Potential Implications and Applications of Terror Management Theory for Library and Information Science

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ABSTRACT

Mental health experts warn the combination of overwhelming amounts of information, economic instability, political discontent, social injustice, and the high infection and death rates of the ongoing COVID-19 pandemic are negatively impacting mental health in ways that may worsen the pandemic and intensify our primal fear of death. Terror Management Theory (TMT) argues that self-esteem and cultural worldviews serve as defenses against the terror of our own mortality. This theory anchor paper introduces TMT to Library and Information Science (LIS) via a selected literature review on TMT's use in the field of Psychology and an extensive discussion on the conceptual connections to LIS supported with empirical research from related disciplines and contexts. The implications, applications, and usefulness of TMT for LIS research, education, and practice are discussed in relation to the COVID-19 pandemic and other contexts, and a research agenda is proposed.

Keywords: Self-Esteem, Mortality Salience, Terror Management Theory, Theory Applications

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1. Introduction

According to the World Health Organization, as of October 13th, 2020, there are over 37,704,153 confirmed cases of COVID-19, including 1,079,029 deaths globally. While a few countries have made successful attempts in mitigating the pandemic's impact, the pandemic is, unfortunately, unlikely to end anytime soon. In addition to the ever-growing infection rate and devastating death rate, the COVID-19 pandemic has and is impacting mental health, often exacerbating existing mental health issues and illnesses. Torales et al. (2020) state that the pandemic is creating more mental health problems related to stress, anxiety, depression, sleep disorders, denial, anger, and fear, at the global scale. In turn, they warn that these mental health problems can impact individuals' everyday behaviors as well as health, economic, and political decision-making at larger, collective levels in ways that may prolong or worsen the pandemic. Holmes et al. (2020) issued an urgent multidisciplinary call for research to understand the impact that life during pandemic conditions has on mental health, brain function, cognition; to develop and assess interventions to mitigate these issues; and to assess the impact of media consumption and health messaging on mental health, among other critical needs.

While Library and Information Science (LIS) as a field is not primarily concerned with mental health, LIS scholarship has become increasingly inter- and multi-disciplinary in nature. Pettigrew and McKechnie (2001) found that while Information Science researchers are more often using theory, they often import theories from other fields and note that theories from Information Science are not cited widely outside of the field. While their findings offer criticism in part, they also identify the longstanding precedent of using outside theories in LIS. Chang and Huang (2011) similarly found that LIS research is becoming more interdisciplinary in citations and collaborations. The ubiquity and various meanings of information and contexts of its use may also lend to such inter- and multi-disciplinarity. Furthermore, there exists much LIS research focused on understanding information and its use through a cognitive perspective (Raber 2003) as well as research on the relationships between information behavior and emotion (Nahl and Bilal 2007; Kuhlthau 1988). Relatedly, LIS scholars and practitioners focusing on information, media, and digital literacy hope to promote the abilities and skills needed to seek, evaluate, manage, and use various types of information and media.

Considering the above, this paper seeks to introduce a theory from the field of Psychology that may have useful implications and applications for Library and Information Science: Greenberg, Pyszczynski, and Solomon's (1986) Terror Management Theory. In brief, Terror Management Theory (TMT) argues that humankind's awareness of death, or mortality salience, creates a sense of existential fear, hence terror, against which humans must uphold and bolster their self-esteem in light of the criteria of their cultural worldview (Greenberg, Pyszczynski and Solomon 1986; Pyszczynski, Solomon and Greenberg 2015). TMT argues that increasing mortality salience or threatening one's self-esteem or cultural worldview, either consciously or unconsciously, has major impacts on all manner of human behaviors, including information behaviors, as the authors will discuss below. With the pandemic weighing heavily on the hearts and minds of nearly everyone

on the planet, awareness of our own mortality, and fear of it, on a collective, global scale is high. This dread may be further amplified by the constant flow of information and media regarding and depicting the health, scientific, economic, and political impacts of the pandemic. Pyszczynski et al. (2020) argue that the extraordinary individual, societal, financial, and political costs of COVID-19 and the overwhelming flow of information and media through virtually all sources make it difficult for people to manage their conscious or unconscious fear of death.

To introduce Terror Management Theory to LIS scholars, this theory anchor paper includes an introduction and description of TMT; a selected literature review focusing on the use of TMT in Psychology; a discussion on the implications and potential applications of TMT for Library and Information Science based on related applications of TMT; and a proposed research agenda. Given the inspiration for this paper, the discussion on TMT's connection to LIS will use COVID-19 as a running example to provide timely real-world context. The approach to this theory paper is based on the anchor papers for other theories and methodological approaches that have been imported into Library and Information Science, such as competency theory (Gross 2005); semiotics (Raber and Budd 2003; Warner 1990), phenomenology (Budd 2004), diffusion of innovations (Chatman 1986; Marshall 1990), sense-making (Dervin 1983, 1998), and others. Like those anchor papers, the purpose of this theory anchor paper is to introduce TMT to the LIS community through an accessible and detailed description of the theory and an extensive discussion of the conceptual connections to LIS supported by empirical research from related fields to identify and explore TMT's potential implications and applications for research, practice, and education in LIS. As such, this paper establishes an anchoring point for TMT in LIS and identifies important areas for future work in a variety of Library and Information Science research, practice, and education contexts.

2. Terror Management Theory

2.1 Background and Development

Greenberg, Pyszczynski, and Solomon's original conceptualization of Terror Management Theory in 1986 was heavily influenced by the work of the late anthropologist, Ernest Becker, who explored the significance and importance of self-esteem, death, and culture for humans (*The Birth and Death of Meaning* 1962; *The Denial of Death* 1973; *Escape from Evil* 1975). Inspired by Becker's work, Pyszczynski, Solomon and Greenberg (2015) state that their 1986 book chapter, where TMT was first presented, sought to explore the need for self-esteem, why we need to believe our worldviews are correct instead of others' worldviews, and why different people have difficulty in striving for peace. Further reflecting on their motivations for developing the theory over thirty years ago, the authors explain that they aimed to develop a psychological theory to explain "why people behave the way they do" at a broader scale than other theories at the time they thought were more focused on explaining clinical and experimental results (Pyszczynski et al. 2015, 3).

Coincidentally, Pyszczynski, Solomon and Greenberg (2015) note that TMT arose alongside other social psychological theories with similar goals, such as Deci and Ryan's (1980) self-determination theory and Buss's (1989) evolutionary psychology. Since TMT's inception, it has been explored and tested in a wide variety of topics, contexts, and methodologies (Greenberg et al. 2014; Pyszczynski et al. 2015; Solomon et al. 2004, 2015).

2.2 Key Concepts

This section will define the several key concepts, propositions, and hypotheses associated with Terror Management Theory to help explain the theory, its implications, as well as to make the literature review in Section 3 more accessible.

Influenced by Becker's work, Pyszczynski, Solomon, and Greenberg (2015, 6) define *self-esteem* as an "individual's assessment of the extent to which he or she was living up to the standards of value associated with the cultural worldview to which he or she subscribed." Self-esteem is crucial because it operates to "buffer the anxiety that results from awareness of the inevitability of death" (Pyszczynski et al. 2015, 6).

Pyszczynski et al. (2015, 7; Greenberg et al. 1986) argue that humans, as animals evolved through the process of natural selection, have an acute awareness of death that instills an "intense primal fear," which they denote as *terror* to specifically emphasize its "potency and connection to death." Pyszczynski et al. (2015) argue that this terror must be effectively managed to allow humans to survive and achieve their goals. However, they note that TMT is more focused on how humans manage terror "in response to awareness of the long-term inevitability of an inescapable fate" rather than how fear impacts survival behaviors in response to proximal threats or immediate sources of deadly physical harm (Pyszczynski et al. 2015, 7). Awareness of death is operationalized as mortality salience (MS) in much of the research, as seen below, and can be influenced through conscious or unconscious means and can result from either proximal or distal threats.

TMT argues that the same cognitive faculties that allow for humans to be aware of their own deaths provide the means to manage the terror that arises from that awareness, in part, through the creation, adoption, and adherence to cultural worldviews (Pyszczynski et al. 2015). Pyszczynski et al. (2015, 7-8) define a *cultural worldview* as:

> "[S]ets of ideas that provide: (1) a theory of reality that gives life meaning, purpose, and significance;
> (2) standards by which human behavior can be assessed and have value; and (3) the hope of literal
> or symbolic immortality to those who believe in and live up to the standards of their cultural worldview."

Above, literal immortality refers to beliefs in life after death, which are common in many religions (Pyszczynski et al. 2015). Symbolic immortality, on the other hand, refers to the lasting impacts or legacy of a person that persists after one's death, after living a life that has contributed value of some kind to their community or culture. To achieve either sort of immortality, to escape death in a sense, individuals must live in adherence to their cultural worldview and strive to

meet its standards.

2.3 Key Propositions and Hypotheses

TMT argues that by becoming valued within the context and through the standards of one's cultural worldview, one can bolster their self-esteem (Pyszczynski et al. 2015). When either one's self-esteem or cultural worldview is challenged, their ability to manage terror may be weakened or compromised. TMT's authors also argue that individuals need "consensual validation" of both their self-esteem and their cultural worldview from other persons to manage terror successfully (Pyszczynski et al. 2015, 8). This implies that encountering other persons with the same worldview or others that judge an individual favorably will improve that individual's ability to manage terror, and that encountering other persons that judge that individual unfavorably, or that hold a different worldview, will inhibit the individual's ability to manage terror. As such, people tend to seek approval of their worldview, especially from others they hold in reverence, and circumvent or ignore any challenges or disapprovals. Relatedly, this also implies that individuals will inflate the importance of those with similar worldviews or that offer praise, as well as disparage those with different worldviews or those who criticize the individual.

Given the above implications and propositions, recent articulation of TMT by the authors (Pyszczynski et al. 2015) identifies three main hypotheses of TMT: (1) Increasing self-esteem, in light of one's cultural worldviews, reduces anxiety of death; (2) mortality salience increases "one's need for the protection provided by one's worldview, self-esteem, and close attachments and therefore increase one's commitment to or striving for them" (p. 11); and (3) "threats to any component of a person's anxiety buffer should increase the accessibility of death-related thoughts" (pp. 11-12). Pyszczynski et al. (2015) also note that these three hypotheses can be combined in other ways, as seen in some of the studies described below.

2.4 Limitations and Critiques of TMT

As with all theories, Terror Management Theory has its share of limitations and critiques. Martin and van den Bos (2014) argue that TMT is not falsifiable, does not adequately address individual or cultural differences, and does not consider other explanations of human behavior. Proponents of evolutionary psychology argue that the development of an anxiety reduction system is inconsistent with some interpretations of evolutionary psychology and biology, and instead argue that preference towards and adoption of in-group worldviews has more to do with how humans process decisions when forming coalitions and establishing social groups (Navarrete and Fessler 2005; Kirkpatrick and Navarrete 2006).

Pyszczynski et al. (2015) are cautious to point out that neither TMT nor mortality salience in particular are intended to explain all of the motivations for human behaviors. They argue that TMT does not exclude the influence of other factors and point out that both they and others have conducted research when surprising results occur or when other factors seem to be involved.

They explain that TMT is meant to interact and connect with other psychological theories and state, "We believe that conceptual interconnectedness across theoretical constructions is a useful way of promoting integration across research domains toward a more complete understanding of human behavior" (Pyszczynski et al. 2015, 13).

Pyszczynski et al. (2015) have responded to the criticisms above, citing many studies that have addressed individual differences as well as empirical support for the theory across cultures as evidenced by research conducted in over 25 countries around the world. For more specific and detailed responses to the critiques of TMT, please see Pyszczynski et al. (2015); Landau, Solomon, Pyszczynski and Greenberg (2007); Pyszczynski, Abdollahi et al. (2006); Pyszczynski, Greenberg, Solomon and Maxfield (2006); Solomon, Greenberg and Pyszczynski (1997). In reflecting on more than 30 years of TMT research and theory development, including the above and other criticisms and limitations, TMT's original authors call for more research on TMT related to how mortality salience relates to other potential threats, how different cultural worldviews think about life and death, which specific beliefs within cultural worldviews individuals rely on when threatened, other approaches for avoiding death and attaining a sense of immortality, and how TMT may relate to psychological disorders, as well as identifying and assessing other approaches to live without fear of death (Pyszczynski et al. 2015).

3. Selected Literature Review

Due to TMT's substantial bibliography, space constraints, and out of consideration for the reader, this selected literature review highlights relevant research on TMT from its major field of origin, Psychology, and some of its related sub-fields. Applications of TMT in other related fields and research contexts will be discussed throughout Section 4.

Hundreds of studies have investigated, and mostly confirmed, the effects of mortality salience on individual psychology, inter-group bias, and cultural psychology and worldview. What follows is a select review of representative studies. Generally speaking, whatever individual behaviors a person is likely to engage in are heightened by mortality salience, and whatever worldview one holds is likely to be defended more aggressively in response to mortality salience, although there are exceptions. By necessity, this section will focus on select studies to illustrate the various approaches taken to testing the effects of TMT. Most studies have investigated emotions, behaviors, and attitudes. It is not surprising that emotions come into play when individuals are reminded of their mortality, but research suggests that other individual psychological traits influence what kinds of emotions are felt. DeWall and Baumeister (2007), for example, confirmed through three studies that when people are exposed to mortality salience, a buffering mechanism is activated, causing them to focus on pleasant emotions and positive information. This mechanism, however, is not accessible for all individuals. Juhl and Routledge (2016) found that mortality salience causes higher levels of anxiety in people who have low levels of psychological buffers, such as believing that life has meaning, being prone to nostalgia, identifying with a social group, and possessing

a sense of self-worth. It has even been found that people with low levels of self-esteem, when exposed to mortality salience, are less likely to be able to identify their own face when presented with a series of rapidly displayed images (Guan et al. 2015). A possible explanation is that, when reminded of their own mortality, people want to avoid focusing on the self. Other studies indicate that what some people tend to focus on instead is defending their worldview, but this too varies according to levels of self-esteem. Schmeichel et al. (2009) found that individuals with high intrinsic self-esteem tended not to increase defense of their worldview when exposed to mortality salience. However, individuals with high explicit self-esteem did increase their worldview defense, suggesting that they are less able to buffer against the threat of death.

Self-esteem is by no means the only factor in people's reactions to mortality salience. Various studies have looked at the effects of high vs. low PNS (personal need for structure), extrinsic motivation, and collectivistic vs. individualistic mindsets. Juhl and Routledge (2010) discovered that individuals with a high personal need for structure (order, predictability) when exposed to mortality salience increased their worldview defense. People with a low need for personal structure (complexity, novelty) when exposed to mortality salience did not increase their worldview defense. Cozzolino et al. (2004) found that individuals with high extrinsic motivation tended to become less greedy when exposed to a near-death experience; however, when exposed to mortality salience (a reminder of their own death), individuals with high extrinsic motivation tended to become more greedy.

Green and Merle (2013) found that, in general, mortality salience has a negative effect on people's intentions for civic engagement. However, this varied somewhat, depending on whether the individual had a collectivistic mindset or an individualistic mindset: those with a collectivistic mindset expressed more positive intentions for civic engagement.

Introducing other factors along with mortality salience into a TMT study can affect people's reactions. Jonas et al. (2008), for example, discovered that introducing a pacifist prime along with mortality salience increased subjects' pacifist tendencies; likewise, introducing a con-servatism/security prime increased subjects' tendency to be harsh in the penalty they recommended for a prostitute. In at least one study, the other factor introduced was a second reminder of mortality. Hirschberger, Ein-Dor and Almakias (2008) found that mortality salience made people more likely to make a charitable donation to someone who did not have a visible disability, but they were less likely to sign an organ donation card or to help someone in a wheelchair. The hypothesis was these visible reminders of mortality had a negative effect on people's prosocial behavior.

Research also indicates that mortality salience has an effect on people's cultural attitudes, especially toward those perceived as being outsiders. An early study found that participants who experienced mortality salience demonstrated aggression toward other participants they perceived to have an alternative worldview from their own. Aggression was seen in the amount of hot sauce they selected for these other participants to consume (Lieberman et al. 1999). In a provocative thought piece, Kashima (2010) compares the approach of cultural psychology (CP) with TMT, and argues that TMT studies could benefit from CP's research on "cultural components that highlight cultural diversity and group differences" (p. 169) and that CP could benefit from considering whether

these differences are changed in any way by a reminder of mortality. In a study of French and American college students, Weise et al. (2012) found that those who scored high on a measure of right-wing authoritarianism, when reminded of their mortality, evaluated an immigrant more negatively than those who scored low. Other research has shown that even membership in a short-term group can increase intergroup bias when mortality salience is introduced, suggesting that even the most minimal kind of group identification can help buffer against the existential threat (Harmon-Jones et al. 1996). On a societal level, Greenberg and Kosloff (2008) suggest that TMT can help explain intergroup conflict and such behaviors as prejudice, stereotyping, discrimination, and scapegoating. And they observe that people who are targets of prejudice by a dominant group can respond in one of three ways: assimilation (becoming part of the dominant group), militance (fighting against the dominant group), or pluralism (fitting into the dominant group while still maintaining one's cultural identity). In a speculative essay, Williams (2008) suggests that globalization may actually be eroding traditional cultural buffers that people typically invoke when faced with mortality awareness. As a result, people are looking for groups with whom they can identify strongly, and this may account for the rise in nationalism and fundamentalism. Williams advocates for the importance of developing some kind of "multi-cultural buffer" (p. 111). Interestingly, though, recent research has shown that people who hold tolerance as part of their worldview may, in the face of mortality salience, actually be less tolerant toward people they perceive as not tolerant. Three studies suggest that tolerance as a way of reducing prejudice between groups has its limits (Fairlamb and Cinnirella 2020).

Finally, mortality salience may account for people's attitudes toward various "hot button" issues. Wolfe and Tubi (2019), in proposing a research agenda related to TMT, argue that there may very well be a connection between mortality salience and people's attitudes toward climate change. According to their line of thought, information about climate change, which is often presented in dire terms, reminds people of their mortality and thus activates various defense mechanisms, including denial, distraction, rationalization, defending one's worldview, and showing antagonism toward groups with different views.

4. Connections to Library and Information Science

This section identifies connections and discusses some potential implications of and applications for Terror Management Theory in Library and Information Science supported by empirical research from related fields and contexts. To add theoretical and practical weight, examples and connections to the COVID-19 pandemic will be weaved throughout the discussion given the inspiration and goals of this paper.

4.1 Information Seeking, Library Anxiety, Information Avoidance, Confirmation Bias

It would seem that TMT can help explain why people sometimes seek information, what kinds

of information they seek, and what kinds of information they avoid. In the face of reminders of their mortality, such as the COVID-19 pandemic, people are likely to seek information for a variety of reasons: to determine what the threat is, to decide if it is a credible threat, to identify actions they can take to lessen the threat for themselves. But some interesting questions arise. For example, how do people engage in Sense Making (Dervin 1983; Dervin and Nilan 1986) in trying to bridge a gap in their knowledge in an attempt to make sense of a frightening and complex situation? As an example, Fischer-Preßler et al. (2019) combined sense-making and TMT perspectives to explore how people on Twitter reacted to the Berlin terrorist attack in 2016 and found that people used Twitter to make sense of what happened, but to also reinforce their worldviews and sustain their self-esteem. Fischer-Preßler et al. (2019) found that while people used Twitter to process and understand the event, express sympathy, and advocate for tolerance, users also conveyed nationalistic attitudes and increased criticism of and resentment towards different cultural worldviews.

Relatedly, a threatening situation, such as a pandemic, would seem to be a case where people would be willing to expend energy to obtain as much information as possible, so is the Principle of Least Effort (Zipf 1949) at all evident? Similarly, it might seem that people would want a complete picture of the situation, so to what extent (if any) do they engage in satisficing (Simon 1976). Research could help to answer these questions, and TMT might provide a way of explaining counterintuitive results. Information seeking behavior that might appear to indicate the Principle of Least Effort and satisficing at work, but a consideration of TMT might suggest that people are going immediately to trusted sources because these sources are produced and consumed by the people in the group they closely identify with and from which they derive their self-esteem. By the same token, these sources most likely reflect the worldview that they themselves have adopted. So what may initially appear to be an unwillingness to expend a lot of energy seeking information, seen through a TMT lens may actually indicate a strategic seeking of information in "acceptable" sources. The result is what Nickerson (1998) called "confirmation bias." In other words, people gravitate to the sources that confirm the worldview they already hold. Ma (2011) argues that some information theories disregard the social and cultural facets of information. TMT may provide a connection between individual behavior (and agency) and social and cultural influences, which is a complex, recurring topic throughout the social sciences.

Closely related to confirmation bias is information avoidance, which is the tendency of people to actively avoid information that may be frightening or threatening to their worldview and their self-esteem (Golman et al. 2017). Among the numerous consequences of information avoidance, Golman, Hagmann, and Loewenstein list the spread of disease as one of the dangers. In the case of COVID-19, avoiding potentially useful information on the etiology of the disease obviously could have (and has had) dire, even fatal, consequences. Additional consequences of information avoidance include groupthink, media bias, and political polarization (Golman et al. 2017). Clearly, with information seeking and information avoidance related to the pandemic, all of these things are evident. While information professionals may assume that connecting people with reliable information about COVID-19 will go a long way to solving these problems, TMT and information

avoidance would suggest the situation is much more complex than that.

Another issue for some people in terms of seeking information is library anxiety. Library anxiety is the term coined by Mellon (1986) to describe the negative emotions many people feel when they enter a library: they feel lost, they do not understand how to navigate the space and access the collection, and they believe their skills are inferior to those of other library users. Relatedly, Kuhlthau (1991, 1993) argues that uncertainty often instigates the information seeking and, in part, because uncertainty can increase anxiety and decrease confidence. Additionally, Kuhlthau (1991, 1993) notes that feelings of uncertainty, anxiety, and confidence vary through different stages of the information search process (ISP) model. During the pandemic, people with library anxiety are unlikely to suddenly feel they are capable, confident library users. In fact, faced with mortality salience triggered by the threat of COVID-19, such people may find their anxiety about the library is only exacerbated. The library is not a comfortable source of information, and in some cases the library may even be seen as hostile and unreliable because it is a government-funded institution. Such people may very well experience information poverty (Chatman 1996). TMT might help to explain this behavior as well. If the library is not seen as reflecting someone's worldview as a trustworthy source of information, in the face of mortality salience, that person is even less likely to turn to a library for information. By the same token, if someone has low self-esteem as a library user and information seeker, that person, when reminded of their mortality, is even more unlikely to consult a library.

4.2 Information and Media Literacy, and Propaganda

TMT posits that people resolve mortality salience by seeking solace in cultural worldviews that affirm their places in and value to society (Perloff 2016; Shehryar and Hunt, 2005). Media plays a distinct role in shaping these cultural worldviews by presenting mortality salience to its consumers through media coverage of violence, disaster, and death and by connecting consumers with content that affirms their worldviews, group identity, and by extension, sense of worth and self-esteem (Perloff 2016). A problem is that media consumers may regard some media platforms as epistemic authorities even though the platforms are not qualified to be regarded as such (Jäger and Malfatti, 2020). Part of the mission of the LIS field is to inculcate media and information literacies in the general populace, and having another lens through which to examine what motivates people to seek information and the psychosocial factors that affect their acceptance of information benefits the field. Commentary on the discussion regarding the precise nature of the relationship between information literacy and media literacy (Addison and Meyers 2013; Jacobson and Mackey 2013; Leaning 2019; Lee and So 2014) is outside the scope of this paper, so the terms 'media literacy' and 'information literacy' will be used to reflect their usage in the research in which this paper is based.

Masterman (1989) describes media as being representational signs in a symbolic system that present a constructed image rather than a reflection of the world where media are best understood through a conceptual framework rather than a content-oriented approach. The idea of absolute

relativism, where all viewpoints are valid and all facts are constructed, is problematic since it abrogates the ability to agree on science facts and some ethical principles (Baer 2018). Media views audiences as producers of economic resources (Harrington and McNair 2012) and seeks to cultivate viewership through the creation of a 'brand identity' (Jones 2012) which consumers are invited to assume. These brand identities affect consumer perceptions and opinions (Taylor et al. 2014) and can influence consumers' receptivity to negative information about their chosen brand (So et al. 2018); essentially, consumers may form such a deep attachment to their chosen media brand that they are unwilling to process legitimate critiques of the platform. Being media literate means understanding that all media messages are constructed and have embedded values/perspectives, the creative techniques used to create media have their own rules, each person experiences the same media message in different ways, and profit is the primary motive for creating media (Thoman 1999). Using this conceptual framework, the LIS field can invite media consumers to interrogate the messages with which they are presented in terms of who is representing what, how, and why.

The notion that the populace should be educated about and literate in the media they consume is not a new one, dating back at least to one of the earliest breakthroughs in mass communication, broadcast radio (Jolls and Wilson 2014). Leaning (2019) describes three approaches to media literacy education: a protectionist or inoculation approach, based on the idea that media can have a harmful effect on those who consume it and that media consumers can be 'inoculated' from harm with proper education; a cultural/linguistic approach based on fostering knowledge of media techniques to create better understanding and consequently dilute the power of media messages; and a constructivist model, whereby media consumers are taught media production techniques by creating their own media messages with the assumption that knowledge of the construction will facilitate understanding of deconstruction. Unfortunately, media literacy is not typically included in EC-12 curricular standards or part of teacher preparation programs (Jolls and Wilson 2014). School and public libraries can and do work to provide instruction in information and media literacy (Farmer 2019; Kymes 2011; Silverman and Piedmont 2016; Tripp 2011) but they alone are not sufficient to fill the gaps and without training and education, much of the populace is left vulnerable to manipulation as the incidence of propaganda is on the rise (Zollmann 2019). Cooke (2017) also argues that information literacy instruction and education must be for those of all ages both within and outside of traditional educational contexts.

Fake news and/or 'post truth' are more properly called propaganda (Poulakidakos et al. 2018; Salgado 2018), and propaganda has always been part of the fabric of media (Mason et al. 2018). Propaganda may be conceptualized as the intentional or unintentional communication of media messages created to manipulate public opinion (Zollmann 2019). The new media landscape, comprised of traditional and social media presences, is fertile ground for the creation and dissemination of propaganda as users can easily find and are algorithmically served content that reinforces their existing beliefs; some content servers have abandoned any pretense of journalistic objectivity and integrity and instead function as open platforms to serve (often nationalistic) ideologies (Näsi et al. 2020). Further, the expansion of the number of media platforms is working to erode trust

in traditional media, leading to a shift towards alternative media which have no obligations to any standards of journalistic objectivity and integrity (Thorbjørnsrud and Figenschou 2020). The LIS field teaches that authority is constructed and contextual, but it should also be framed with an appreciation of expertise and healthy skepticism (Baer 2018). Cooke (2017) argues that developing and using critical information literacy and other metaliteracy skills are long-term and crucial part of the strategy to combat fake news and other forms of mis- and disinformation.

The use of propaganda by state actors is proliferating on social media, used to spread misinformation about military actions, elections, and humanitarian crises (Bradshaw and Howard 2018). Political actors are also purchasing advertising space in media outlets to disguise their propaganda as ostensibly more credible news stories (Dai and Luqiu 2020). Partisan and/or conspiracy propaganda especially evokes an affective response (Vamanu 2019) and is designed to shake the faith in democratic institutions (Albertson and Guiler 2020). Western democracy is effectively under siege, the target of relentless and systematic attacks perpetrated by foreign actors (Bjola 2018).

The exploitation of fears is a key tool of propaganda: when presented with a stressor the human brain shifts resources away from the executive control network to the salience network, essentially shutting down logical reasoning and critical thinking to support a fear reaction (Hermans et al. 2014). Mortality salience affects product consumption (Das et al. 2014), and media are effectively a product to be consumed. Media adeptly uses fear as a selling point to draw consumers, highlighting violence and crime to evoke a strong affective response (Näsi et al. 2020) although passively consumed media (e.g. broadcast news) is not as influential as actively consumed media (Williamson et al. 2019) and less educated and lower income young people tend to have lower engagement with and trust in traditional news media (Thorbjørnsrud and Figenschou 2020). A recent example of media shaping perceptions can be seen in coverage of the COVID-19 pandemic where the way the media communicated information intensified fear, feelings of trauma, and general psycho-logical distress (Trnka and Lorencova 2020). The constructed representation of the world as a fearful and violent place presented by the media becomes reality for media consumers, inspiring them to support laws and policies like the death penalty and open carry laws (Dolliver et al. 2018).

Regarding media literacy in general and news literacy in particular, not all hope is lost: there are some remedies that may be employed, though some are more effective than others (Vamanu 2019). News literacy programs that use a balance of objective news stories and disinformation are more effective and create longer lasting results (Murrock et al. 2018). News literacy media messages can effectively mediate misinformation if they are presented in a targeted campaign with repeated messages (Tully et al. 2020). Greater news literacy is correlated with a lower probability to endorse conspiracy theories, even those that aligned with the person's political ideology (Craft et al. 2017). Yet, having the cognitive skills to deconstruct arguments and make inferences provides no benefit if one does not also possess the 'habit of mind' or disposition to consistently use said skills (Shpeizer 2018). Baer (2020) argues that to be truly effective, the conception of information literacy must broaden beyond just the ability to evaluate the quality of sources to include the reflective capacity to recognize and acknowledge how people in general interact with information

and in particular how various psychosocial factors affect those interactions.

Intellectual empathy may be used to engage in a meaningful way with people who are less media/information literate and encourage them to think more critically. Intellectual empathy requires reflection on the affective and cognitive factors that shape social identity and how social difference affects reasoning and belief (Baer 2020). Four factors of intellectual empathy are: adopting a viewpoint of mutual compassion, recognizing the intersectional nature of social identity, acknowledging the tendency of privilege to be invisible to those who have it, and taking the opportunity to provide evidence and information when a claim is dismissed as being personal rather than social (Linker 2016). People may accept contrary information after a delay but are more likely to reject contrary information when it is presented with high levels of mortality salience (Shehryar and Hunt 2005). The strength of the 'backfire effect,' wherein challenges to a view only serve to reinforce that view, can be lessened by reframing the contrary information in a less challenging manner and/or by including self-affirmation exercises (Baer 2020). boyd (2018) points out that some viewpoints are too toxic to engage with empathetically (or to quote James Baldwin: "We can disagree and still love each other unless your disagreement is rooted in my oppression and denial of my humanity and right to exist") and tremendous strength is required to not be overwhelmed by such toxicity. Empathy can be fatiguing and may be associated with vulnerability to stress, emotional exhaustion, and decreased life satisfaction (Chikovani et al. 2015) but Sustainable Compassion Training may help reduce the negative effects of empathy fatigue (Condon and Makransky 2020). Given the current climate of increasing nationalism and polarization fed by the explosion of propaganda promulgated through a growing number of media platforms, it would benefit the LIS field to re-examine current media and information literacy pedagogical practices, and the preparation of pre-service librarians who deliver instruction and otherwise interact with patrons who have varying levels of these literacies, with a perspective that integrates the interplay of various psychosocial factors and their effects on information seeking and acceptance.

4.3 Political Information

Along with the advancement of information and communication technologies (ICTs) such as the Internet, email, smartphone, and diverse social media platforms such as Facebook and Twitter, the loosely but globally networked individuals easily communicate with one another on public, societal, and political issues and participate in a wide variety of collective actions online (Papacharissi 2002; Dahlgren 2005; Hara and Huang 2011). In that those virtual spaces allow individuals for extended information access, more opportunities for open discussion, and public opinion formation with others, they are considered as virtual public spheres (Dahlgren 2005; Chadwick 2006; Shirky 2011). Studies on political communication on Twitter found that users gathered in highly segregated subgroups according to their political orientations (usually the liberal vs. the conservative) and engaged in exclusive information sharing/avoiding behaviors (Himelboim et al. 2013; Conover et al. 2011; Metaxas and Mustafajaj 2010; Lee et al. 2016; Lee 2019). Along with findings from political blogs (Adamic and Glance 2005), it shows that political communication online has the

same popular dynamics as offline political communication, homogeneous political choices within groups and polarized information behaviors between groups (Berelson et al. 1954; Huckfeldt et al. 2004; Sunstein 2007).

What closely relates to TMT here is social media users' selective information sharing or avoiding due to their political worldview. Users choose information that reinforces their existing political as well as cultural worldviews and avoid actively information that may threaten or challenge their views (Golman et al. 2017). This was already discussed in the previous section along with the concept of confirmation bias (Nickerson 1998). When users approve information from the people they closely identify with and derive their self-esteem from, and exclusively share that information with people who share the same or similar political orientation, political polarization becomes extreme. Lee (2019), in examining the South Korean general election in 2014, found that like-minded users in groups utilized Twitter as a tool of selective exposure to the information sources (mainly from both mainstream and alternative/independent news media regardless of the accuracy and credibility of information) supporting their own political orientations and worldviews. This explains how fake news and propaganda circulate fast within politically homogeneous groups and polarization between groups becomes strengthened at the same time. Relatedly, those that gain political information from only sources that match their worldviews may have biased or incomplete information. For example, Licari (2020) found that while visitors to the Foxnews.com, a conservative news website, did not have different levels in understanding how the political system operates in the US, those that visited the website were less knowledgeable about societal issues.

Kim (2019) reported how conservative seniors from South Korea blindly trust and share hostile fake news with their social contacts through a popular personal messenger service, KakaoTalk. Most angry seniors not only experienced generational and political gaps among their family members (especially their own children) regarding issues of the Korean War and authoritarian military dictatorships (that trigger the notion of mortal salience), but they also got frustrated by mainstream media that failed to represent their political opinions and orientations (Kim 2019). Conservative senior citizens in Kim's study (2019) shared fake news and propaganda via KakaoTalk because they felt that that mis- and disinformation somehow confirmed their commitment to and sacrifices for the rapid industrialization of South Korea throughout their lives and thus, they felt 'approved' or 'recognized' by others in society. As Vamanu (2019) found, these senior citizens were emotionally evoked by partisan/conspiracy propaganda and fake news, and excessively empathized themselves with impeached president, Geun-hye Park.

From the perspective of TMT, the phenomenon stated above can be explained how those individuals with low self-esteem, when exposed to mortal salience, increasingly defend their worldview, demonstrate aggression toward those with a different worldview, and gravitate toward authoritarian or nationalist leaders. An experimental study by Cohen et al. (2004) found that in response to increased mortality salience, participants demonstrated greater preference for charismatic leaders and lesser preference for relationship-oriented leaders. Their results were consistent with TMT in that in the face of mortality salience, individuals will try to increase their self-esteem and charismatic

leaders excel at that. Evoking Hitler and Mussolini, both of whom were elected, Cohen et al. (2004) remind readers that preferring charismatic leaders over relationship-oriented leaders has resulted in totalitarianism and warn that democratic elections are not enough to stop them. Greenberg and Kosloff (2008) also found that when individuals' worldviews are challenged by increased mortality salience, individuals may exhibit more prejudice, legitimize stereotypes, and be more likely to support charismatic leaders, and express hostility towards outside, different groups.

On the South Korean Independence Day of August 15, in the middle of the COVID-19 pandemic, more than 10,000 people nationwide, including the extreme far right seniors such as the Korea Parent Federation and conservative Christian groups led by Priest Gwang-hoon Geon, gathered in Gwang-hwa-moon square for political protest against the Moon administration (Hwang 2020). Even though the head of the Central Quarantine Headquarters repeatedly ordered all citizens to wear masks at all times and keep social distancing among themselves, protesters refused to adhere to guidelines. Again, protesters sharing similar ideological preferences and worldviews selected and disseminated biased information that aligns with their existing worldview, which make them engage in high risk decision makings such as not wearing a mask, gathering in massive protests against the quarantine guidelines. In a meta-analysis of multiple studies, Burke et al. (2013) found that mortality salience had a large effect on political attitudes, and that increased mortality salience also had a statistically significant and large effect which resulted in the strengthening of existing political ideologies, whether conservative or liberal. Additionally, shifts towards conservative political ideologies in response to increased mortality salience were also supported, but had a lower effect size and was statistically equivalent to the strengthening of existing worldviews response.

As seen in the previous section, propaganda is often used for political purposes. Through TMT, increased mortality salience may cause a doubling down on one's political ideology or cultural worldview, which may result in selective or biased information seeking from sources, including propaganda and partisan news sites, with similar worldviews and to prefer charismatic leaders that boost self-esteem and focus animosity on other groups. As seen in the next section below, political ideology or worldview may also influence health-related decision making as well. As such, LIS educators and scholars should consider the impacts that worldview defense and self-esteem boosting may have on seeking and evaluating information related to politics and society. The previous section discusses some of the approaches that may be effective against such challenges.

4.4 Health Information

Intrinsically, both physical and mental health, and their associated illnesses and other challenges, can raise mortality salience. There have been a variety of studies exploring how TMT may impact health-related decision-making as well as health communication and information dissemination. However, the impact of mortality salience on health decisions and behaviors can be mixed, leading to what may look like counterintuitive results.

Arndt et al. (2000) found that increases in mortality salience may lead to both adaptive or counter-productive (or ironic as they put it) health-related behaviors and decisions. For example,

adaptive results in response to the proximal and distal mortality threats could be individuals realizing their vulnerabilities and choosing a more healthy lifestyle or working to improve their self-esteem and lower anxiety to improve their overall health, respectively (Arndt et al. 2000). Negative results of increased mortality salience from proximal threats can lead to suppression or denial of health concerns, avoidance of appropriate treatment, or engaging in high-risk behaviors. Additionally, negative results of increased mortality salience from distal threats may result in worldviews that devalue suitable healthcare, weaken self-esteem, or further incite unsafe behaviors. Hansen, Winzeler and Topolinski (2010) found that individuals who derive high self-esteem through smoking are not persuaded to stop smoking by death-related warnings on cigarette packaging. Instead, they found that terrifying warnings that did not increase mortality salience but did target the source of the person's self-esteem (i.e., smoking makes them unattractive, smoking harms those you care about, etc.) were more effective at changing their attitudes about smoking. Jessop et al. (2008) found similar results when using mortality salient and non-mortality salient warnings with types of warnings when attempting to promote safer driving: those that associated driving faster with their self-esteem did not heed mortality-salient warnings as much. This type of response can also be seen during the current COVID-19 pandemic: despite health messages and information from governments, doctors, health officials, and various news sources, there are some who refuse to wear masks. When viewed through the lens of TMT, this ironic result may be because those individuals associate not wearing masks with their self-esteem, thus engaging in risky health behaviors despite copious data, information, and health messaging that reiterate the potential deadliness of COVID-19. As such, communicating public health information using messages designed to increase mortality salience may backfire.

However, risky behaviors and poor decision-making during a pandemic, such as not wearing a mask, attending large public gatherings, etc., may not solely stem from attempts at maintaining one's self-esteem. Accompanying the COVID-19 pandemic, is an "infodemic" consisting of false and/or misleading information that has been propagated through social media and traditional news media (Apuke and Omar 2020; Smith et al. 2020; Zarocostas 2020). Gao et al. (2020) found that increased exposure to social media during the COVID-19 pandemic has increased the occurrence of a variety of mental health problems, depression and anxiety in particular. Apuke and Omar (2020) and Lin et al. (2020) found that misinformation about COVID-19 circulating on social media have increased panic, fear, distress, and insomnia. Apuke and Omar (2020) also report another example of ironic results: the two most highly correlating and statistically significant predictors of sharing fake news are altruism and information seeking. Allington et al. (2020) found a positive correlation between social media use and belief in COVID-19 conspiracies and a negative relationship between belief in COVID-19 conspiracy behaviors and health-protective behaviors. Johnson et al. (2020) warn that misinformation and disinformation circulating on social media about vaccinations is propagating anti-vaccination views and may negatively impact vaccine use for COVID-19 (once available) and other vaccine-treatable diseases, potentially prolonging the current pandemic and worsening health outcomes.

Relatedly, Allington et al. (2020) found that when compared to using social media as an information

source, those who use traditional broadcast media as an information source were more likely to exhibit health-protective behaviors. However, negative health outcomes have also been the result of misinformation or disinformation from what many consider to be traditional news sources. For example, early research by Bursztyn et al. (2020) finds differences in health outcomes based on news show viewership. Their study focuses on the viewership of two shows on Fox News, *Hannity* and *Tucker Carlson Tonight*; both are popular with U.S conservatives and both initially downplayed potential risks of COVID-19. However, Carlson's show began to warn viewers about COVID-19 in early February, while Hannity did not until later in February. Even though viewership was conservative overall for both shows, greater exposure to Hannity's show, as compared to Carlson's show, was associated with larger numbers of COVID-19 cases and deaths at the county level. From the perspective of TMT, these findings may suggest that individuals that seek information from sources that boost their self-esteem or from other individuals or sources that share similar worldviews may inadvertently encounter and use information that may result in risky behaviors. Pyszczynski et al. (2020) explain that through TMT, individuals may respond to conscious or immediate threats by engaging proximal defenses such as trying to avoid thinking about the death or by denying or lessening the severity of the threat, which can be seen in the examples above. While Pyszczynski et al. (2020) point out that many individuals react to the threat of COVID-19 in adaptive ways by taking appropriate medical and safety precautions, such as wearing masks, cleaning surfaces, and abiding by social distancing guidelines, etc., other factors, such as social, economic, or political ones, may complicate things and lead to adverse reactions and behaviors.

The COVID-19 pandemic in some countries, particularly the US, has become highly politicized. The Pew Research Center (2020) found that Democrats and Republicans have major differences in opinion regarding many topics related to COVID-19, such as the extent of the pandemic's impact, views on wearing masks, how people's actions influence the spread of the disease, etc. As seen in the previous section with the example of the largely mask-less rally in Seoul during the pandemic despite warning from public health officials (Hwang 2020), the issue is not unique to the US. Pyszczynki et al. (2020) explain the increasing partisanship and hostility towards different worldviews brought about by the increased mortality salience created by COVID-19 pandemic are distal defense mechanisms intended to help individuals maintain their self-esteem and value within their cultural worldview. Through the lens of TMT, if one's preferred cultural worldview or self-esteem is closely tied to their political beliefs, then health information seeking, health-related behaviors, and health outcomes may suffer as a result. As Pyszczynki et al. (2020) and some of the aforementioned studies note, these trends call for more exploration of what occurs when upholding one's worldview may cause harm to themselves. Relatedly, Courtney, Goldenberg and Boyd (2020) argue that, from the TMT perspective, public health communication during pandemics should encourage more collective mindsets.

People are increasingly turning to the internet for health-related information (Weaver et al. 2010; Tennant et al. 2015). Looking for health information online has been identified as a coping mechanism (Lambert and Loiselle 2007). Ma (2014) found that while undergraduate students seek health information for self-care, many lack the health information literacy skills needed to

effectively find and evaluate health information. Through TMT, LIS researchers, librarians, and health information professionals may want to consider how mortality salience, self-esteem, and cultural worldviews may influence health information seeking and design health information literacy instruction and develop other resources and services accordingly.

4.5 Diversity, Cultural Competence, & Social Justice in LIS

As discussed in Section 2 and as evidenced in the research discussed in Section 3, TMT's propositions imply that individuals seek approval from others with similar worldviews, and disregard or reject critiques or challenges to their worldview. Consequently, individuals associate with and hold in higher reverence those with similar worldviews and denigrate or discriminate against those with different worldviews. Since the beginning of the COVID-19 pandemic, racism and xenophobia directed at Asian persons around the world has increased at a high rate due, in part, to the virus's origin in China (Gover et al. 2020; Le et al. 2020). Disease outbreaks create fear which can fuel discrimination towards racial, ethnic, or other marginalized groups (Devakumar et al. 2020). Due to long standing socioeconomic inequity, discrimination, systemic racism, and other issues, marginalized communities in the US, particularly the Black or African American, Latinx, and American Indian communities, have suffered disproportionately from the COVID-19 pandemic (Chowkwanyun and Reed 2020; Laurencin and McClinton 2020; Webb Hopper et al. 2020; van Dorn et al. 2020; Yancy 2020). Racist, homophobic, transphobic and other forms of discrimination have highly negative impacts both physical and mental health (Berger and Sarnyai 2015; Burgess et al. 2007; Landrine and Klonoff 1996; Misra et al. 2020; Nadal et al. 2014; Pereira and Costa 2016).

While one of the main goals for libraries, archives, museums, and other information organizations is to serve everyone in their respective communities, many of these institutions face challenges in their attempts to become more inclusive, representative, and diverse (Jaeger et al. 2015; Jimerson 2007). Gibson et al. (2017) find that libraries sometimes shirk away from their responsibilities in the name of supposed neutrality, and argue that by ignoring or choosing not to confront issues that impact communities of color is a violation of said purported neutrality in itself and further fails to serve their diverse communities and uphold core library values. Thomas et al. (2016) note that the stories and characters in children's books are predominantly white and that school library collections may not often be inclusive nor representative of the diverse communities they serve. Williams and Deyoe (2013) found that the youth collections in over a third of libraries with budgets over 100,000 USD did not meet the minimum standards for diverse representations. Through the perspective of TMT, lack of representation in library collections could negatively impact self-esteem and reinforce or prioritize one cultural worldview over others, which, in turn, could embolden those with unfair representation to think that their cultural worldview is the norm, or worse, superior to other cultural worldviews or the people that hold them.

Montiel-Overall (2009) defines cultural competence for LIS as "the ability to recognize the significance of culture in one's own life and in the lives of others; and to come to know and

respect diverse cultural backgrounds and characteristics through interactions with individuals from diverse linguistic, cultural, and socioeconomic groups; and to fully integrate the culture of diverse groups into services, work, and institutions in order to enhance the lives of both those being served by the library profession and those engaged in service" (pp. 189-190). Through the lens of TMT, developing and applying cultural competency skills may promote inclusive, social justice focused worldviews in both librarians and the communities they serve. Relatedly, Chu (2013) argues that using TMT to understand and mitigate prejudice may be helpful for anti-bias education and moral ethics education.

Cooke et al. (2016) argue that encouraging LIS culture to embrace social justice values and to develop culturally competent library and information professions will require a variety of strategies, such embedding social justice epistemologies and critical cultural theories throughout the curriculum, as well as developing community buy-in, engagement, and shared responsibility from LIS faculty through professional developments and interventions, such as reading and a discussion groups. Gibson, Hughes-Hassell and Threats (2018) found that the majority of required foundational LIS courses at the top 20 LIS programs in the US included little or no exposure to critical race theory or other critical cultural theories. In interviews with academic librarians whose work duties focus on diverse communities, Mestre (2010) found that most did not receive diversity or cultural competency education as LIS students nor through professional development. These studies suggest that future librarians are not prepared to serve diverse communities.

Gibson and Hughes-Hassell (2017) argue that LIS faculty need to work to enhance their own knowledge about the history and current issues related to discrimination in LIS, to promote their students' understanding of ethical and moral foundations for LIS practice, amplify the work and perspectives from marginalized faculty members and researchers, and to take part in public advocacy. Gibson (2019) reflecting on both her own experience and the experiences of other female faculty of color in LIS, describes the nuances and impacts of racist and misogynistic macro- and micro-aggressions in the academic context that is heavily steeped with privilege and calls for civility. Gibson (2019) states that LIS faculty need to step up, take responsibility and learn more, speak out and against inequity and injustice, push back against the ideas of neutrality and civility, know the names of faculty of color colleagues and believe their experiences, and shield faculty of color, especially untenured women faculty of color, from discrimination and other threats. Jaeger et al. (2015) argue that involvement from both educators and professionals is needed to adequately address social justice issues. Jimerson (2007) also advocates for archivists to adopt a social justice perspective and leverage their power to advocate for accountability, responsibility, and diversity. Caswell (2017) argues that LIS faculty must fight against white supremacy in archives through education that helps students and future LIS professionals, to identify and dismantle hate and discrimination. Through the lens of TMT, LIS educators and professionals should develop their cultural competency skills and understand and advocate for social justice to buffer self-esteem in their diverse communities and promote inclusive and diverse worldviews, which could help reduce mortality salience that may lead to discrimination, hatred, or worse. While these necessary goals are important all the time, they are and will be especially crucial during this and future

pandemics as well as other difficult times of social and political unrest, when marginalized communities face even greater risks and threats.

4.6 Summary of Connections to LIS

As seen in Section 4.1 above, the core concepts and propositions of TMT relate to or provide some explanation for important phenomena related to information seeking behaviors. In Sections 4.2 through 4.4, the connections between mortality salience, self-esteem, and cultural worldview to information behaviors in media, political, and health contexts. These sections argue that information behavior research and approaches to information and media literacy instruction may benefit from accounting for and exploring the impacts of mortality salience, self-esteem and cultural worldview, and other psychosocial factors. The implications and applications of TMT discussed in Section 4.5 make more explicit connections to LIS practice, education, and advocacy with a focus on social justice, inclusion, and diversity.

The increased mortality salience brought about by the new wave of fake news and propaganda, increasing political division, ongoing social injustice, job loss and economic instability, social distancing and isolation, and unremitting COVID-19 pandemic may exacerbate these issues individually or, given the interrelations between these issues, coalesce and intensify them in terrifying ways (Pyszczynski et al. 2020). Pyszczynski et al. (2020) warn that the chaos created by these issues in combination with the ubiquity of unclear and inconsistent information from government, news, and public health and science sources make it difficult for individuals to defend their self-esteem and find value or meaning in the context their worldview, leading to increasingly negative health outcomes. However, given the connections to LIS discussed above, librarians, archivists, and other information professionals, as well as LIS faculty, researchers, and students, may find that TMT can be useful for better understanding and addressing the aforementioned and other terrors.

5. Areas for Future Research

Given the applications and implications of TMT as well as its connections with LIS and related fields discussed above, the authors suggest several potential areas for future research:

(1) When information seeking, information avoidance, and library use are viewed through a TMT lens, a number of intriguing—and troubling—questions arise. Research into information-seeking behavior that uses TMT as a theoretical framework could lead to a greater understanding of how and why people do and do not seek information, particularly under frightening circumstances like the COVID-19 pandemic, and such understanding could help librarians and other information professionals develop strategies for responding more effectively to people's information needs.

(2) Relatedly, research on if or how mortality salience, self-esteem, and cultural worldviews relate to or impacts the professional practice or abilities of librarians and other information professionals should be explored.

(3) An individual's cultural worldview may cause them to prefer certain sources of information over others, especially if they boost self-esteem or come from sources that display similar worldviews. Further study on information, media, digital, political, health information and other literacy skills and practices using TMT may be useful in developing information (and other literacy) instruction that accounts for self-esteem, mortality salience, and cultural worldviews.

(4) The potential impacts and roles of diverse collections and inclusive services and outreach; culturally-diverse library, educator, and faculty staffing, hiring, and support practices; and social justice education and cultural competency training on reducing mortality salience, boosting self-esteem, and encouraging and promoting inclusive cultural worldviews in communities, LIS students, and LIS educators and scholars.

(5) As Baer (2020) discusses motivated reasoning and confirmation bias and their role in preserving Linker's (2016) 'web of belief,' the role of and extent to which a myriad of other psychosocial factors affect interactions with information deserves further scrutiny. Similarly, there is growing evidence that certain physiological factors play a role in how people interact with information (Demirci et al. 2016; Hiser and Koenigs 2018). Finally, the role of algorithms and their propensity for serving self-radicalizing content should be thoroughly examined (Alfano et al. 2018).

While the authors plan to or are currenting working on projects related to the topics above, the hope is that these suggested research areas serve as a call to action and inspire other LIS scholars to consider using TMT in their own projects or form new collaborations both within LIS and across fields.

6. Conclusions

While the authors wish the inspiration for this theory anchor paper came during less trying times, it seems that growing mortality salience has encouraged us to fall back on a shared cultural worldview that values science and collaboration, and to fortify our self-esteem in the process of exploring a new theory and thinking about how it could be useful in our field. While TMT is not expected nor intended to explain all of human motivations and behaviors, it does provide a framework for understanding why people behave the way they do in the face of mortal terror, such as that imposed by the COVID-19 pandemic. As seen above, the propositions of TMT and the research findings from Psychology and related fields argue that mortality salience, self-esteem, and cultural worldviews can impact how and why people seek, evaluate, manage, and use information in a variety of contexts. Expanding on Raber's (2003) and Nahl and Bilal's

(2007) notions of Library and Information Science paradigms, research incorporating TMT or other social-psychological theories may coalesce or renew a socio-cognitive-affective paradigm. As such, the authors hope that this theory anchor paper inspires LIS scholars, practitioners, and educators to face their fears and consider applying and exploring TMT in their work. Libraries, archives, museums, and other information organizations have long been valued sources of information and support for the communities they serve; and their work may play even more significant roles in reducing mortality salience, bolstering self-esteem, and promoting inclusive and truth-valuing worldviews.

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│ • 국문 참고자료의 영어 표기   │
│   (English translation / romanization of references originally written in Korean) │
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