et al., 2021, p. 2). Finally, they do indicate some areas for future research, including assessing "how long the effects last" and understanding how their results "would generalize cross-culturally" (Epstein et al., 2021, p. 3).

Again, there are several aspects of this approach that could work well in an SICC-informed IL intervention. In particular, the SICC framework is roughly in line with the authors' emphasis on including a complex approach that incorporates both digital literacy skills and a connection to psychosocial factors of belonging (such as discussing values of the user and of others they may consider to be in their "community"). Additionally, the approach specifically values "user autonomy" (Epstein et al., 2021, p. 2) and users' ability to develop and use their own judgement and IL skills.

At the same time, the SICC framework would indicate some potential gaps in this approach. First, this is (again) a very individual-centered approach that explicitly aims to be generally effective across demographics, cultures, and groups (rather than working with a specific SIC and building a relationship). However, it is worth noting that even the authors indicated that the results were most effective for participants with certain characteristics (namely: attentive, reflective, engaged with COVID-related news, concerned about accuracy, college-educated, and middle-aged) and that "the effect was also stronger among people who placed greater importance on sharing only accurate news, consistent with the idea that shifting attention to accuracy should increase sharing discernment only insofar as the user actually cares about accuracy" (Epstein et al., 2021, p. 3). The SICC framework would suggest that some additional investigation and building of cultural competency is likely necessary to understand fully if this set of "characteristics" and "values" indicates the presence of a distinct SIC(s) with whom this approach will particularly resonate, and if there are other SICs for whom the approach does not work. While the authors briefly address the limitation of generalizing across cultures, they likely mean the more traditional sense of geographic/national or ethnic/racial cultures.

Additionally, there is little nuance in the approach toward understanding how a "preference for accuracy" may be balanced with other psychosocial factors of belonging and belief, including other values of the SIC. Adopting the SICC framework could potentially help information professionals looking to use this approach to target certain cultural values better and

make them even more salient, by more fully understanding the relationships of other values and the cultural narratives of the SIC. Why and when do certain "foci" become more "salient" for members of the COVID-19 dis/misinformation SIC? For example, are all headlines and topics equally culturally important to the SIC? Are headlines even of primary interest to members of this SIC when they make sharing decisions?

Finally, as with many current COVID-19 misinformation IL approaches, this approach particularly emphasizes scalability and generalizability. This is certainly an understandable goal, and the approach may indeed work well for the majority of social media users who casually interact with COVID-19 dis/misinformation. While researchers have proposed integrating this approach into social media platforms, the platforms have not yet adopted this intervention. Like with the prebunking approach, the current primary mechanism for this type of intervention is the use of online "training" games (e.g., Social Decision-Making Lab, 2022). Similar to the prebunking approach, however, it may be necessary to develop a longer-term relationship directly with the COVID-19 dis/misinformation SIC, in order to encourage members of the SIC actually to engage with this intervention.

Conversation groups

In contrast to more large-scale and automatable interventions, several grassroots "conversation group" approaches have developed, that encourage a more interpersonal and human-focused framework for addressing COVID-19 dis/misinformation. Among these, arguably the most successful is the grassroots effort "Vaccine Talk". Vaccine Talk focuses on engaging with individual users on social media platforms—especially the vaccine "skeptical" and those with vaccine skeptics in their personal lives. While not focused exclusively on the COVID-19 vaccine, the group has been greatly focused on discussing this particular vaccine within the context of the pandemic (Dwoskin et al., 2021).

Although members may venture out into other social media platforms such as the Reddit discussion forum (Dwoskin et al., 2021), the movement's main home is a private Facebook group (meaning that users must request and be given access by a group moderator), with almost 79,000 current members (Vaccine Talk, 2022). The group describes itself as a "group for vaccine debate and discussion" where "PV [Pro-Vaccine], AV [Anti-Vaccine], and undecided are all welcome" (para. 1). The group has ten stated rules, including: "No misrepresentation and no medical advice"; "No doxing or harassment, civility is required"; "Please provide evidence when asked for it"; and "Please include a discussion or debate topic" (Vaccine Talk, 2022, sec. Group rules from the admins). As of August 2021, the group had twenty-five moderators/administrators who represented six different countries (Dwoskin et al., 2021) and were collectively available 24 hours a day (Simon, 2021).

In interviews, one of the group's co-founders (Kate Bilowitz) stresses that the group is moderated "by real people" (para. 5) who "want to get people out of their echo chambers and start talking to each other" (Simon, 2021, para. 6). Bilowitz describes "the process to engage somebody who is concerned about vaccines" as beginning with "[encouraging] them to make a post in the group expressing what it is that they're concerned about, why they're feeling that way and what specific questions they have"; then the other group members are encouraged "to provide [the poster] with either evidence showing that, you know, what they're concerned about is not true or evidence showing that there's nothing to be concerned about" (Simon, 2021, para. 9). Not only do posters need to provide some kind of link to "evidence" within 24 hours upon the request of any single other group member, but they must also give "a little bit of commentary about it" in order to "[cut] down on spamming" (Simon, 2021, para. 10). Once "evidence" has been provided, "it's up to the members in the group to evaluate that source and tell the member who provided it why it's a good source or why it's a bad source" (Simon, 2021, para. 10). Bilowitz adds that this reflective engagement process with both the information and the other group members is "really educational for a lot of people who have maybe never been challenged in that way before" (Simon, 2021, para. 10).

Unlike the other interventions, which can quantitatively measure the amount of times that certain misinformation content is shared, or whether or not recipients of the intervention choose to share sampled misinformation, the outcome metrics of a conversation group like Vaccine Talk are more qualitative. The post-by-post approach focuses on each individual and their own "discussion or debate topic"; there is no external evaluation of the outcome of the conversation sparked by posts, of the objective truth of the claims made, or of the impact on the individuals involved. Yet, while the primary goal of the group is not necessarily to convert as many vaccine skeptics as possible, Bilowitz claims that the group administrators loosely monitor the sentiment of people who join the group (as "antivaccine or on the fence") and that they have documented over 400 cases of group members remarking that the group has changed their mind (Simon, 2021, para. 12).

The group deliberately uses different tactics than the automated approaches that social media platforms are using, focusing on fostering nuanced conversations instead of simply banning certain key words, topics, or sources (Dwoskin et al., 2021). In fact, Bilowitz expresses frustration that Facebook's tactics to control dis/misinformation frequently hinder the group's own efforts, saying that "the biggest challenge that we face right now is dealing with Facebook's content moderation" because "Facebook's algorithm can't understand the difference between something that's posted with the intention of spreading misinformation and something that's posted with the intention of debunking or critiquing it" (Simon, 2021, para. 12). Furthermore, Bilowitz argues that Facebook's "inconsistent" flagging makes it hard for the group to avoid complete (temporary) deactivation—an

occasional occurrence that "keeps [her] up at night [worrying] about what's going to happen to the group" (Simon, 2021, para. 11). She expresses a deep concern with the "banning" approach, saying, "Facebook is attempting to shut down misinformation by shutting down all conversation entirely, [but] I strongly believe that civil, evidence-based discussion works, and Facebook's policies make it extremely difficult for that to happen" (Dwoskin et al., 2021, para. 5). A critical part of making these discussions work, she emphasizes, is empathy for all of the members of the group: "Empathy is critical to this work. I don't think you could do this if you didn't care about people. I think all of our moderators and myself [care] very deeply about what we're doing" (Simon, 2021, para. 13). The goal of this "care" is to acknowledge realistically that the "conversation about vaccines" is not easily solved universally with a one-time intervention, and to "continue the group and to grow it to help get the correct information to people to help them feel confident in their decision to get vaccinated" (Simon, 2021, para. 13). Bilowitz adds that this approach to getting people to accept the COVID-19 vaccine is "how we're going to end this pandemic" (Simon, 2021, para. 13).

Although the Vaccine Talk group would not necessarily describe themselves as an "information literacy" intervention, this grassroots movement has several important features of the SICC IL approach. First, the organizers of the group have an explicit focus on intellectual empathy and on allowing members of the group to express their own values/beliefs and to be respectfully heard. Second, the organizers are invested in cultivating an environment in which members can productively cultivate their own evaluations and interpretations, rather than forcing an externally defined goal and understanding of the context. From its own description, the group is ostensibly not concerned either with determining an absolute truth or with defending a particular side in the debate. However, comments made by Bilowitz clearly indicate that the group's main purpose is to "get the correct information to people to help them feel confident in their decision to get vaccinated" (Simon, 2021, para. 13). Similarly, while a culturally competent or humble IL approach should be empathetic and respect participants' agency, information professionals do not necessarily have to adopt a "neutral" approach without specific desired outcomes—especially when dealing with SICs of misinformation. Finally, the organizers, while themselves not necessarily part of the antivaccine SIC, have taken (and continue to take) considerable time to engage with this SIC and to understand it.

There are also some aspects of this approach that do not completely line up with an SICC IL intervention. Most notably, the approach somewhat deliberately avoids placing posters' "discussion or debate topic" into full cultural context, and instead establishes a post-by-post or individual focus. While the group does leave some room for personal narrative and counternarratives, it still very heavily privileges—in fact, requires—the presence of "evidence" and labels itself as an "Evidence Based Discussion Forum".

However, the group does leave the validation and interpretation of what makes something definitively "evidence" up to each individual (which does, in turn, support the agency of members in developing their own critical thinking and information literacy skills). Finally, while this approach has some implications for integrating counternarratives, it does not do so explicitly; we may also question whether such a group will ever appeal to core members of the COVID-19 dis/misinformation SIC, or whether it can only appeal to less-engaged or tentative members.

Discussion: Suggestions for Treating a Viral Misinformation SIC

Our case study analysis supports previous work indicating that a focus on individual deficiencies in information literacy skills is not sufficient to explain why or how misinformation narratives become viral and are shared within an SIC (Sirlin et al., 2021)—and may even risk creating a "backfire effect" (Zollo, 2019). Accordingly, we propose that the SICC framework can guide information professionals in learning to understand information behaviors and social information cultural narratives in a sociotechnical context—without that full context, IL interventions with SICs are not likely to be as successful, particularly in the case of such viral misinformation cultures.

First, we argue that IL intervention efforts need to better understand who is most deeply engaging with dis/misinformation content on social media (i.e., the actual SIC members), versus focusing exclusively on the behaviors of non-SIC members who happen to be interacting with misinformation narratives. It is true that many people engaging in these narratives, while not actively members of the SIC, may be inadvertently supporting and raising the profile of these narratives. Yet while there is still value in interventions that prompt non-SIC members to think carefully about sharing misinformation, these users may not represent the most "viral" sharers. While more generalized prebunking and accuracy prompt interventions may be easier to scale, they will also likely be less effective at improving IL for the most core members of a misinformation SIC.

Accordingly, at least some IL interventions should be tailored to those who have become deeply invested in the specific cultural narratives of the dis/misinformation SIC. For example, one study found that individuals' belief in COVID-19 misinformation does not necessarily stem from a lack of trust in the narrative of scientific consensus, so much as a simultaneous support for other narratives (Agley & Xiao, 2021). This finding indicates that simply presenting these individuals with consensus-based scientific "fact" may not be as useful for changing a belief in misinformation, as making this narrative more compelling than other misinformation cultural narratives. Using an SICC framework helps information professionals to assess and address actual SIC members meaningfully.

Second, we argue that IL interventions need to understand better why the members of an SIC (especially a misinformation SIC) engage in certain information behaviors and are invested in certain cultural narratives. There is compelling evidence, for example, that people fall back on shared cultural values and narratives even more in times of crisis and informational uncertainty or overload. Darius and Urquhart argue that, during the COVID-19 pandemic, conspiracy narratives "provide a pseudo-epistemic background for disinformed social movements that allow for self-identification and cognitive certainty in a rapidly changing information environment" (2021, p. 1). The exponentially growing – and sometimes legitimately conflicting – information from official and academic sources about COVID-19 makes many individuals particularly reliant on trusting compelling narratives and voices (Purvis et al., 2021).

However, the goal of IL interventions should not simply be to purge an SIC of all cultural narratives: adopting an SICC approach includes recognizing that narratives are a key part of any culture, and that both narratives and counternarratives are an important tool to engage both individuals and the group. Previous research has shown, for example, that narrative approaches can be highly successful in delivering accurate COVID-19 health information tailored to diverse subgroups across social media (Gesser-Edelsburg, 2021; Ngai et al., 2020). Currently, the small body of research on using narratives in conjunction with health information on social media is focused more on subgroups or personas (e.g., Massey et al., 2021), and is primarily focused on conveying accurate information—as opposed to cultivating IL skill development through intervention with an SIC. We suggest that SICC IL approaches to COVID-19 dis/misinformation might consider building on such research by, for example, integrating personal and affective narratives from culturally competent health professionals. While some research has indicated that personal narratives from healthcare professionals is effective in promoting accurate COVID-19 information (Topf & Williams, 2021), these approaches are often still lacking specific cultural competency for the SICs they are targeting. Integrating celebrity or other influential voices might be a similar approach.

Similarly, while SICC IL approaches can build on other interventions that encourage critical reflection, they should integrate an understanding of how to encourage members of a particular SIC to engage in these behaviors. While the literature emphasizes the importance of critical reflection, few studies address the all-important question of how to get individuals to engage in this practice if reflection (or reflection in this way) is not already a valued part of their SIC. For this reason, it may also be helpful to engage current or former members of the SIC in sharing counternarratives from within the SIC itself that may support the ultimate goal of developing IL skills. Conversation group approaches such as Vaccine Talk offer one possible way to engage such counternarratives, if deliberately cultivated and supported. When using such an approach, we

must be aware of how super-spreaders use similar groups to achieve the opposite goals, and further pull in uncertain SIC members (and potential members) by doubling-down on and tailoring compelling narratives (CCDH, 2020). Yet the very success of this approach in drawing individuals into SICs may indicate the potential for successfully using the same approach to help draw them out of it again.

Finally, we argue that IL interventions must understand how dis/misinformation is shared within and outside of SICs, specifically by understanding the technical affordances of the ICTs that are an integral part of the SIC. Building on advice given by Donovan et al. (2021) that is "designed to work within any cultural context" (p. 4) and "can be tailored to specific environments as per the needs of the locale and situation" (p. 5), we argue that an SICC approach can go one step further by understanding the COVID-19 dis/misinformation SIC is the cultural context itself to which it should be tailored. Accordingly, information professionals attempting an information literacy intervention for this (or any) SIC can employ the approach of "investigative digital ethnography" (Donovan et al., 2021, p. 4) as part of their development of cultural competency. This approach also includes developing familiarity with the specific ICTs (and their affordances) used by the SIC, as an integral part of the SIC.

Notably, as Donovan et al. (2021) argue, "Observing online communities properly takes time, and the ethnographic process requires a commitment to observation during breaking news events and also during the downtime in between" (p. 47). Similarly, we posit that perhaps the most defining feature of an SICC approach is the deliberate avoidance of haste in deploying (particularly automated) interventions; time is required to develop both cultural competency and a meaningful relationship with the SIC, with which an information professional seeks to work. Time and relationship building are important features, for example, of the Vaccine Talk conversation group. While these features are also largely absent from current automated approaches (such as the prebunking and accuracy prompt interventions), we argue that automated approaches might find greater success within the core dis/misinformation SIC if these approaches were designed after fully developing cultural competency.

Information professionals—particularly those who are used to engaging with the field of social informatics—are particularly well-situated to appreciate the effort necessary to understand fully both the sociocultural and technical aspects of an SIC before designing anything. We propose that the SICC framework provides a valuable approach to understanding the who, why, and how of successfully treating a viral misinformation culture.

Conclusion

In this chapter, we have proposed a novel framework for designing contextualized information literacy interventions using the approach of SICC.

While developing a case study of dis/misinformation spread through social media during the COVID-19 pandemic, we argue that current information literacy efforts to address COVID-19 misinformation—while promising—are incomplete because they currently fail to fundamentally understand and address why, how, and through whom cultures of dis/misinformation continue to flourish online. We propose that adopting an SICC framework will better allow existing and future information literacy efforts (such as those aimed at combatting COVID-19 misinformation) to assist individuals in developing their information literacy skills within the context of their social information culture.

In addition to advancing IL practice and research, our SICC framework contributes to the field of SI research by introducing the novel concept of SICs. The field of SI is a foundational aspect of the SICC framework and guides the principle of understanding SICs as inherently and deeply sociotechnical "subjects" that are deserving of study. Additionally, we encourage the field of SI to embrace the conceptual and methodological framework of cultural competency when investigating SICs; while cultural competency (or cultural humility) is becoming increasingly relevant within the practice of many information professionals, it has not yet been adopted within the research (or practice) specifically of SI. Accordingly, our case study examination offers one starting example of how SI research might adopt the SICC framework.

In order to "treat" viral misinformation cultures, information professionals must develop both a sociotechnical and sociocultural understanding: they must become empathetic "doctors" who take the time necessary to understand fully where their "patients" are coming from, or risk administering ineffective or even harmful treatments.

Note

1 Because we are not interested here in distinguishing between the sources and/or intentions of the creators of inaccurate COVID-19 information, for the purposes of this case study, we primarily refer to inaccurate information as "misinformation" or "dis/misinformation".

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