EXAMINING HUMAN INFORMATION BEHAVIOR ON SOCIAL MEDIA:
INTRODUCING THE CONCEPT OF SOCIAL NOISE

Tara Zimmerman, MLIS

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APPROVED:
Suliman Hawamdeh, Major Professor
Cecelia Brown, Committee Member
Hsia-Ching Chang, Committee Member
Jamie Johnson, Committee Member
Jiangping Chen, Chair of the Department of Information Science
Kinshuk, Dean of the College of Information
Victor Prybutok, Dean of the Toulouse Graduate School
Social media information behavior is increasingly critical, impacting not only individuals and groups but the beliefs, values, and direction of society and culture. The purpose of this study was to investigate how persistent observation by members of the online network influences social media users’ information behavior, resulting in the phenomenon of social noise. Data analytics, including LDA, LSA, and clustering methodologies, were performed but could not provide information about the users’ motivations. Using an ethnographic approach, participant observations and interviews were conducted with Facebook users as they interacted with informational posts, and the data collected was coded using a recursive method. Four key constructs of social noise were identified, and sub-codes were assigned within each construct as patterns emerged, providing insight into the different facets of social noise. Additionally, in most instances more than one of the four constructs were present, layering their influence on the information behavior. Based on these findings, social media users are not always interacting with information based on true personal beliefs or desires; instead, concerns surrounding their personal image, relationships with others, core beliefs, and online conflict are influencing their observable information behavior. The results of this exploratory study provide a basis to further develop the social noise model. Qualitative data provides insight into the thinking and motivations behind social media users’ observable information behavior, specifically in the areas of cultural agency, relationship management, image curation, and conflict engagement.
ACKNOWLEDGEMENTS

I am the daughter of silent generations of people who worked the earth, raised families, lived, and died with barely any record of their existence. Although they did not leave a written legacy, they created a thread of character, resolve, and drive to succeed that has underwritten every chapter of my life. Theologian and author John of Salisbury wrote in 1159:

We are like dwarfs sitting on the shoulders of giants. We see more and things that are more distant than they did, not because our sight is superior or because we are taller than they, but because they raise us up and by their great stature add to ours.

To my parents and grandparents who made personal sacrifices that I might be here today: Yours are the shoulders I stand upon, and I hope to make you proud.

To my children and future generations: I hope to be a place you can stand and see for yourselves things I cannot imagine.

To my priceless husband: Thank you for your daily kindness, love, and support.

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CHAPTER 1
INTRODUCTION

How do members of our social circles affect the way we receive and interpret information? Do relationships and psychological needs impact our ability to separate fact from fiction? Whereas people have traditionally relied on newspapers, radio, or television news to keep them aware of important events, today a large part of the population learns about local, national, and international happenings online from innumerable, often unfamiliar, sources. In 2017, the Pew Research Center found that 20% of Americans use social media as their main source of news, while 67% use it for some portion of their news (Shearer & Gottfried, 2017). Furthermore, individuals ages 18 to 29 are four times as likely to use social media as a news source than those 65 and older, making it the most popular news source for the younger age group (Shearer, 2018).

Individual news stories are often encountered by social media users because they have been posted, shared, or commented on by a friend, relative, or acquaintance. This network-based path for receiving news has introduced a previously unfathomable level of complexity into the way many people receive news and information. Compounded by the lightning speed of online transmission and exponential increase in volume of information available, determining the quality and validity of information encountered becomes a daunting task. In order to cope with the information overload, many social media users adopt heuristics, or simple rules of thumb, to help them make these judgements. For instance, if a user has previously relied on a particular news source, they will tend to believe that source’s reporting on a new issue. Similarly, if a
user believes a friend or relative in their social network is reliable and has a similar worldview to their own, the user is likely to believe information shared by that person. Unfortunately, using heuristics in this way can cause people to make habitual, predictable errors, even when stakes are high (Kahneman, Slovic, Slovic, & Tversky, 1982). Desire for social acceptance and reliance on trusted others can lead to social media users believing and even sharing incorrect information, confirming that social conformity can hinder rational decision-making (Kwon, Stefanone, & Barnett, 2014). In 2017, 23% of Americans admitted to having shared made-up news stories online, whether knowingly or unknowingly (Anderson, 2017).

As social media, online relationships, and perceived social expectations on platforms such as Facebook play a greater role in people’s lives, a new phenomenon has emerged, introduced here as social noise. Social noise is the influence of personal and relational factors on information received via social media which can confuse, distort, or even change the intended message. The presence of social noise is demonstrated when people interact differently with information on social media than if it were encountered privately due to the awareness of being observed by peers, colleagues, family, and other members of their social network. Under the influence of social noise, a user may temper their communication based on external cues from their social network regarding what behavior is acceptable or desirable, consciously or unconsciously attempting to present themselves in a more desirable way and increase their social capital within the network. For example, if a well-respected friend posts a news article supporting a social issue that is generally in line with the users’ belief system, the user might indicate support by “liking” the post without fully understanding
the issue being discussed. Similarly, if a Facebook user strongly believes in legalizing marijuana in their state, they may not indicate this support for others’ posts about the issue because of the awareness that family members or their employer might strongly oppose the issue. In an effort to maintain important relationships and avoid controversy, the Facebook user does not indicate their true opinion on the issue. Both of these scenarios are examples of social noise influencing behavior as users encounter information on social media, and then personal and relational concerns influence how they understand and engage with that information.

Social noise defined here as being made up of four key constructs that help to explain its manifestations and impact. These constructs are: image curation, relationship management, cultural agency, and conflict engagement. Image curation is the effort by a social media user, consciously or unconsciously, to craft their online identity and how others view them. This term was selected to indicate the intentional filtering of artifacts, such as posts, photos, comments, and shared links, performed by social media users to create a personal exhibition that satisfies them (Hogan, 2010). Relationship management refers to a user’s desire to build community with individuals or groups with deep importance to them or high social value. This can be driven by the desire to be accepted or considered a member of a particular group (whether formal or informal) or to effectively connect and maintain good relationships with other people (Lin & Lu, 2011). Cultural agency refers to a user’s understanding of their roles and responsibilities within social institutions and their public engagement with issues of personal importance. Cultural agency is characterized by civic participation and is exhibited by individuals who believe in their own power to be heard and to shape culture
and beliefs (Garry, 2014). Conflict engagement is the level of social conflict with which a user is comfortable. Individuals vary greatly in their tolerance for heated discussions, disagreement, or what some might term “drama.” Barnidge (2015) found that social media use may increase perceptions of disagreement among users, and Facebook in particular has become a hotbed of social conflict.

In the last fifteen years, social media has evolved from a small network of users into a widespread, if not universal, phenomenon (Ranzini & Hoek, 2017). As of 2017, over 4.75 million items were being shared daily on Facebook, exposing users to as many as 1,500 pieces of new content each time they access their account (Fu, Wu & Cho, 2017). As individuals encounter these unprecedented amounts of information, they must determine each item’s reliability and value, often without understanding precisely how to do that. This struggle by individuals is indicative of a larger social problem in which large swaths of the population are striving to select accurate, unbiased pieces of information from the hostile cauldron of bias, misinformation, and personal opinion that permeates social media.

Information behavior is the term used in the library and information science field when studying “the human relationship to information,” (Bates, 2010, p. 2381). Bates (1999) refers to this as the “red thread of information in the social texture of people’s lives,” (p. 1048) because it includes both formal and informal information and draws from a broad range of sources in an individual’s life. For example, information defined in this way includes both a book from the library and a rumor passed along by a neighbor as both provide knowledge a user might need or want. Wilson (2000) described information behavior as the full range of human behavior in relation to sources of
information, both active and passive information seeking and use. This description is particularly applicable to social media as the structure of these platforms ensures that users are encountering information with every post they scroll through. Though users may not be seeking this particular information, they have now been influenced by it to some degree.

Social media users can indicate their response to each piece of information, and this response is visible to everyone in their social network, as well as anyone who has interacted with the post. This environment of constant bombardment with information, visible individual responses, and ongoing observation by others sets up a situation in which emotions can run high, particularly in an era plagued by deep social division and increasing concern surrounding the presence and definition of “fake news.”

Social media plays an increasingly powerful role in our culture, yet its impact on information behavior is not fully understood. No longer simply a medium for personal and social connections, social media plays a key role in marketing and communication for almost every business, political campaign, religion, or social organization, not to mention for individual users. As a relatively new communication platform, social media is changing who people connect with and how we share ideas. The field of information science should prioritize research into social media and its effects on information behavior because it represents a fundamental change in our understanding of information flow and communication. Rieh (2004) demonstrated how information behavior was changing due to in-home Internet availability and use, finding complex physical and social factors not previously observed (p. 743). Today an equally powerful, and possibly stronger, shift is occurring due to unrestricted mobile access to social
media. Social media is changing how people connect with one another and how they interact with information. This shift in behavior is of utmost importance, as outlined by Case and Given (2016) in their Continuum of Importance (p. 11), because it affects billions of people and cultures worldwide through the cumulative effect of user's individual decisions.

Problem Statement

Arguably the most distinctive and possibly the least understood feature of social media is that an individual's communication and interaction can be observed by members of their social network. This observation can alter information behavior, sometimes in a negative or non-constructive manner, influencing what the user understands, responds to, and shares with others. Large numbers of people are getting some or all of their news via social media, and social media organizations are being forced to deal with the issue of their platforms being used to spread misinformation and even disinformation on a large scale. Much of the information social media users see has been shared with them by someone in their social network. Traditional communication models do not account for this social factor, and investigating this new phenomenon is key to unraveling how it affects information behavior. Social media has been studied from a variety of angles primarily using quantitative methods. The objective of this study is to investigate how ongoing observation by members of the online network influences social media users and their information behavior, creating the phenomenon of social noise. As Rieh (2004) noted, when studying a widespread and significant change in information behavior, it is imperative to move beyond the “what” questions and focus more on the “how” and “why” (p. 752).
Research Questions

R1: What is social noise and what are the factors that contribute to social noise on social media platforms?

R2: How does social noise affect the information behavior of users as they encounter news and information on social media?

Significance

This research is a first step toward understanding the influence of social observation on information behavior, which has become a significant force in the modern world due to the rapid rise of social media for managing relationships, connecting to the world, and sharing information. With increasing amounts of news and information consumed through social media and the threat posed by “fake news,” the motivations behind why people like, comment, and share information need to be understood more clearly. Social media communication involves the discussion and sharing of information in an environment subject to the influence of online relationships and perceived expectations of those in the social network. As the influence of social media networks grows, the social dynamics they manifest become increasingly complex and unpredictable (Lymperopoulos & Lekakos, 2013). The ability to filter these potential distortions depends largely on our understanding of social noise and its underlying constructs. This is a current example of the truth highlighted by Saracevic (1992) when he pointed out that the relationship between humans and technology represents the key unresolved issues of information science.

As informed and responsible citizens, individuals should be aware if their behavior is potentially being influenced in ways they do not recognize. Their interaction with information may be influencing other people in ways the user does not realize as
well. Seemingly innocuous online behavior by individuals on social media could be contributing to larger cultural shifts in politics, social conflict, and even decisions about who we trust to deliver truthful information. Moreover, this research is important to all businesses who use social media data in their marketing plans and sales projections because it investigates the degree to which information behavior on social media reflects the users’ genuine beliefs. The current assumption is that these clicks and likes represent true preferences, but if the user is actually using information behavior to signal support for the poster or to gain approval from a valued group, this could have major implications for all types of organizations monitoring and using Facebook data.
CHAPTER 2
LITERATURE REVIEW

In researching this topic, current literature in information science, psychology, sociology, and anthropology were key in developing an interdisciplinary approach. These findings regarding individuals’ sensitivity to social expectations and their intentional use of social media to increase social capital are foundational to studying social noise.

Social Media and Relationships

In a culture characterized by constant acceleration and mobility, people often struggle to develop and maintain more than a few stable, caring relationships. By using social media and mobile technologies, people are able to interact more frequently and establish virtual relationships through ongoing conversations. Facebook has expanded ways for disparate users to express themselves and interact with one another, facilitating a novel interaction context where a wide variety of individuals who would not routinely meet face-to-face share information for a variety of purposes. This includes family, friends, neighbors, romantic interests, acquaintances, coworkers, educators, and various others (Frampton & Child, 2013; Webb, Ledbetter & Norwood, 2015). Originally positioned as a peer-to-peer platform, Facebook has expanded to encompass significant family communication (Ball, Wanzer & Servoss, 2013). While some build strong ties by using it as an additional channel to enrich face-to-face relationships (Haythornthwaite, 2002), others communicate exclusively online, maintaining primarily weak ties (Child & Petronio, 2015). For example, family members separated by geographical distance tend to maintain more diverse ties with relatives through
Facebook communication (Child, 2015).

Social engagement via Facebook is purposeful and often used to generate social capital, revealing complex links between Facebook communication, perceptions of posted content, and social capital built and maintained specifically on this platform (Su & Chan, 2017, p. 266). For the user, indicating personal reactions to others' information provides social support, affirms connections, and can affect social status (Gan, 2017; Hayes, Carr & Wohn, 2016; Kim, 2014; Sumner, Ruge-Jones & Alcorn, 2018). For example, after reading a post, users can “like” it with a thumbs-up or use one of five other emojis for indicating emotional responses to information: surprise, anger, laughter, love, and sadness. This simple capability “serves an important means for interpersonal relational management and scanning public opinions and sentiments collectively,” (Shao & Kwon, 2019, p.11). Su and Chan (2017) found that even small communicative actions on Facebook help build relationships between individuals, regardless of the initial strength of their personal ties. Even exchanges that seem superficial create social bonds, demonstrating that the sender is thinking about the receiver. These interactions foster social connectedness in situations where face-to-face relationships can be difficult or even impossible (Abeele, de Wolf, & Ling, 2018, p.7). In this way, social media applications support relationship maintenance and can build trust between individuals who are not physically close, giving users the opportunity to interact with people far outside their everyday lives.

When users perceive posted content to be socially desirable to the social network, they are more likely to respond with feedback, thus potentially extending the positive social attention generated by the post to themselves (Su & Chan, 2017, p. 267).
In this way, individuals use Facebook interactions to align themselves with valued individuals, organizations, and belief systems (Valenzuela, Park & Kee, 2009). This may be done naturally or, as users become more aware of the power of such actions, they may strategically increase certain types of behaviors to increase positive social perceptions toward themselves and build social capital (Kim, 2014; Lee, Kim & Ahn, 2014).

Research by Hollenbaugh and Ferris (2014) indicates that personality and self-esteem are primary reasons for interacting on social media. This motivation entices users to act on social media posts for the perceived rewards rather than based on true feelings toward the information, in turn affecting information sharing behavior and further engagement with social media (Pai & Tsai, 2016). Facebook users seeking to belong to a group are motivated by either a need for acceptance or for connection and caring. When seeking to belong to a group, Facebook users may either seek information about others or communicate about themselves informationally or emotionally (Seidman, 2013, p. 403). In interactions outside their local networks, individuals can present themselves in a variety of ways, choosing the most socially advantageous roles, beliefs, and behaviors (Abeele, de Wolf, & Ling, 2018, p. 9). This study demonstrates that the need for belonging is a key motivator for Facebook use, allowing users to communicate with and learn about others. These connections with others foster peer acceptance and boost self-esteem (Seidman, 2013, p. 402). Therefore, information posted and reactions given to others’ posts become an exercise in crafting the image a user wants to portray, both online and in the real world. For example, Hall and Pennington (2013) found that strangers perceive those who have a
high number of likes on their posts to be more extroverted. In this way, social media communication gives the users the ability to strategically brand themselves (Shao, 2009), creating a socially attractive image through a process of strategic reactions and self-disclosures.

Social media users report perceiving more social support from higher numbers of reactions to their posts (Wohn, Carr & Hayes, 2016). One study found that users anticipate likes or reactions to their posts from those whose posts they have liked previously, indicating reciprocal likes as a social nicety and expectation in some situations (Hayes, Carr & Wohn, 2016). In this way, the number and types of reactions a user’s post receives can become an indicator of social status to the user (Kietzmann, Hermkens, McCarthy & Silvestre, 2011; Scissors, Burke & Wengrovitz, 2016).

Social Media and Society

In 2003, Raber stated that “The social and technological cannot be regarded as autonomous realms of human existence,” (p. 214), and this is particularly true of social media today. Social media use is restructuring society by changing the everyday information behavior of billions of people (Abeele, de Wolf, & Ling, 2018). Platforms such as Facebook, Twitter, and Instagram are designing new ways for people to interact with information and with one another (Abeele, de Wolf, & Ling, 2018, p.125). These social structures inherent in the technology act as templates for human activity as they are embedded into users’ lives. Due to the increasing use and prevalence of these platforms in everyday life, social media has become a more powerful information force than previously imagined, affecting not only information diffusion, but opinion formation and even voting preferences (Lymperopoulos & Lekakos, 2013). With information
flowing through interpersonal contacts (Cappella, Kim & Albarracín, 2015), media and interpersonal influence increasingly intersect (Cappella, 2017, p. 555). The strong linkage between a Facebook users’ online and offline lives makes communication blunders or mistakes even more high stakes. Now social expectations arise and play out online for all the user’s family, friends, and connections to see (Su & Chan, 2017). In this way, Facebook and social media in general are redefining the framework of social power (Abeele, de Wolf & Ling, 2018).

Relationship management and self-presentation are powerful motivations for using social media (Fogues, Such, Espinosa & Garcia-Fornes, 2015). Miller, et al. (2016) assert that social media is used to increase social status or popularity, affiliate with desired or prestigious groups, and maintain existing relationships. Posting photos, profile information, and personal updates are some of the ways a user might present themselves to their online network. Research shows this type of disclosure is often driven by desire for popularity (Christofides, Muise, & Desmarais, 2009; Utz, Tanis, & Vermeulen, 2012). Self-presentation is particularly important to people who closely tie their self-esteem to making a positive impression on others, and these users are more likely to manage public perceptions strategically (Rui & Stefanone, 2013). Extraversion is a predictor of this type of strategic self-presentation, meaning that extraverted individuals can be more comfortable expressing feelings openly to others (Seidman, 2013, p. 405). Individuals who are highly agreeable also tend to have high belongingness motivations and may use Facebook to help meet this need (Seidman, 2013, p. 405).

Expression of alternative or hidden selves is prevalent on social media as these
digital formats provide a more comfortable way for those with social anxieties to express hidden characteristics they would not normally mention online (McKenna, Green, and Gleason, 2002). Social media fosters a new type of social relationship that is not limited by geography, potentially connecting users with other like-minded individuals all over the world at any time of day or night. Outside the bounds of family, friends, and social connections, users can present themselves in a variety of ways through these interactions with others, assuming any social role they desire. Expressing a hidden or idealized self may be done alongside presentation of the actual self online (Seidman, 2013, p. 402).

Studies of social media focus on the extensive networks of connections between users as well as the levels of interaction and influence patterns within them (Cappella, 2017), and Facebook represents a unique context in which people who would likely never meet in person are interacting and sharing information (Frampton & Child, 2013; Webb, Ledbetter & Norwood, 2015). Frequent social media users have a strong sense of identification with their social network (Warner-Søderholm, Bertsch, & Søderholm, 2018). As they identify more closely with their social network, they tend to believe that information shared within that network reflects common goals, values, and beliefs (Warner-Søderholm, Bertsch, & Søderholm, 2018). In this way, Lymperopoulos & Lekakos (2013) point out that users’ opinions affect their connections, and their connections, in turn, affect their opinions. They go on to note that the unique qualities of social media cause “a host of complex social dynamics such as opinion formation, spread of ideas, influence, epidemics, and communication formation among others,” (p. 125). As social networks become increasingly far-flung and include people and
organizations that individuals do not know in person, these influences become murkier.

Social media platforms, like other online environments, allow users to seek out and engage with like-minded others (Garrett, 2009a; Garrett, 2009b), reflecting the selective affiliation thesis that people tend to choose communication partners with whom they share beliefs in common (Lazarsfeld & Merton, 1954). Garrett (2009b) found that people use social media environments to increase exposure to information they are prone to agree with as well. This might be done by liking particular pages or joining specific groups organized around a topic of interest or a particular way of thinking the user enjoys. The work of Catanese, De Meo, Ferrara, Fiumara, and Provetti (2012) confirms this type of clustering and “small world” structure in Facebook networks. These findings, however, conflict with other research (Kim, 2011; Lee, Choi, Kim, & Kim, 2014) which found social media use is generally correlated with exposure to more diverse views. Research on Twitter may help to explain some of this dichotomy, finding that political discussions tend to have high levels of interaction between like-minded users, while non-political discussions of news events contained interactions between people with a broader array of ideological preferences (Barbera, Jost, Nagler, Tucker, & Bonneau, 2015; Himelboim, McCreery, & Smith, 2013).

The whole of a social media users’ connections to individuals, groups, and pages they Like or follow is considered that user’s network; however, the term “network” also is used on a broader basis to refer to the pattern of connection between users, how densely they are interwoven, and how they facilitate further outside connections. Social media networks are systems with ongoing function and growth depending on self-organization, hierarchy, and resilience (Mangal, 2013). In densely connected social
networks, information sharing increases among members, is more homogeneous, and is more impactful (Cappella, 2017). In a network with more loosely-knit connections, users encounter ideas from a wider range of sources and may, in turn, share those ideas with their personal network (Abeele, de Wolf, & Ling, 2018). As trust in traditional societal authorities such as the government and mass media erode, individuals often must decide for themselves what to believe, and online social networks are strong influencers in these decisions. In this way, social media is affecting not only individuals’ connections with others, but the impact of those interactions on society at large. As Torres, Gerhart, and Negahban (2018) point out:

While message manipulation is not a new phenomenon, the social media technologies that spread these messages have dramatically increased its impact on our society, and its effect on our daily lives is becoming more noticeable. The operation of a social media platform, to a large degree, is a function of the engagement and participation of its members. Because individual network members make decisions about whether or not a given news item should be propagated, more clearly understanding the process by which that decision occurs and its impact on associated behaviors such as verification are critical to understanding interactions within social media environments (p. 79).

Social media users leave digital footprints which are tracked and mined for personal information, and this data is often used or sold for unstated purposes (Van Dijck, 2014). Corporations use users’ information to further their business, “selling” audiences to advertisers, leveraging customer reviews as sales tools, and otherwise appropriating users’ ongoing connectedness to increase their bottom line, often without individuals’ knowledge or consent (Abeele, de Wolf, & Ling, 2018). Complicating the situation further, “social surveillance” (Marwick, 2012) takes place as users monitor one another, highlighting the power dynamics inherent in each online relationship (Abeele, de Wolf, & Ling, 2018). In fact, Serrat (2017) suggests that an information revolution has
brought about new economies “structured around data, information, and knowledge,” (p. 39), shifting power from states, institutions, and corporations to the social networks that structure society.

Social Media and Information Behavior

Since the early work on information behavior in the 1980s, research in this sub-discipline of information studies has grown and evolved. Originally focused on the information needs of scientists and engineers, studies were almost exclusively quantitative and pragmatic, identifying everyday behaviors and challenges in these specific contexts (Wilson, 2008). Over time though, the study of information behavior has become more theoretical and qualitative, with less focus on work contexts and more focus on everyday life information behavior. Lacking temporal and spatial boundaries, social media use constitutes everyday life information seeking (ELIS), not being limited to school, work, or other specific contexts (Savolainen, 1995). Facebook interaction is centered around information of all types and not focused on any particular subject or audience (Holton & Lewis, 2011). Furthermore, the structure of social media’s information sharing is dependent on the preferences and choices of the users themselves. As Bechmann and Lomborg (2013) point out, social media platforms rely on a decentralized sharing structure rather than creating their own content or disseminating it directly from media companies. Instead, they depend on user-generated content shared through individuals’ social networks. However, a wide variety of companies and organizations use social media to spread their messages to the public (Oh, Agrawal & Rao, 2013), whether directly through ads or indirectly through paid content disguised as news or other forms of information (Men & Tsai, 2012). News
organizations actively use social media as well to share headlines and drive people to their websites (Messner, Linke & Eford, 2012).

Because of the structure of online social networks and the ease of sharing, information spreads very quickly regardless of its source or validity (Oh, Agrawal & Rao, 2013; Fenn, Ramsay, Kantner, Pezdek, & Abed, 2019). This new technology has resulted in a massive increase in quantity of information to which people have access but also to a troubling decrease in quality of information. Torres, Gerhart, and Negahban (2018) state that, “This paradigm shift has fundamentally altered both the quantity and quality of news items that individuals encounter and dramatically increases the probability that an individual may encounter, and potentially spread, fake news” (p. 80). People often encounter false or misleading information disguised as facts, then unwittingly share this within their online network, thereby perpetuating the spread of “fake news”. While manipulation of information and purposeful use of misinformation have always existed, social media and its dramatic increase in popularity have magnified the impact of false information in our society. As individual Facebook users decide whether to believe and share each item of information, understanding these issues of trust and sharing behavior are crucial (Torres, Gerhart, & Negahban, 2018). Lymperopoulos and Lekakos (2013) believe that treating and studying social media networks as complex, adaptive systems with dynamic feedback loops will help foster understanding of the social phenomena they are creating.

In daily life, people strongly rely on second-hand information, whether via other individuals or documents (Buckland, 2012), and the same is true on social media. One of the greatest challenges presented to users of social media is knowing which
individuals, groups, and documents to trust. Personal trust in people and information on social media is increasingly essential to users’ beliefs and behavior (Warner-Søderholm, Bertsch, & Søderholm, 2018). As Patrick Wilson (1977) pointed out, public knowledge does not always equal truth, and “costly misinformation is a special case of costly ignorance,” (p. 63). This is of utmost consequence in the U.S. as “a society that values the free flow of information as central to its identity as a democracy,” (Raber, 2003, p. 12).

Information is powerful and can be used for a variety of purposes to influence humans. If information is created, collected, and packaged with full awareness that it is information and will likely have certain effects (Roberts, 1976), then it is vital to consider how that information is socially constructed. Information is a vital tool used in struggles between diverse groups and organizations. It can “define reality in ways that privilege or challenge the ideas, knowledge, and values that make sense,” (Raber, 2003, p. 210) to different audiences. Social media is not a level playing field in which all users see the same information. This problem begs larger questions about the nature of various information sources, how to determine their value, and even who benefits from these disparities. Answering these questions has implications regarding social and even political power (Raber, 2003). How are local, regional, national, and international groups using social media information to further their own objectives?

One of the purposes of information science is to “contribute to conditions of rationality in human affairs by rationalizing the use of information in human affairs,” (Raber, 2003, p. 20). Raber recognizes the social and political context of information, saying:
The examination of information needs suggests that something greater than individual interest may be at stake...we come very close to explicitly identifying information as a social phenomenon and potentially as a political one as well. By suggesting that information needs are not unconditioned expressions of free will, but at least partially determined by the social/historical identities with which we personally engage, we come close to locating the political context of information (p. 205).

Due to the nature of social media, all users are potential information sources as they share, comment, or react to information they encounter. In this way, social media users become news sources by sharing posts they see with others. Organizations or individual users promote stories that support their particular ideology or agenda and encourage members of their social network to do the same, causing information to spread virally regardless of its reliability or truthfulness. Exposure to this wider range of connections and information means that in addition to managing all aspects of their online and offline lives, users are now tasked with determining the truth and reliability of all the information they encounter on social media. This pressure to make continuous critical judgements about the value and truthfulness of streaming information puts tremendous responsibility on individuals. Many users are not aware of this responsibility, but those who are can feel powerless to understand who is distributing the information and what their goals are; this can result in stress as users struggle to understand exactly with whom they are interacting (Balmas, 2014). Rubin (2019) described this conundrum well:

Few news readers can spare the time and energy to fact-check every piece of information they come across (Chen et al., 2015b), it is simply impossible under the current information overload conditions...Disinformation and misinformation are pervasive in unregulated social-media environments which are used habitually for obtaining news as of 2019. In addition, the news readers may lack skills, time, or energy for fact-checking and may be prone to truth-bias (p. 1022).

Zipf’s principle of least effort (1949) has been observed repeatedly in human
information behavior, verifying that access and ease of use are more important to people in general than quality of information (Bates, 2010). Overwhelmed by this deluge of information and confused about who to trust, people tend to rely on shortcuts to determine what information is valid. For example, the more social recommendations and shares an item has, the more people tend to believe it (Xu, 2013). Using this heuristic of viral or popular information being true, individuals may unwittingly believe powerful corporations or organizations who are distributing information for profit or nefarious motives, and this can have macro-level societal effects.

Research suggests that the steps users take to verify accuracy of news or information received on social media is heavily dependent on who is posting the information (Zubiaga & Ji, 2014). Trustworthiness of the poster is a key factor in a user's decision to engage with information on social media (Leung, Law, van Hoof & Buhalis, 2013). Fallis (2004) found that information is often trusted implicitly when it is received from a trusted source, based on that person’s consistency and history. Beyond personal relationships, trust is established through knowledge, specialized credentials (McKnight & Chervany, 2002), authority (Shieber, 2015), the appearance of neutrality, and being unbiased (Fallis, 2004). Moreover, if the person posting or sharing an item is trusted or admired, the receiver is more likely to engage with the information - liking, commenting, or sharing it themselves (Leung, Law, van Hoof, & Buhalis, 2013). Nefarious sources frequently use one or more of these techniques to add weight and believability to the misinformation or disinformation they distribute. “Given that people tend to share interesting information to maintain social relationships or to manage their impressions, information that receives more likes may subsequently be shared more often,” (Fenn,
Seidman’s (2013) research indicates that emotional factors affect social media information behavior as well, potentially influencing what users say and how they relate to others. As cited previously, self-esteem is one of the primary reasons many people interact on social media (Hollenbaugh & Ferris, 2014), while truth and accuracy of information do not appear to be primary considerations. Cappella (2017) draws on the research of Berger (2014) in discussing four key motivations for sharing information, both online and offline: self-enhancement, strong emotion (positive or negative), utility, and accessibility (Cappella, 2017). The number and type of reactions to a Facebook post are seen as visible indicators of social status, so users whose posts elicit a higher number of likes are perceived to be more extroverted and more likeable (Hall & Pennington, 2013). People want more reactions to their posts because this signal higher levels of social support (Wohn, Carr & Hayes, 2016). Research indicates that people are using their information behavior on social media to strategically brand themselves (Shao, 2009), identifying with desirable people and ideas while distancing themselves from those they do not want to be identified with (Kietzmann, Hermkens, McCarthy & Silvestre, 2011; Scissors, Burke & Wengrovitz, 2016).

People use Facebook to scan public opinion by reading what their peers have to say on issues of the day (Shao & Kwon, 2019), and because of the tendency to believe information from trusted others, social media participation can affect users’ perceptions and understanding of critical elements of society including current events, politics, and religion. Because Facebook profiles connect to users’ identities, the use of this platform strengthens the connection between online and offline identities. Consequently, there
are higher stakes tied to self-presentation and postings on platforms like Facebook that
directly link online personas with real-life social networks (Ranzini & Hoek, 2017).
Facebook users’ behavior is impacted by social expectations and used intentionally to
generate goodwill within the social network (Su & Chan, 2017). They also determine
that users respond differently to information based on who posts it, strengthening the
premise that social expectations, self-presentation, and relationships within the social
network can drive behavior.

By examining what types of social media posts illicit the most engagement
versus what types receive relatively little attention, Su and Chan (2017) illuminate how
users align themselves with positive information and distance themselves from that
which is negative or potentially controversial. The study finds that users interact more
with posts concerning others and external matters versus personal matters. Posts
sharing information and expressing opinions are more likely to receive positive
responses than personal self-presentation posts, but posts that contain intense
conversations or could potentially cause arguments are not favored. This includes all
types of complaints and political opinions. Interestingly, the findings imply that this type
of controversial content can damage relationships between Facebook connections with
weak ties but will not influence those with strong connections. Therefore, users may
view content differently when posted by people of varying degrees of closeness to
themselves (p. 267).

The idea of being watched has a direct impact on how individuals present
themselves on social media. Without realizing it, users often post or comment on
Facebook with an “imaginary audience” in mind, this being all the people in the network
who they believe will read and react to their posts (Ranzini & Hoek, 2017). This imaginary audience impacts users’ information behavior as they consider all the individuals who might read and respond to their post. While Facebook users may only think of their friends as the audience when posting a message, anyone connected to any of those friends could also see their communication as well. Users who are sensitive to others’ evaluation and potential criticism (whether real or imagined) must determine the appropriate disclosure strategy in their Facebook communication (Ranzini & Hoek, 2017, p.232).

Realistically, when posting a message on social media, a sender does not know who might see the message, due to its visibility to the social networks of anyone who responds to the message. Without the using being aware, third-party entities outside the network, such as potential advertisers, often have access to the message. In this way, interpersonal communication often becomes public information and can influence countless people beyond the intended audience. Therefore, thinking strategically about what information should be communicated to specific others versus communicated broadly is of crucial importance (Cappella, 2017).

Sending effective messages depends on knowing the audience, and the structure of social media makes this extremely difficult to do. When messages meant for one audience are received by those outside the targeted group, misunderstanding is likely. This can cause conflict, both interpersonally and on a larger scale. The decision by a receiver to share a message with others is no longer simply a personal decision but has widespread social implications (Cappella, 2017). As early as 2013, researchers noted that social media served as a platform for individual expression and conversation
as well as public dialogue (Lymeropoulos & Lekakos, 2013). Communication intended for an individual or small group could easily "go viral" and be broadcast far beyond an individual's social network, turning interpersonal communication into public information and resulting in what Cappella (2017) terms "macrosocial influence," (p. 549).

Historically, interpersonal communication was a unique message directed toward a specific receiver while mass communication was one, undifferentiated message sent to a large number of receivers, such as in broadcast television or radio. Social media posts on Facebook and Twitter represent a strange hybrid of these two communication types, effectively blurring the line between mass communication and interpersonal communication (Cappella, 2017). Stoycheff, Liu, Wibowo, and Nanni (2017) also recognize that social media is bridging the interpersonal-mass media divide.

As noted by Benczur (2003), communication’s transformation into digital signals can be dangerous because those signals take on a life of their own. By monitoring the posts, clicks, photos, and locations of users, social media platforms and their business partners gather huge amounts of personal information from users without their knowledge or consent. Foucault (1995) refers to this as the panopticon method of surveillance, in which individuals are treated as objects to be observed in a one-sided power relationship. Corporations use this information for ambiguous and unstated purposes (Kim, 2018), yet the power wielded by social media platforms is automated and decentralized, making it difficult to criticize or even identify. What is certain is the informatic chaos and confusion bred by the meteoric rise of social media use in the modern world. Lymeropoulos and Lekakos (2013) observed, "In a society where social interactions obtain a global dimension due to the increased mobility of people and
proliferation of social networking tools which keep citizens in a perpetual contact, complexity and unpredictability rises at a rate faster than ever before,” (p. 124).

Related Theories

Information Encountering

Because social media originated as a place for friends to connect on a personal basis, it is not generally regarded as a source for seeking out needed information. Instead, information is most often encountered by users as they scroll through their accounts, seeing what friends, acquaintances, or advertisers have posted. Individuals also see information their friends have commented on or responded to, meaning they see posts from friends of friends. Based on Erdelez’ (1997) pioneering work on this serendipitous way of accessing information, people have different perceptions of their experiences with information encountering. Erdelez found there were four general groups of people in this regard: nonencounterers, occasional encounterers, encounterers, and Super-encounterers. Based on these definitions, social media users are, “Encounterers – respondents who often experienced information encountering, who were aware of the chain of coincidental situations, but did not perceive how these connected to their information behavior,” or even “Super-encounterers – respondents who very often experienced information encountering, who relied on it, and considered it as an integral element of their information behavior” (p.417).

Shannon’s Mathematical Theory of Communication

Claude Shannon’s (1948) mathematical theory of communication (Figure 1) represents the most well-known and widely accepted model for information flow in the field of information science. Considered the “Magna Carta of the information age,”
(Verdu, 1998), Shannon’s model uses the basic elements of information source, message, transmitter, and signal to illustrate the sending of information, while received signal, receiver, message, and destination indicate the process through which information is received. Between the two sides of the model, the element of noise intervenes, previously designated as either physical or semantic interference which can obscure, distort, or even change the intended message.

**Figure 1.** Shannon’s model (1948).

Before Shannon developed this theory, it was widely accepted that higher volume and speed of communication increased the likelihood of error (Drozdova & Gaubatz, 2016). By calculating channel capacity required for transmission, Shannon (1948) made it possible to facilitate transmission with only the smallest margin of error. This understanding set in motion the technological breakthrough that today allows massive amounts of data to be sent and received almost instantaneously with virtually no error (Drozdova & Gaubatz, 2016). Much of Shannon’s work centered around entropy and reduction of error, while at the same time making it possible to increase speed and volume of communication exponentially; this development, in turn, has
resulted in one of the biggest communication challenges of our time: understanding social media communication.

Shannon’s work grew out of communication theory, evolving into a “broader coherent field with diverse applications and growing use,” (Drozdova & Gaubatz, 2016, p. 33) and continues to shape communications, data management, and other types of information technologies (Verdu, 1998). Today this theory is used in fields as diverse as oil exploration and biomedicine, as well as the social sciences (Drozdova & Gaubatz, 2016); however, it is inadequate when applied to social media communication because it fails to account for the differences inherent in this medium that have not been encountered previously.

Bandura’s Social Cognitive Theory

Middleton, Hall, and Raeside (2019) noted that, “In the case of information science, with its strong interests in behaviors associated with information use, the application of theory that originals from psychology is not uncommon,” (p. 927). The second key theory used to undergird this study is Alfred Bandura’s (1986) social cognitive theory (Figure 2), in which he asserts that personal agency (freedom to choose) and social structure operate in tandem as causal structures for an individual’s behavior. Just as people keenly observe their peers for clues regarding acceptable behavior in the physical world, the same is true with social media. Users identify with valued groups or individuals by increasing acceptable behavior and decreasing unacceptable behavior. Bandura (2001) expanded this theory to include mass communication, saying that the evolution of technology and growing influence of mass media made understanding this theory increasingly pertinent.
Social cognitive theory is tied even more closely to social media interaction. As people encounter information on social media, they combine their own personal values with the perceived values of members of their social network to determine how to behave toward that information. This has important implications for how information encountered via social media is accepted, believed, and potentially shared by individuals.

Theoretical Justification

Shannon’s model of information theory and communication along with Bandura’s social cognitive theory acknowledges the influence of the social network and gives insight into the psychosocial mechanisms that can influence social media information behavior. These two theories have been used together previously in the work of Benjamin Nye, beginning with his doctoral dissertation, “Modeling memes: A memetic view of affordance learning,” (Nye, 2011) and continuing through his 2014 paper, “Cognitive modeling of socially transmitted affordances.” Using his background in computer engineering, Nye combined Shannon’s information theory with Bandura’s
social learning theory to create his systems model for meme transmission. In this effort to demonstrate how memes reproduce and spread through a culture, Nye used Shannon to illustrate the outward process of communication alongside Bandura’s theory to illustrate the internal processes and motivations of the individual, noting that, “These theories provide complementary processes for examining the flow of information between and within individuals, respectively,” (2014, p. 308).

![Diagram of Nye's systems model for meme transmission]

**Figure 3.** Nye’s (2014) systems model for meme transmission.

In this way, Nye models how humans gain information from other members of society, replicating and communicating it in turn. He notes that while he combines social cognitive theory and information theory specifically to model how memes reproduce and spread through culture, this idea could be applied to most observable behaviors. Nye’s work has been used to further the study of cognitive architecture from the perspective of social learning (Best, Kennedy & Amant, 2015), as well in recent studies of multi-agent models (Sotnik, 2018). These are systems in which multiple intelligent agents are interacting, and are usually studied from the technological and hardware standpoints;
however, Nye (2014) identified social influence as a multi-relational construct, pointing out that there is “An important competition in social learning: the use of limited resources to pay attention to certain behaviors rather than others” (p. 305).

Nye recognized that “Certain environments encourage certain behaviors and make social learning of those behaviors more likely,” (2014, p. 305). Social media is an environment that encourages engagement with others and the sharing of information, creating a rich ecosystem for social learning. As Shannon (1948) recognized entropy in his communication model by identifying physical and semantic noise as possible interference with direct transmission of a message, users’ personal and relational concerns introduce disorder into social media communication. Because social media is an open system, both internally produced entropy and external entropy can affect it, often in the form of noise (Bailey, 1990, p. 83). Figure 4 illustrates the sending and receiving of information on a social media platform, acknowledging observation of this action by the social networks of both parties.

**Figure 4.** Noise as present in social media information behavior.

This social noise can cause information to be distorted, obscured, or even altered when exchanged via social media platforms where interactions are observed by other members of the social network. Moreover, Bandura (2001) pointed out that when people encounter information online, they use their own personal values as well as the perceived values of others in the social network to determine how they should behave.
toward that information. Personal and environmental factors emerge influencing the receiver’s perception of the incoming information and potentially causing distortions. Nye pointed out that, “Social learning of behavior occurs as a result of directed communication from an adopter to a new agent” (2014, p. 304). These interactions are affected by homophily (the tendency to seek out others similar to ourselves) social relativity (our perception of ourselves in relation to individuals and groups around us), and information-seeking (Schreiber and Carley 2007). The works of Shannon and Bandura provide the foundational concepts of social noise. Overlaying Shannon’s model with Bandura’s social cognitive theory gives insight into the psychosocial mechanisms that influence social media information behavior.

Social Noise Conceptual Model

The conceptual social noise model (Figure 5) introduced here represents and characterizes this unique and relatively new aspect of human behavior. The model illustrates information being received by the individual, then being filtered through various personal and environmental factors that impact how they understand the information. Information in this context is a broad term. It includes verifiable facts as well as nontechnical knowledge and signals that communicate societal norms and values (Bailey, 1990, p. 96-97). In addition, for the purposes of this model, information may also include misinformation or disinformation, as the “truth” of posts is not assessed, only the users’ responses to them. To quantify these relationships, I identified four different constructs namely image curation, relationship management, conflict engagement, and cultural agency (each explained below) in which participation in social media and observation by other members can influence information behavior.
The social noise model serves as the theoretical framework for the proposed study.

Figure 5. Social noise model.

Proposed Construct: Image Curation

In the context of social noise, image curation can be described as the effort by a social media user to craft their online identities. This term indicates the intentional filtering of artifacts performed by social media users to create a personal display that they find pleasing (Hogan, 2010). Artifacts include posts the user has made, comments, likes, or photos and videos in which the user is tagged. Because social media users are always somewhat aware of being observed (Marwick & Boyd, 2011), this perceived audience influences how they present themselves (Ranzini & Hoek, 2017). Some of the earliest academic work dedicated to social media identified impression management as
a crucial motivator for specific online actions and relationships (Boyd & Ellison 2007; Donath & Boyd, 2004). This is similar to Ervin Goffman's idea of impression management as the theatrical performance of an identity, also referred to as the dramaturgical model (Goffman, 1978), which has been frequently employed to explain social media-based self-presentation (Ellison, Heino & Gibbs, 2006). People select impression management strategies based on social network variables such as diversity and audience characteristics (Goffman, 1978). For example, research shows that people share information they believe to be interesting, funny, surprising, or simply extreme to gain the attention of and improve social bonding with desired others (Berger, 2014). In addition, the construct of image curation aligns with the early sociological work of C. H. Cooley and his theory of the looking glass self (1902). In this theory, Cooley posited that humans are shaped by the way they believe others see them; thus, society shapes individuals’ identity, growth, and behavior (Cooley, 1998). Cyber-psychologist Mary Aiken took this idea further and applied it to social media by pointing out that because social media is meant to be accessible to the public at all times, users believe they must portray themselves in an idealized way. She calls this the “cyber self”, indicating it is the version of themselves that social media users want to portray online, and it is based on the judgement of others (2016).

In 2010, Hogan deemed online impression management an effort in curatorship versus a performance, pointing out that users filter their artifacts to create a personal exhibition that satisfies them. In this sense, impression management is an attempt to control images as they are projected in social interactions, whether those interactions are real or imagined (Schlenker, 1980). Users who want to make and present their self-
image via social media reveal themselves through posts and comments (Min & Lee, 2011). Research has shown that social media users exhibit their aspirations and desired personal images in different ways depending on local culture (Miller, et al., 2016) and that cultural differences determine how social media is used (Karimi, Khodabandelou, Ehsani, & Ahmad, 2014). The “reduced cues” of social media communication make this a particularly fertile ground for managing specific impressions of oneself (Ellison, Hancock, & Toma, 2012).

As social media has provided users with increasingly sophisticated tools to differentiate and segment their audiences (Vitak, Blasiola, Patil & Litt, 2015), impression management has become an effort in targeting the appropriate audience and sending out the most advantageous self-message. Social media is frequently used as a type of social surveillance in order to compare oneself with others (Toma, 2016) and to maintain existing relationships (Ellison, Vitak, Gray & Lampe, 2014). Rosenberg and Egbert (2011) identified four common techniques of impression management: self-promotion, manipulation, damage control, and role modeling. Vitak, Blasiola, Patil, and Litt (2015) identified two types of impression management carried out by Facebook users: content-based impression management, in which users manipulate the type of information they share; and network-based impression management, where the effort is instead aimed at controlling or manipulating the audience (p. 1498).

Proposed Construct: Relationship Management

As a construct of social noise, relationship management refers to a user’s desire to build community with individuals or groups with high social value. This can be driven by the desire to be accepted by or considered a member of a particular group (whether
formal or informal) or to connect with one key individual. Relationship management also encompasses the effectiveness of efforts to connect with other people and maintain good relationships (Lin & Lu, 2011), whether exclusively online or as a supplement to offline, face-to-face relationships. Relationship management is seen in close relationships, such as family and friends, but also in less personal relationships, such as with co-workers, neighbors, and acquaintances. It may even be seen in broader groups the user identifies with, such as political parties or social movements. Warner-Søderholm, Bertsch, and Søderholm (2018) believe that one reason people are so drawn to social media is the deep need for connection with others in an increasingly busy world filled with isolated, stressed individuals.

Ma and Chan (2014) found that people choose to share novel, interesting, or relevant information as a way of maintaining online relationships, but users also self-censor content that could have negative social consequences (Batenburg & Bartels, 2017). For example, Miller, et al. (2016) reported that regardless of country, culture, and living environment, political participation via social media is strongly influenced by social relations, as users do not want to damage relationships with family and friends. This behavior is a reflection of the spiral of silence theory (Noelle-Neumann, 1974) in which the fundamental desire for social approval influences an individual’s willingness to share feelings, opinions, or thoughts. Bailey (1990) noted that social groups “monitor and maintain the boundary characteristics of group members,” (p. 280), and that crossing group boundaries can be detrimental the individual’s position in the group (p. 281).

Proposed Construct: Conflict Engagement

In the context of social noise, conflict engagement is the level of social conflict
with which a user is comfortable. Social media has become a hotbed of social conflict, and scholars are increasingly studying this phenomenon. The low cost of social media communication, in terms of both time and money, as well as its unprecedented speed are two of the reasons that researchers believe conflict seems to thrive on platforms like Facebook. Research has shown that micro conflicts tend to occur when entropy levels are high (Bailey, 1990, p. 83). While some individuals value social order and “not rocking the boat,” others generally believe conflict drives society to change, so conflict is welcome (Weber, 1947; Marx, 1956). Some people are more comfortable with the confrontational style that is often seen on social media while others withdraw from it, possibly even avoiding sharing opinions or comments they believe might cause conflict. Barnidge (2015) found that social media may increase perceptions of disagreement among users even when none exists.

In his study of online political conflict, Zeitzoff (2017) created a four-point framework to describe how and why conflict seems to thrive on social media. First, it reduces the cost of communication, and second, it increases the speed and spread of information. Third, users strategically interact and adapt to changes in communication technology, and finally, the new data provided on social media are vital information resources for users, influencing the conflict itself. Hilbert, Vásquez, Halpern, Valenzuela, and Arriagada (2016) found that many types of accounts interact during online conflict, including voices focused directly on the conflict, media outlets, amplifiers from the public sphere, and regular people, including mostly passive audiences.

Proposed Construct: Cultural Agency

As a construct of social noise, cultural agency refers to a user’s understanding of
their roles and responsibilities within society and its institutions as well as their perceived ability to affect positive social change. Agency itself is defined as the “capacity of individuals to act independently and make their own free choices,” (Barker, 2005, p. 448). In a broader sense, agency can be understood as autonomy and personal power in representing oneself in larger contexts, such as national political and cultural arenas (Findley, 2005). Within this context, agency is closely related to the idea of self-efficacy. A term often used within social cognitive theory, Middleton, Hall, and Raeside (2019) defined self-efficacy as, “the personal belief that a task or goal can be successfully achieved within a particular setting,” (p. 928).

This construct of cultural agency within social noise is partially rooted in interest theory, which is “the dominant theory of motivation in practice anthropology,” (Ortner, p. 151). In this theory, a rational individual is assumed to pursue what they want, often somewhat aggressively, with their goal being something materially, socially, or politically useful to them within their particular cultural context (Ortner, 1984). This is not to say that interest in a topic is the only, or even the primary, motivator for an individual; it is simply being recognized as a driver for social action. Applying interest theory to social media, we find that users will mobilize their cultural capital in certain situations where they feel strongly about an issue or are confident in the outcomes.

For the purposes of this research, cultural agency is exhibited by social media users who believe in exercising their own power to shape norms, values, and beliefs, and who feel comfortable stimulating civic debate and advocating for strongly held beliefs (Sommer, 2006). Personality traits such as extroversion, self-esteem (Seidman, 2013), and even narcissism (Davenport, Bergman, Bergman & Fearrington, 2014)
influence an individual’s understanding of their personal role in society, and their exercise of cultural agency. Other elements, such as gender identity (Haferkamp, Eimler, Papadakis & Kruck, 2012; Tifferet & Vilnai-Yavetz, 2014) sexual orientation (Alpizar, Islas-Alvarado, Warren & Fiebert, 2012), and ethnic background impact cultural agency as well. For example, a transgender individual might be more likely to engage with information regarding transgender issues, and someone of Hawaiian descent might engage more with information about Hawaii or other Hawaiians.

Though roles and responsibilities differ between social institutions, groups, and classes (Weber, 1947), generally the more confident a person is in their beliefs on a particular issue, the more motivated they will be to share those beliefs with others. If someone feels it is their responsibility to help misinformed people understand the truth about an issue, they will be more motivated to communicate with them, and the opposite is true as well. The more confident a person is in their beliefs on a particular issue, the more motivated they will be to share those beliefs with others, while uncertainty on personal beliefs is less motivating. Social media users often rely on others in their network for news and information that shape their way of thinking (Warner-Søderholm, Bertsch, & Søderholm, 2018), and thus sharing information on social media can be driven by these motives and relationships.
CHAPTER 3

METHODOLOGY

Social media has been studied from a variety of perspectives; however, no research has identified social noise and examined its effects on information behavior. Review of academic research on social media reveals this as a gap in the literature. This exploratory study aims to fill that gap, using a mixed methods approach.

Phase I

The first step toward identifying factors that contribute to social noise on social media was to carry out a pilot study using data analytics and text mining. Data sets from five community Facebook groups were used to identify keywords and phrases that could be indicative of the four major social noise constructs.

Despite research suggesting Facebook is over-represented in studies of social media (Stoycheff, Liu, Wibowo, & Nanni, 2017), Facebook was selected as the social media site from which to collect data because it is the most widely used social media platform in the world, with 2.41 billion active monthly users (Statista, 2019). When studying the user-generated text of social media, content analysis and text mining are often used (Abrahams, Fan, Wang, Zhang, Jiao, 2015). Three separate methods of data analytics were performed: latent dirichlet allocation (LDA), latent semantic analysis (LSA), and clustering. LDA is a topic modelling technique which describes the distribution of words within a corpus of documents and reveals a latent, or hidden, layer of meaning in topics represented (Ganegedara, 2019). Similar to LDA, LSA is a tool for understanding large volumes of text. This text analytics algorithm processes text to reveal word correlations and unstated themes that provide insight into their meaning (Li,
For both LDA and LSA, a count frequency score was evaluated to determine the optimum number of topics. Besides LDA and LSA, clustering is another unsupervised machine learning technique often used to understand the content of large datasets. This algorithm aggregates a collection of data points based on similarities in order to discover underlying patterns (Garbade, 2018).

In validating this methodology, LDA was considered the primary technique, and LSA results were examined in relationship to it. As both techniques showed similar keywords and topics, this method was considered valuable in identifying frequently used words that indicated social noise. In addition, some of the most frequently occurring keywords were randomly selected and simple word counts in Excel were performed on the original dataset to cross-check and confirm their presence. This same approach was used to validate the clustering method, as keywords were selected from clusters and counted within the full dataset to confirm their presence and weight. Five clusters were determined to provide the best results by running several iterations with different numbers of clusters and optimizing the code based on these initial results.

Data was collected from an open dataset representing the Facebook posts and comments from five public Facebook groups serving Cheltenham Township, Pennsylvania, USA (Chirico, 2018). According to the United States Census Bureau (2020), Cheltenham Township has a population of just over 37,000, with a median age of 39.8. The median household income is $80,174, and 96.4% of people have a high school diploma or higher education. The community reports being 54.1% White, 32.6% Black or African American, 7.0% Asian, and 5.2% Hispanic or Latino, and the vast majority (85.9%) speak English as their primary language.
These pages are used by members of the community to discuss diverse subjects, from local issues like traffic and lost pets, to politics and national news. This dataset was selected because it represents a large, loosely connected social network comprised of numerous individuals with their own social networks coming together to discuss issues of personal or societal importance. These interactions are centered around various types of information but are also affected by personal and environmental factors that influence how users communicate with one another. Choosing a broad corpus such as this is key to our study because the reason for a Facebook group’s formation, whether to discuss politics, their community, or a specific health concern, affects the social structure and interaction of the group.

**Figure 6.** Data collection, preparation, and processing.

Approximately 10,000 unique comments and 10,000 unique posts from the dataset were used for analysis. The raw data was cleaned by tokenizing the text articles, removing stop words, and performing word stemming, similar to previous studies using topic modelling and clustering (Al-Daihani & Abrahams, 2016). Figure 6
illustrates the processes of data collection, preparation, and processing that were used for Phase I.

Phase II

The second phase of this research focused on observing and interviewing users of the neighborhood Facebook page for St. James Pointe, which is located on the southern outskirts of Oklahoma City, Oklahoma. Results obtained from Phase I made it clear that genuine understanding of social noise requires a qualitative approach, including not only observation of the users’ social media behavior but insight into their influences, motivations, and thinking as well. Ditchfield and Meredith (2018) state that a qualitative approach provides the best insight into users’ motivations. While the users’ interactions can easily be monitored quantitatively, the reasoning behind those choices is the key to understanding the effects of observation by others in the social network. Therefore, Phase II was conducted using semi-structured interviews with the goal of answering the research questions - identifying the factors that contribute to social noise on social media platforms as well as how social noise affects the information behavior of users as they encounter news and information on social media.

This study examines social media communication in general rather than focusing on a specific demographic group; therefore, a neighborhood Facebook discussion group was targeted as a generic sample of users and a reflection of the user group from which data was collected in Phase I. The participants for Phase II were recruited from through the St. James Pointe Neighborhood page which serves a community on the southern outskirts of Oklahoma City, Oklahoma. According to the United States Census Bureau (2020), the city has a population of 637,284, with a median age of 34.1. The median
household income is $54,034 and 86.2% of people have a high school diploma or higher education. The community reports being 67.5% White, 17.8% Hispanic or Latino, 14.6% Black or African American, and 4.6% Asian, and the vast majority (79.7%) speak English in their homes.

The St. James Pointe Neighborhood Facebook page has approximately 100 members. The group is described as “a place for members of the community to stay connected.” Members are encouraged to “share items such as get togethers, lost dogs, building updates, and city council updates.” I obtained permission from the St. James Pointe Neighborhood page moderator to post an announcement to the group briefly describing this research study and asking for volunteers to participate. The goal was to collect data from 20 to 25 participants, each of whom would be required to provide informed consent regarding issues of privacy and giving permission to record their voice and screen for the interview. Participants were assured their names would not be used in any public or published work derived from the study. To further respect the participants’ privacy and put them at ease, they were assured they could stop the observation or interview at any time if they felt uncomfortable with the process, and their information would be deleted immediately. The observations occurred at a time selected by the user to avoid disrupting their normal routine as much as possible.

Data Collection

Data collection consisted of an observation and semi-structured interview with twenty participants, providing for a focus on depth and nuance of data over breadth. I scheduled an online meeting with each individual using the Zoom online meeting software, emphasizing that the participants choose a time that most reflected their
normal Facebook behavior. At the appointed time, the participant joined the meeting from their personal computer, tablet, or phone by clicking on the link provided. I asked the participant to log in to their Facebook account and share their screen by clicking the appropriate button. I then asked the participant to scroll through their Facebook account and find three posts that contained a news article or link, then react to that post as they normally would, even if that means ignoring the post. I silently observed this behavior and made notes regarding the posts and behavior observed. Locating and responding to three posts as described took between 10 and 15 minutes for each participant.

Interview Design

After each observation, I conducted a semi-structured interview with the participant, asking a series of questions designed to detect the presence of social noise and its influence on the participants’ reactions (see Appendix A). I began by asking the participant to describe the post which they selected and the process by which they encountered the information, meaning who created the post and whether the participant was specifically tagged. This indicated whether the poster intended the information directly for the participant or whether it was simply something they posted on their account for everyone to see. The participant was asked to describe the posted information, any assumptions they initially had about it, and how thoroughly they engaged with it. They were then asked why they responded to the post as they did, whether this was sharing, commenting, liking, or simply ignoring it.

The remaining interview questions focused on the four proposed constructs of social noise and determining how they might have played a role in the information behavior. I asked participants about their relationship to the poster in order to establish
the role of the poster in the participant’s life and likelihood that relationship management influenced their response to the information. Previous research has shown that trust and admiration for someone result in higher engagement with information they share (Leung, Law, van Hoof, & Buhalis, 2013), and personal trust in people is increasingly essential to users’ online behavior (Warner-Søderholm, Bertsch, & Søderholm, 2018).

Probing for social noise related to the construct of image curation, I asked the participants if they believed interacting with this type of information affected how they were viewed by others and whether this is something they consider before responding. Facebook users’ behavior is impacted by social expectations (Su & Chan, 2017), and these questions acknowledge the high stakes of interacting on Facebook where online behavior is closely linked to real-life social networks (Ranzini & Hoek, 2017). Stemming from image curation, I then addressed conflict engagement by asking participants to assess the level of potential conflict the posted information might cause in their social network. This is an important question because social media can increase users’ perceptions of disagreement and conflict (Barnidge, 2015). I also asked if participants considered the possibility of conflict before deciding how to respond to each post, indicating their own attitude and tolerance toward engaging in conflict via social media. The social noise construct of cultural agency was assessed by asking participants if the subject matter of the posted information was a topic they were particularly engaged in. This is important because if a participant is passionate about or personally invested in an issue, they are more likely to believe in their own responsibility and power to shape others’ beliefs surrounding it (Garry, 2014). Social media users with a strong sense of cultural agency are more likely to stimulate conversation and even debate over strongly
held beliefs (Sommer, 2006).

The interview questions were designed to uncover the ways in which social noise impacts social media information behavior in terms of how the information is received, how it is understood by the participant, and how the participant chooses to act upon the information. The interview questions were repeated for each of the three posts the participant interacted with during the observation. All interviews were recorded using Zoom, labeled by date and participant number, and saved on a password-protected laptop with a full backup hosted on OneDrive.

Data Analysis

As discussed earlier, quantitative data collected from an open dataset representing the Facebook posts and comments from five public Facebook groups was analyzed using LDA, LSA, and clustering. Qualitative data obtained from observation and semi-structured interviews was analyzed using Dedoose, a platform for coding and managing data which is recommended especially for use with interview and transcription data such as this. This low-cost software is flexible, web-based, and multi-functional, offering excerpting, coding, and analysis tools. Excerpts exhibiting evidence of social noise were selected and assigned codes. “Codes are names or symbols used to stand for a group of similar items, ideas, or phenomena that the researcher has noticed in his or her data set” (LeCompte & Schensul, p. 55). Based on the ethnographic approach, a recursive method, using both inductive and deductive approaches, was used to assign codes and identify patterns within the excerpts. “Ethnographers use both induction (examining data and letting them fall naturally into chunks) and deduction (choosing concepts, then sorting data in those terms) throughout
their analysis,” (LeCompte & Schensul, p. 46). I began by assigning codes to excerpts where elements of the four social noise constructs were identified, then continued adding other codes and sub-codes as patterns emerged.

The data were reviewed and coded using content analysis, a commonly used technique for providing in-depth insight into interview transcriptions (Mokros, Mullins, & Saracevic, 1995; O’Brien, Freund, & Westman, 2014). Content analysis is a proven approach to understanding themes within any artifact of communication (Krippendorff, 1980), and is specifically recommended by Altheide (1987, 1996) for use with ethnographic techniques like the participant observation and semi-structured interview being used here.

Data from the interviews were triangulated, a standard method of validating qualitative and ethnographic data that does not require a second coder. “Triangulation…is the use of data from two or more different sources (or several different kinds of data) to corroborate what an informant has said or what an ethnographer has concluded,” (LeCompte & Schensul, p. 66). The Zoom platform automatically generates a written transcript of all recorded meetings, so I had a full transcription within 24 hours of each of the interviews and reviewed it while the substance of the meeting was still fresh. I read through the transcription, compared it to written notes taken during the session, and referenced the interview recording as needed. This triangulation of data – the interview recording, transcription, and researcher notes - ensured the coding was as accurate and unbiased as possible.
CHAPTER 4
RESULTS AND ANALYSIS
Phase I

The pilot study was carried out using data analytic techniques, specifically, LDA, LSA, and clustering techniques. (Detailed discussion of the application of these techniques are provided in Chapter 3.) The purpose for the pilot project was to help identify keywords and phrases used on social media that might be indicative of social noise. These results also provide insight into the four major constructs used to define social noise: image curation, relationship management, conflict engagement, and cultural agency. The data used in the pilot project consisted of over 10,000 posts and comments taken from a neighborhood Facebook group based in Cheltenham Township, Pennsylvania. As mentioned previously, this study is not focused on a specific target demographic because the framework of social noise applies to all social media users. The reason for the use of this sample group is because it represents a fairly generic sample of users, one that was not formed around political or cultural issues that might color the behavior of the members. A neighborhood Facebook page is organized to facilitate day-to-day issues of traffic, safety, and community issues as they arise, and as such, should not be predisposed to any particular leanings.

The latent dirichlet allocation (LDA), latent semantic analysis (LSA), and clustering methods were used to determine the word count frequency and identify the optimum number of topics. Topic modeling is a text mining technique used to identify co-occurring keywords and phrases from large collections of textual information. In the absence of clear clues or a checklist, topic modeling can be used to help reveal hidden
relationships and connections in large unstructured data sets. After running several iterations of this technique using different numbers of clusters, the version using five clusters resulted in the most natural grouping of clusters, and code was optimized based on these initial results. Number of topics for LDA and LSA were optimized in a similar way (Figure 7).

![Figure 7. Optimization of number of topics.](image)

Everyday use of words in posts and comments were analyzed for their natural meaning that might indicate the presence of social noise. The topic modelling was very helpful in identifying areas associated with the four main constructs established in this study as a basis for the definition of social noise. For example, one of the posts identified what could indicate the influence of relationship management. A user posted, “Hi Sandra, happy to help. Please give me a call at [phone number removed]”. This user was attempting to build a relationship with Sandra by using friendly words, offering help, and saying to please call him. It could be argued that this post might be an indicator of image curation as well, with the poster trying to present a friendly and helpful persona to the group. A similar example was a comment that said, “Wow. Thanks for that info.” The
 poster found information provided by another group member useful but was not required to post a thank you message. This expression of thanks was done either to foster a relationship with the poster or as part of the poster’s desired image as a polite and thankful person, or possibly both.

Another example of a post seeming to indicate cultural agency appears in a discussion regarding the rash-causing plant poison ivy growing in the neighborhood. The poster said, "No that’s an old misconception, the Urushiol is not in the serous fluid. If you still have the oil on your hand, it’s another story. I’ve been doing research on it. [link to website]." This poster found relevant information about poison ivy and clearly wanted to share it with the group. This could be an effort in image curation as well, positioning oneself as knowledgeable and authoritative on a topic. Further in that same conversation, conflict engagement was almost certainly an issue in a post which said, “My goal with posting this is not to start a debate about global warming or climate change [link to website removed].” The poster shared something he thought might be controversial and purposely stated ahead of time he did want to spark conflict in the group. This post could indicate other constructs of social noise as well, such as image curation indicating the poster does not want to be seen as someone who stirs up conflict in the group.

After validation as described in Chapter 3, results from the topic modeling were visualized to aid in identifying patterns in the data sets. For the LDA results, each topic was visualized as a bar graph. Using ocular percussion, topics were identified that might be word groups representing the influence of one of the constructs of social noise. In LDA, topics are computer-generated groupings of words or phrases that commonly
appear near one another. For example, Topic 66 (Fig. 8) appears to be a discussion of lost dogs in the neighborhood and includes words such as “help”, “please”, and “share.” These words are possible indicators of relationship management and image curation as users reach out for help from the group, ask them to share the information with others, and present their request in polite terms. These words, along with “report,” are indicators of cultural agency as users relay information to the group, presenting themselves as knowledgeable, helpful members of the community.

![Figure 8. Sample of LDA results (Topic 66).](image)

Topic 48 (Fig. 9) regards an unknown “guy” in the neighborhood and a discussion of his whereabouts. Words in the topic, such as “parking,” “lot,” “missing,” “found,” “seen,” and “hurt,” are all possible indicators of social noise in the form of cultural agency or conflict engagement.
Figure 9. Sample of LDA results (Topic 48).

The results for each of the LSA topics were visualized in bar graphs as well, providing a basic view of subjects being discussed and their associated words. For example, Topic 0 seems to be discussing the community park and an upcoming event, with words like “want,” “like,” and “thank,” possibly indicating the presence of relationship management or image curation (Fig. 10).

Figure 10. Sample of LSA results (Topic 0).
The clustering results grouped posts and comments from the dataset by inherent similarities. Visualizations of these clusters illustrate the relative cohesion between words within the text, indicating broad subjects being discussed. Five clusters were determined to provide the best results through running several iterations with different numbers of clusters and optimizing the code based on these initial results. Figure 11 shows the organizations of the data into five clusters, indicated by different colors. Distance and overlap of the data points show that Cluster 1 was the most consistently cohesive cluster, indicating a similar subject or topic being discussed. However, even after reviewing individual comments and posts that fall within the various clusters, the information necessary for identifying social noise via its four constructs was not revealed through this text mining technique.

Figure 11. Clustering results.
Overall, these topic modelling techniques provided information about the content of the dataset and subjects being discussed by the users in the form of keywords; however, they did not give insight into the tone or style of that communication, which is key to social noise. Although the results did not provide much information about semantic context of the individual words, they did help identify words in both posts and comments that were possible indicators of at least one of the four constructs of social noise. Commonly occurring words and phrases in the LDA, LSA, and clustering results are were grouped into categories and became indicators of possible factors that contribute to social noise on Facebook (Table 1).

Table 1

<table>
<thead>
<tr>
<th>Construct</th>
<th>Keywords</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Curation</td>
<td>Please, willing, join, recommend, report, thank, thx, great, help, love</td>
</tr>
<tr>
<td>Relationship Management</td>
<td>Love, want, help, please, great, thank, thx</td>
</tr>
<tr>
<td>Conflict Engagement</td>
<td>Report, just, don’t, saying, stop, call, post</td>
</tr>
<tr>
<td>Cultural Agency</td>
<td>Join, recommend, check, willing, call,</td>
</tr>
</tbody>
</table>

While the quantitative approach used in this study was good for analyzing large amounts of data, such methods lack the individual-level detail needed to accurately capture attributes needed to describe and identify the four major constructs (image curation, relationship management, conflict engagement, and cultural agency). Given the limitation of data analytic techniques using statistical methods such as word occurrences and word association, it was important to continue the study with a more
in-depth qualitative approach that would be able to address semantic aspects of Facebook posts and comments as well as the motivations behind the users information behavior that might reveal the presence of social noise.

Phase II

Observations and Zoom interviews were conducted with twenty participants as described in the methodology section. Then the data from the interviews was triangulated for accuracy. “Triangulation…is the use of data from two or more different sources (or several different kinds of data) to corroborate what an informant has said or what an ethnographer has concluded,” (LeCompte & Schensul, p. 66). The Zoom platform automatically generates a written transcript of all recorded meetings, so I accessed this transcription within 24 hours of each of the interviews in order to review it while the substance of the meeting was still fresh. I then read through the transcription, comparing it to the written notes taken during the session and referencing the interview recording as needed. This triangulation of data – the interview recording, transcription, and researcher notes - ensured the transcriptions were as accurate and as unbiased as possible. For example, during an interview, Participant 18 spoke about her "social network," but the auto-generated transcription read “sexual network,” an obvious error. By thoroughly reviewing the transcriptions alongside the field notes and recordings, I was able to correct any mistakes – obvious or innocuous - that could affect the data. I anonymized each transcription to protect participants’ identity and privacy and properly formatted it to be saved into Dedoose, a web-based platform for data management, coding, and analysis. The Dedoose software was selected for flexibility in analyzing qualitative data, including providing tools for excerpting meaningful sections of larger
documents such as interview transcriptions.

Next, the data was reviewed in detail and patterns across the data were coded using content analysis, a proven method for understanding themes from any artifact of communication (Krippendorff, 1980). Case and Given (2016) note that when using content analysis, “either the manifest content (i.e., surface features such as words) or the latent content (underlying themes and meanings) of such artifacts may be recorded and analyzed.” This method is commonly used to provide deeper insight into interview transcripts (Mokros, Mullins, & Saracevic, 1995; O’Brien, Freund, & Westman, 2014). Altheide (1987, 1996) specifically recommends using content analysis paired with ethnographic techniques, such as the participant observations and semi-structured interviews used in this study. When devising codes, I employed a recursive method of data analysis which was theoretically grounded in the hypotheses as well as adaptive to the behaviors observed in the data. My receptivity to significant patterns in the data is essential to testing the initial hypothesis. It is important to note that the results of textual analysis in Phase I indicated social noise appearing within the four key constructs, so those constructs were used again as a starting point for Phase II content analysis. However, as the following section addresses, recursive analysis during the Phase II content examination – that is, the use of both deductive and inductive reasoning – prompted me to add both breadth and depth to the coding used.

During this initial stage of analysis, I decontextualized the data by reading through each transcription again, marking portions of the participants’ responses believed to be significant in terms of the original social noise hypothesis and its four key constructs. This process is sometimes known as “chunking” because it generates large.
units of related data. Using the excerpting feature in Dedoose, each of these meaning units was labeled with one or more codes, indicating where elements of image curation, relationship management, conflict engagement, and cultural agency appeared in the interview transcripts.

During the next stage of coding, the data was recontextualized as I focused on coded excerpts, narrowing them down to just the words or sentences that were of core importance when answering the research questions, making sure all relevant portions of the interview had been excerpted. These meaning units were then “crunched,” condensed, by reducing the number of words where possible without losing content. For example, a transcription might read, “Yeah, well you know, you know I uh, think I kinda might have responded differently if the post was from someone like, I knew well, ya know?” In this case, I reduced the response for analysis purposes to read, “Yeah, I think I might have responded differently if the was post was from someone I knew well.” I also added words within brackets to clarify when participants’ answers were particularly short or unclear. In another example, a participant simply answered, “Yes,” to a question, I edited this to reflect the full meaning of the answer, such as, “Yes [I do believe this post could cause conflict within my social network].” Also during this process, I reviewed each of the excerpts by the various codes assigned, taking note of any sub-categories of the codes that might become evident.

Carefully using a systematic cognitive process, I used both induction and deduction recursively (LeCompte & Schensul, 2013) to generate a list of sub-codes for each of the four key constructs as patterns emerged. Then, I analyzed the transcriptions, excerpt by excerpt, noting all sub-codes that applied to each of the
statements. After all data coding was completed, there were 394 excerpts with 1,532 total codes applied to them. A few examples of how multiple codes and sub-codes can be applied to individual excerpts are listed in Table 2.

Table 2

Examples of Code and Sub-Code Use on Excerpts

<table>
<thead>
<tr>
<th>Code</th>
<th>Sub-codes</th>
<th>Excerpt</th>
</tr>
</thead>
</table>
| Cultural Agency       | • Association with Information  
                      | • Political/Religious Issues  
                      | • Trust                                                                      | Participant 20: I'll put a Love on it because I like the meaning behind it. I mean, even though the article was poorly written, I like the fact that they're focusing on having multiple qualified women [candidates]. |
| Conflict Engagement   | • Assumptions about Others  
                      | • Enthusiasm                                                              | Participant 8: I know for a fact when I'm posting something that will get those guys interest because they know I live in that part of the political spectrum where they're always trying to convince me that I'm wrong. Not in a competitive sort of way, but mostly [they think I'm] set in my thinking |
| Relationship Management | • Assumptions about Others  
                      | • Homogeneity of Social Network  
                      | • Political/Religious Issues                                                      | Participant 19: I don't think it would cause too much conflict. It will cause some because some people just like to cause conflict on Facebook. I would be a little more concerned about sharing it just because people I work with locally might think something about what's happening at my job. I'd be more worried about that. |

Participant 20 indicates several sub-codes of cultural agency, specifically their interest in political news, female candidates, and her willingness to trust and be associated with information she believes in even though she recognizes it was not well-
written. The next example exhibits elements of social noise surrounding the constructs of both conflict engagement and relationship management as Participant 8 describes managing interactions within his social network between those with differing political beliefs. One excerpt from Participant 19 exhibits elements of all four codes describing concern about conflict on social media with particular people surrounding certain topics and how this relates to her own online image. A frequency-based word cloud of the codes and sub-codes for all 394 excerpts can be seen below (Figure 12), and the full taxonomy and code counts can be found in Appendix B.

Figure 12. Word cloud code and sub-code frequencies.
Reviewing these code counts reveals the characteristics of the social noise participants experienced (Figure 13). The most common construct represented was cultural agency (38%), closely followed by relationship management (31%). The remaining two constructs were almost equal, with image curation at 16% and conflict engagement at 15%. The representation of social noise in these excerpts can be roughly divided into thirds, with one-third being cultural agency, another third being relationship management, and the final third being a combination of image curation and conflict engagement. The sub-codes within each of these constructs can be broken down further to reveal more details about the impact of social noise and its influence on participants. It is important to note that all sub-codes within a construct are not of equivalent significance or relationship to the parent code; rather the sub-codes
represent groups of similar statements or ideas expressed by the participants that inform that particular construct. Also, some sub-codes are used repeatedly as the same idea emerged across multiple constructs. For example, the sub-codes Avoidance and Political/Religious Issues are seen in all four social noise constructs but with varying degrees of influence. Below the various sub-codes for each construct are listed along with sample quotes from interviewees in order to more fully describe and characterize each of the four constructs of social noise.

Image Curation

Within the context of social noise, image curation is the effort by social media users to manage and control their online identities. Figure 14 shows a breakdown of the 10 sub-codes represented within 83 interview excerpts in which image curation was used as a sub-code. Each sub-code represents a unique factor or element contributing to image curation, noted by one or more participants. Many of the words seen in the results of Phase I are echoed within these sub-codes, words that indicate kindness and helpfulness to others as well as authority to make recommendations or give advice.

The largest sub-code of image curation was association with information (21%), in which respondents indicated that being associated with certain types of information could either enhance or detract from their online image. For example, Participant 2 expressed hesitation to interact with a particular piece of information for fear of how others might label him, saying, “[They’ll think] well, he liked this [post or article], so he’s racist. You know, people assume things about people by what you share on Facebook.” Another user chose to distance herself from being linked to information on Facebook, expressing distrust for using the platform as a source. Participant 3 said, “I probably
would be more apt to just use this as a reference and not share it at all, partially just because I don’t want to repeat things from places like this on Facebook.”

![Image curation sub-codes](image-url)

**Figure 14.** Image curation sub-codes.

The second largest sub-code within this construct was influence on others (18%), used when participants recognized their own information behavior as having an impact on someone in their social network. This often relates to actions others take, such as signing up for an event. Participant 20 explains, “I have people who are Facebook friends that if I mark [an event as interested], I noticed they almost immediately mark it themselves because they follow what I like.” This respondent clearly believes that by choosing to indicate interest in an event causes others to be interested in it as well. This sub-code can also refer to influencing information behavior. For example, Participant 8 believes that him posting an article would cause someone in his social
network to open and read the information. He said, “This gentlemen in London isn't going to give a rip really about [aviation]. He just thinks because [Participant 8] wants me to know about it, I'm going to open this up and maybe look at it.”

The third sub-code of image curation was approval of others (17%), a tag used when individuals acknowledge that acceptance by other individuals in their social network can affected their personal image. Participant 8 demonstrated this, saying, “All my high school friends who know me well, there is a whole group of them that are fascinated with the things I post about aviation. Hence, another reason I don't junk post.” In the statement, it was clear the respondent believed his posts were respected and enjoyed by his friends, and this fact compelled him to continue posting high-quality information. Other mentions of approval of others included respondents avowing that in certain situations they did not care what others thought about their posts.

The sub-code personality traits makes up 13% of image curation and was used when individuals identify with a particular characteristic of their online image, often something they believe others can recognize in them. In one example of this, Participant 13 said, “I'm not a very big reactor. I'm usually more of a sponge. I like getting information, but I'm not much of a reactor on here.” This participant had created a personal image online that included being non-volatile and seldom reacting directly to posts. Hobbies/Interests (9%) were also mentioned as part of an individuals’ online image, including dogs, gardening, family, or racing, like Participant 15, who says, “Most people on my Facebook know what I like to do in my off time. I like to race and go to the track quite often and build vehicles.

Interestingly, not interacting and withholding information were both cited as
affecting a users’ online reputation (avoidance 9%, privacy 7%). Avoidance was demonstrated when an individual refrained from acting on information posted by others out of concern for how responding could affect their personal image. This type of behavior was described by Participant 1, who said:

To be honest, yes [considering how my social network will respond to my posts does affect my behavior] because I'm just very careful about my social media presence, to the point of probably just not being very active on it.

Similarly, privacy was an element of image curation. Participant 15 said, “The reason that I use my social media is not to tell people I'm going to the bathroom. I'm not taking selfies here and there every day and telling people my whereabouts.” This respondent was pointing out that there are certain elements of her life that she does not want to share on Facebook. The last substantial sub-code within image curation was job/career (5%) in which participants noted their work might affect how they present themselves on social media. Participant 18 said:

I work for the government, and people have friended me on Facebook who I'm pretty sure are very different from me. They're going to see stuff that I've liked, and is that going to cause problems for me? But it doesn't necessarily prevent me from doing it. I just think about it.

In this case, there was no tangible rule or guideline imposed on the participant by their employer, but concerns centered around their workplace definitely influenced their personal image curation.

Political/religious issues (1%) and homogeneity of social network (1%) each had one mention as being important to the individual’s online image. Participant 20 stated, “You're not going to see me post like ‘Ridin’ with Biden’ on my Facebook,” explaining a desire to not align her personal online image with any political campaign.

Referencing homogeneity of social network, participant 17 said, “I've got a pretty
narrow friend list, but I don't want to be in an echo chamber. I try to have a variety of friends.” This respondent values having a range of different beliefs in their social network, clearly indicating that an “echo chamber” is not desirable.

Relationship Management

Relationship management as a contract of social noise refers to a user’s desire to build or maintain good social relations with individuals or groups of high social value. This includes family, friends, neighbors, co-workers, or peers in a community organization. Figure 15 shows the breakdown of the 12 sub-codes represented within the 166 excerpts where managing relationships was a factor contributing to social noise. Many of the terms that emerged to create sub-codes in this construct reflect the results from Phase I; words like “please”, “thank”, and “help” indicating manners and valuing the approval of others.

![Figure 15. Relationship management sub-codes.](image)

Figure 15. Relationship management sub-codes.
By far the largest sub-code of relationship management was assumptions about others (35%), in which respondents expressed their beliefs about what other people in their social network would think in various situations. In the previously mentioned example, Participant 11 made a broad assumption, saying, “Most people on my Facebook know what I like to do in my off time. I like to race and go to the track quite often and build vehicles.” In a more individualized assumption, Participant 16 observed, “She’s really into family and posts a lot of pictures of traveling. [This post must be about something that] meant something to her.” Because this friend usually only posts about family, the participant assumed an informational post she made must be something particularly meaningful. Similarly, Participant 20 said:

[I shared that event with this friend because] she used to work at the library and it looks like something she’d be interested in. She invites me to a bunch of stuff in the library. She’s also in my book club.

Here, the participant’s confidence in their friend’s response was demonstrated by listing the friend’s interests and activities. The accuracy of all these assumptions is dependent to a large degree on the social distance between the assumer and the assumee. Whether broad or individualized, these assumptions are part of relationship management because they indicate what the user believes about others in their social network and how the user believes the social network feels about them personally.

Within this construct, the next largest sub-code was Sharing Information with Others (11%), used when participants share pertinent information with an individual or group of people in their social network as a means of strengthening the relationships. For example, Participant 15 explained that on Facebook she and other parents of special needs children, “…share about our daily struggles, the things that impact our
lives and how can we support each other, relaying integral information about the symptoms of that diagnosis.” In this way, this social media user and members of the social network are using the sharing of personal information to add value to their relationships with one another.

The third largest sub-code of relationship management was influence on others (10%), a tag used on excerpts where individuals stated that their relationships with others affect the information behavior of those individuals. The use of nonverbal communication, like emojis, was specifically mentioned as a particularly visual and expressive way to influence others. Participant 18, for example, used the heart emoji to indicate “sending love to the person,” as opposed to love for the information, thereby expressing care and concern for the other person.

The sub-codes political/religious issues and homogeneity of social network each represented an additional 9% of the relationship management construct. Political/religious issues were coded as influencing relationships with others, such as:

Participant 18: “[How people in my social network view my posts] depends on if they agree with me, if it's somebody who is like-minded politically with me, they're probably like, 'Oh, I'm going to read that, too'. Or they might like it as well. But if it's someone from my family or that I grew up, I would assume they'd probably kind of roll their eyes.”

This social media user's experience illustrates how political and religious issues are interwoven with managing relationships. A user must consider how different individuals and groups within their social network will react to information they share. Homogeneity of social network as part of relationship management was evident in the statement from Participant 12, “I'm a part of a group where people post pet pictures, and it's a little bit more personal because it's people and pets. [I usually] Like or Love their pictures.” This
type of in-group and out-group behavior is often seen in managing relationships.

Another significant portion of this construct was made up by the sub-code Manners, in which 8% of respondents mentioned information behavior as being polite or impolite, an indication of shared behavioral norms and values.

Participant 20: “To me there's a difference between knowing when and where to bring something up. If someone asked me what I thought about something, I'd be honest about it, but I'm also not going to bring up a really hot button like political issue on Facebook, because I know it does no one any good.”

Approval of others (6%) was mentioned in situations where participants sought to gain or keep the approval of others specifically via information behavior. This can be seen in Participant 3’s statement, “My younger friends on Facebook, the crunchy mamas, they've been trying to guide me in gut health and would probably frown on this.”

Similar to what was seen with image curation, avoiding certain types of information behavior was a noted strategy for managing some relationships (Avoidance 5%). This was demonstrated in comments such as Participant 3’s statement, “If I don't agree with them, I probably won't respond, just because, like, it's not that big of a deal that I need to aggravate anyone or hear their opinions on it.” To a lesser degree, the data indicated that Family (3%), Trust (3%), Privacy (3%), and Job/Career (2%) impacted social media users’ ability to successfully manage the relationships within their social network.

Conflict Engagement

Conflict engagement is the level of social conflict with which a user engages or is comfortable with as an element of social noise. Figure 16 shows a breakdown of the nine sub-codes represented within the 81 total excerpts where conflict engagement was a factor contributing to social noise. Confirming the results of Phase I, key terms in these sub-codes often center around previous information that has been exchanged,
indicated with words such as “post” and “saying,” as well as negatives such as “don’t” and “stop.” The largest sub-code in this construct, present in almost one-third of all conflict engagement excerpts, was avoidance (25%). The prevalence of participants expressing avoidance in their online information behavior indicated that people expend significant thought and energy staying out of contentious situations with others on social media. Participant 11 expressed this by saying, “I'm not really out there looking to start arguments or put my political views on anybody else.” Participant 16 went even further, saying “I try not to [get involved in conflict on social media]. You'll see my Facebook page and it's puppies and kittens.” Not only does this user avoid engaging in conflict but goes so far as to only post pet pictures to stay far away from any potential conflict.

Figure 16. Conflict engagement sub-codes.
The second largest sub-code and the primary area of actual or anticipated conflict was political/religious issues (19%). Interestingly many of the comments about Political/Religious Issues also included Avoidance. For example, Participant 14 said, “I just probably wouldn’t Like or comment on political stuff. I'd probably stay out of it,” and Participant 4 echoed, “If it’s political, I don’t say anything.” In both of these instances, the users indicated that interacting with political information on social media was just too fraught with conflict so they stayed away from it altogether.

Revealing a completely different attitude toward conflict engagement, the third most frequently assigned sub-code was enthusiasm (12.0%), used when participants seemed eager for conflict or possibly to enjoy it. This was demonstrated when Participant 7 said, “Years ago I started a gun debate, and it got crazy on Facebook. It was kind of funny.” This illustrates enthusiasm because the individual purposely started an online debate about a sensitive issue and seemed to enjoy that the conversation got “crazy” or heated.

The fourth largest sub-code in conflict management was assumptions about others (11%), a tag used when participants referred to how they believed others felt, thought, or would respond. For example, Participant 8 said “Most people argue with their friends. I call you a ‘blooming idiot’ about that post you just made and here’s why. They won't be butt hurt about it, you know.” This individual clearly assumed that others engaged in name calling and conflict with friends online in the same way he did, but that no one really took it personally or got upset.

Approval of others (9%) appeared as the next largest portion of conflict engagement and was used when individuals indicated that the approval of others in
their social network influenced how or if they engaged in conflict. Rather than avoiding conflict based on preserving relationships or personal discomfort, Participant 2 expressed concern over how engaging with controversy online could influence a prospective employer:

I try to stay away from liking political things or sharing political things just because I don't want that backlash. Like I said, once it's out there, it's out there. If you're looking for employment, people can search your name and see what kind of things you Like and you know they may develop a bias against you.

Homogeneity of social network (7%) was a factor in conflict engagement as well, indicating that having different sub-groups who believe or act differently from one another within the social network can lead to conflict. This was seen in Participant 11’s description of an online political debate, “My co-workers jumped in the post, and my family members jumped in the the post, and I basically asked questions to both sides. And I felt like a moderator almost, trying to get everybody's true thoughts on it.”

Manners (6%) were a factor in social media conflict engagement as well. Participant 8 explained that he replied to someone out of a sense of obligation but this seemed to add to the conflict:

He bothered to reply to my post which he almost never does, so I felt I needed to keep going. I copied commentary from the post explaining what's going on. Then Craig comes back and says he doesn't understand so I explain what the problem is here. I'm not fighting with him. I just want to make sure he has all the understanding behind why.

The last three sub-codes mentioned within conflict engagement were trust (5%), family (3%), and hobbies/interests (3%). These sub-codes did not make up a significant percentage of conflict engagement, but it is important to note their presence. Trust was a key issue when Participant 1 expressed frustration when his medical expertise was not trusted over unfounded word-of-mouth. Referencing his willingness to engage in
conflict with people sharing unfounded medical information on Facebook, Participant 1 said, “That's how they feel, their opinion, or what one person told them but I've actually got a background in it.” Family emerged as a sub-code as many people expressed wanting to avoid online conflict with family members, such as Participant 20 saying, “My people, if they were tracking what I like, they'd probably be irritated because all of my family is extremely conservative, and I just don't really like to even go there with them because I don't have the energy or the time.” Hobbies/Interests, such as sports, were referenced in discussing Conflict Engagement, with Participant 7 asserting that debates over sports can include friendly disagreement without escalating into true interpersonal conflict. He said, “I don't think it would spark any kind of true debate. It would just, you know, be sports fans, agreeing and disagreeing.”

Cultural Agency

As a construct of social noise, cultural agency refers to a user’s personal investment in social or cultural issues, possibly based on understanding of their personal roles and responsibilities within society or driven by material or political utility. Figure 17 shows a breakdown of the 10 sub-codes represented within the 204 excerpts where investment in issues of particular personal interest were a factor contributing to social noise. The sub-codes that became obvious patterns within this construct used many of the same words that were seen in the clustering and topic analysis results in Phase I, including “join”, “recommend”, “check”, and “tell”. These types of words often indicate the speaker’s engagement in an issue to the degree that they are willing to speak out, take action, or even attempt to convince or recruit others to their way of thinking.
Within cultural agency, the largest sub-code was political/religious issues (19%). Elections, candidates, government policies, and issues that cross the political and religious boundary, such as abortion, were all mentioned as areas where users felt strongly. While individuals may avoid conflict in general, cultural agency in a particular issue of interest can drive them to engage. This can mean reading the information, such as when Participant 2 said, "It doesn't really matter whether it's right or left [politically], I'll click on it. I want to educate myself on what people are putting out there on both sides of the aisle." Cultural agency can also compel a user to be more assertive with others. For example, Participant 8 said, "I have one passion that I will get all up in everybody's stuff about, and that is the environmental stuff. And I'm not even a rabid environmentalist." The potential for social noise interfering in an exchange of
information on social media is heightened by this type of cultural agency if the user’s passion for the topic is stronger than their willingness to keep an open mind or to accept new information.

The second largest sub-code of cultural agency was hobbies/interests (18%), in which participants mentioned particular activities where they invest their time and/or money – for example, sports, gardening, car racing, or animal adoption.

Participant 19 expressed cultural agency surrounding gardening by saying, “Yes [I'm passion about gardening]. I'll be more inclined to Like and share gardening related stuff than anything else.” Engaging with, sharing, and speaking out about information on a topic are all hallmarks of cultural agency. Participant 5’s concern with fostering and adopting animals exemplified this when she said:

Absolutely. I mean, it affects me and if somebody likes it and posts it, they're just getting information out there. The more they can share with their friends to get information out and we can clear out these animals shelters.

Family (12%) was the third largest sub-code of cultural agency, demonstrating the importance of family to many social media users. Users mentioned posting photos for remote family members so they could stay updated on their lives. Others posted more specifically about their families, such as Participant 1. She said, “I post about what matters to me and my household. We spread awareness of my child's diagnosis.” In this way family as a sub-code of cultural agency can take slightly different forms, but in general it compels the user to actively post about their family.

The fourth largest sub-code within cultural agency was sharing information with others (12%), indicating a user’s personal investment in dispersing pertinent information to either their social network as a whole or to particular individuals. In this sub-code, the
topic of the information was not as important as the act of sharing it, possibly giving the sender a sense of wisdom, helpfulness, or interest in the recipient. Participant 3 demonstrated cultural agency in sharing information with others when she said, “I might share a link with someone, if I looked and felt it would be of help to them.”

Avoidance (11%) was the fifth largest sub-code within this construct, used when participants mentioned they were leery to engage with information they might otherwise be interested in because of the possible implications. This was essentially an example of cultural anti-agency, meaning people wanting to get involved but not doing so because they anticipated negative consequences. Participant 16 exemplified this when saying:

I [consider how my responses might be viewed by my social network] with political stories and such. I don't like to stoke the fire. If I read something and it's a Republican type story that's positive toward conservatism, I'm leery, and if it's something that leans liberal I'm leery. I like to read those stories, but I don't necessarily respond to them because I'm afraid that people are going to judge that part of me.

Another significant sub-code within cultural agency was job/career (10%), a tag used when individuals stated their investment in an issue based on their work. This can be seen in Participant’s 13’s statement, “They have people asking about different types of partitions and windows, and if people have questions about things I'll typically chime in if I have a good answer for them. Just because that's what I do with my job.” In this sub-code, respondents’ investment in particular issues was centered around their career field and experience, but not necessarily a specific employer or position.

The next significant portion of the cultural agency construct was made up by the sub-code gaining knowledge (8%), in which respondents indicated interacting with posts simply to acquire information, valuing the knowledge itself rather than interacting for
some social or relational reason. An example of this was seen when Participant 8 said of a Facebook friend, “Kenny is absolutely a right wing guy, but Kenny will find an occasional interesting story…This is something I would open and look at and that has nothing to do with Kenny's leanings.” This respondent chose to read a post from someone because he found the subject matter interesting, not based on support or even respect for the poster. This indicates that the drive to gain information was stronger than the user’s feelings toward the poster in this case.

Trust (7%) was used as a tag for cultural agency excerpts when participants mentioned their trust of information based on the source, whether that was a commercial source or a friend. This was exemplified in Participant 8’s comment, “Let's say there's a global warming story that comes out of Newsweek or [another] good source. I will post that and make comments on it.” This individual felt enough trust in Newsweek to post one of its stories and be associated with it as a news source. This ties in directly with the next sub-code, Association with Information Source (3%). While Participant 8’s comment above exemplified this sub-code, so does Participant 20 saying she used a heart emoji to indicate love for an article that was “poorly written, but I like the fact that they're focusing on having multiple qualified women [candidates].” Lastly, just one excerpt mentioned privacy (0.3%) as impacting their cultural agency. Participant 12 said, “I will screen grab things not like the posts, because I'm very introverted and my interactions online are probably more than my interactions in real life. This is me socially engaging.”

The Interrelationships of Different Constructs

It became clear while working with the data that the information behavior of social
media users was often influenced by more than one of the social noise constructs in any given instant. For example, a person may share a post about the need for volunteers at a local animal shelter because they are invested in this issue, but they also proudly state that everyone knows them on Facebook as the person who advocates for animal welfare. In this instance both cultural agency and image curation are driving the sharing of information. As these overlaps became more obvious in the data coding, I felt it was necessary to address this phenomenon. Once all the coding was complete, I generated a code co-occurrence table showing where and how often the four constructs or their sub-codes were used on the same excerpt.

Table 3

*Highest Co-Occurrence Sub-Codes by Construct*

<table>
<thead>
<tr>
<th>Construct</th>
<th>Sub-Codes with Highest Co-Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Image Curation</strong></td>
<td>Association with an Information Source (34)</td>
</tr>
<tr>
<td></td>
<td>Influence on Others (29)</td>
</tr>
<tr>
<td></td>
<td>Approval of Others (27)</td>
</tr>
<tr>
<td><strong>Relationship Management</strong></td>
<td>Assumptions about Others (92)</td>
</tr>
<tr>
<td></td>
<td>Sharing Information with Others (32)</td>
</tr>
<tr>
<td></td>
<td>Influence on Others (28)</td>
</tr>
<tr>
<td></td>
<td>Homogeneity of Social Network (25)</td>
</tr>
<tr>
<td></td>
<td>Political/Religious Issues (25)</td>
</tr>
<tr>
<td></td>
<td>Manners (24).</td>
</tr>
<tr>
<td><strong>Conflict Engagement</strong></td>
<td>Avoidance (37)</td>
</tr>
<tr>
<td></td>
<td>Political/Religious Issues (28)</td>
</tr>
<tr>
<td><strong>Cultural Agency</strong></td>
<td>Political/Religious Issues (59)</td>
</tr>
<tr>
<td></td>
<td>Hobbies/Interests (56)</td>
</tr>
<tr>
<td></td>
<td>Family (36)</td>
</tr>
<tr>
<td></td>
<td>Sharing Information with Others (35)</td>
</tr>
<tr>
<td></td>
<td>Avoidance (33)</td>
</tr>
<tr>
<td></td>
<td>Job/Career (29)</td>
</tr>
<tr>
<td></td>
<td>Gaining Information (24)</td>
</tr>
<tr>
<td></td>
<td>Trust (22)</td>
</tr>
</tbody>
</table>

The reason for performing this type of analysis was to uncover the relationships
between the constructs of social noise within this qualitative data. First, it is important to note that the code co-occurrences between each construct and its corresponding sub-codes reflect the same frequency as seen in the taxonomy and code count table (Appendix B), thus confirming the code counts (Table 3).

Many of the codes and sub-codes showed little or no co-occurrence, so Table 4 is a simplified version of the full table, focusing only on the areas of significant overlap. The analysis reveals that often an individual’s concerns surrounding relationship management and cultural agency arise simultaneously, and the user must balance these two interests when determining behavior toward the information presented in these situations.

Table 4

**Significant Code Co-Occurrence**

<table>
<thead>
<tr>
<th></th>
<th>Conflict Engagement</th>
<th>Cultural Agency</th>
<th>CA: Political/Religious Issues</th>
<th>Image Curation</th>
<th>Relationship Management</th>
<th>RM: Assumptions about others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict Engagement</td>
<td>34</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural Agency</td>
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<td>35</td>
<td>34</td>
<td>32</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>Image Curation</td>
<td>32</td>
<td>22</td>
<td></td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Management</td>
<td>35</td>
<td>60</td>
<td>47</td>
<td>27</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Relationship management’s co-occurrence with cultural agency was 60, meaning that these constructs were present together in 60 of the 394 total excerpts analyzed. This highlights the times in which social media users experienced both the desire to manage social relationships and to act on their personal feelings toward key cultural issues simultaneously. This included a frequent co-occurrence of the relationship management sub-code assumptions about others (33), meaning that social media users
are imagining how others will think, feel, or respond in instances where they want to post or interact with information toward which they feel cultural agency.

While overlap of these two constructs was most prominent in the code co-occurrence analysis, but other co-occurrences are highlighted as well. Besides cultural agency, relationship management had significant co-occurrence with each of the other two constructs. First, relationship management had a code co-occurrence of 47 with image curation, and specifically with relationship management’s sub-code assumptions about others (27). This indicated a strong interplay between individuals’ concern for their image on social media and their beliefs about how others in the social network would perceive their information behavior. Second, relationship management and conflict engagement had a code co-occurrence of 35, indicating that managing conflict of various types was often inherent in relationships with others on social media.

Cultural agency had noteworthy code co-occurrence with the other two constructs as well. Conflict engagement and cultural agency appeared together in 34 excerpts, with 22 of those instances involving cultural agency’s sub-code political/religious issues. This indicates the strong interplay for social media users between discussing and reacting to issues they feel strongly about and managing conflict with others in their social network, particularly where political or religious issues are involved. Cultural agency and image curation had a co-occurrence of 32, but with no particular sub-code standing out from the others. This overlap highlights the interdependence of social media users’ self-perception with important issues they either want others to know they are aligned with (gardening, for example) or do not want to be aligned with (political issues). The only constructs not significantly overlapping with one
another were conflict engagement and image curation (10). This indicates that while the two constructs did have some interplay, it was not as influential as seen with other constructs.
CHAPTER 5
DISCUSSION AND FUTURE RESEARCH

Results from this experimental study support the initial assumption made and the theorized definition of social noise with four major constructs as shown in the conceptual framework. The results showed that social noise was present for individuals using social media, which in turn impacted their information behavior in a variety of ways. In this chapter, findings regarding social noise and the factors that contribute to it are reviewed, addressing each of four constructs beginning with cultural agency because it emerged as the most prominent. Next, overlap between the constructs is addressed, and finally, the effect of social noise on social media information behavior is discussed.

Cultural Agency

As noted in the previous chapter, the social noise construct cultural agency reflected in 38% of the 394 excerpts gleaned from participant interviews regarding their information behavior on Facebook. Within this construct 10 sub-codes were identified, demonstrating different elements of cultural agency: political/religious issues, hobbies/interests, family, sharing information with others, avoidance, job/career, gaining knowledge, trust, association with information source, and privacy. Overall, these sub-codes created a multi-faceted picture of cultural agency, representing many of the issues and concerns individuals juggle in their day-to-day lives. Cultural agency as a key construct of social noise can be seen as a motivator for actions, like posting, reading, commenting, clicking Like or Love emojis, or sometimes not acting at all.

Political/religious issues and hobbies/interests were the most frequently
mentioned reasons for people to feel a degree of passion or investment in a topic, compelling them to speak up about it. This was seen when social media users posted in support of their favorite sports team or the political candidate they were supporting.

The sub-codes family, sharing information with others, and job/career all represent issues which social media users report feeling strongly about in regard to their information behavior. This was seen when users posted pictures of their family, pass along interesting information to friends, or offered information on social media based on their personal work experience. Another frequently used sub-code was avoidance, indicating participants’ efforts to sidestep posting about or responding to issues they believed could result in conflict, hard feelings, or simply misperceptions. An example of this avoidance in cultural agency was seen when Participant 14 said, “I probably wouldn’t Like or comment on political stuff. I’d probably stay out of it.” As a citizen and voter, this individual has a vested interest in key political issues but chose to avoid interacting with this information on social media due to the potential for conflict.

Gaining knowledge and trust were represented as sub-codes to a lesser degree within cultural agency, with respondents noting occasions when they interact with information simply to acquire the knowledge but have no intention of reacting to it or sharing it with anyone else. It is interesting to note that this was one of the few times social media users indicated information behavior that had no immediate social motivation whatsoever. The trust sub-code was related to gaining knowledge because it was used when people stated their trust in particular information based on the source. A trusted source could be a friend who has experience in a particular area or a news organization that has a long-standing reputation of excellence in reporting on a
particular topic. Concerns about personal information and data privacy were only mentioned once in reference to cultural agency, possibly indicating that when people are passionate about particular issues and want to post about them, they are less concerned about their own privacy.

Relationship Management

The influence of relationship management was seen in 31% of all participant interview excerpts, making it the second largest construct of social noise. Within relationship management, 12 sub-codes were identified: assumptions about others, sharing information with others, influence on others, political/religious issues, homogeneity of social network, manners, approval of others, avoidance, family, trust, privacy, and job/career. It is logical that the three largest sub-codes all relate to others, since the construct relationship management is centered around the social noise that influences an individual's interaction with other people. Among these top three sub-codes, assumptions about others was by far the largest, reflecting social media users' concern with what their friends, family, and online acquaintances were thinking. This included assumptions about the general beliefs of the other person as well as how they might react to the information behavior of the user.

The sub-code sharing information with others reflects some users' belief that passing along information they believe others in their social network would find useful is a way of showing interest, concern, or investment in the relationship. Influence on Others was used as the sub-code when participants recognized their personal influence on others in their social network, perhaps acknowledging this as a representation of their social or relational power. A situation like this was seen when Participant 7 said,
regarding his baseball posts, “I definitely think [my comments on this] would bring out the fans. I have a few Cubs fans [as Facebook friends], and those would be the people I would expect to either comment, like, or share whatever I post.”

Just slightly less represented within relationship management were the sub-codes political/religious issues and homogeneity of social network which are interestingly correlated. Participants noted that political and religious issues influenced their relationships with others on social media to the same degree that the balance between those with different political and religious viewpoints does. For example, while the political stance of a friend can influence a user’s relationship with that person, users are also concerned with the types of different belief systems represented within their social network and how people holding these different beliefs will interact with one another. This sentiment was expressed when a user’s family and co-workers or friends held widely different viewpoints, leaving the user in the middle feeling like moderator.

Manners were another important sub-code within relationship management. Participants indicated that being polite and showing support for friends or family can be a motivator for information behavior. Multiple respondents said they often click Like to show support for someone’s post or simply to acknowledge they had seen it, not necessarily because they truly enjoyed or agreed with the information shared. In a related sub-code, approval of others was mentioned in the context of maintaining relationships via socially acceptable information behavior or at least recognizing the risk of losing the approval of others when posting something contrary to others’ beliefs. The sub-code avoidance was not strongly represented within relationship management, but it does occur in instances where participants mentioned avoiding the posts of certain
people in their social network. Family, trust, privacy, and job/career sub-codes all appeared within this construct but not to a significant degree.

Image Curation

The construct image curation occurred in 16% of all participant interview excerpts, indicating that it was part of the social noise that influenced social media users but not to the degree that cultural agency and relationship management were. Within image curation 10 sub-codes emerged: association with information, influence on others, approval of others, personality traits, hobbies/interests, avoidance, privacy, career, political/religious issues, and homogeneity of social network. Image curation as a construct of social noise was observed when a user took into consideration how information behavior would reflect on them personally, possibly refraining from a desired action based on how it would be viewed by others, rather than responding to the information based on true feelings.

The strongest sub-code within image curation was association with information, used in excerpts where participants wanted to be associated or disassociated with certain types of information due to the impact it would have on their personal reputation. Most people want to be known for sharing information from well-respected sources and not unreliable or biased ones. Influence on others and approval of others are both sub-codes strongly represented within image curation, illustrating the importance of the opinion of others in the social media users’ own self-image. Managing one’s own role within the social network and monitoring how that role is viewed by others are key components of image curation.

Identifying with particular personality traits was seen as part of image curation as
well. For example, Participant 11 identified himself as “a redneck who’s pretty much straightforward about everything” while Participant 12 identified herself as an “extreme introvert.” The hobbies/interests sub-code was seen within image curation when individuals used specific personal interests on their social media account as a key part of how they represented themselves, such as when Participant 8 says, “Facebook pretty much just knows me as a dog guy now.”

Avoidance was definitely part of image curation, with participants avoiding particular information behaviors that could be detrimental to their personal image or reputation. For example, Participant 18 said that she works for the government and does not comment on certain issues on social media because she knows it would be frowned upon by her bosses and could cause conflict for her at work. This is similar to the privacy sub-code in which participants expressed concerns about sharing too much personal information on social media because they did not know how that information might be used. The job/career sub-code was used for excerpts in which user’s indicated their job is an important part of their online image. This was mentioned specifically by nurses, paramedics, and members of the military. Political/religious issues and homogeneity of social network were each mentioned once but did not have a strong influence as part of the image curation construct overall.

Conflict Engagement

Conflict engagement was seen in 15% of the excerpts from participant interviews, highlighting instances of either conflict or conflict avoidance. When individuals do not act as they would like toward information, but instead modify their behavior to manage conflict or anticipated conflict, this shows the influence of social
noise. Within this construct 10 sub-codes were identified, demonstrating different facets of conflict engagement: avoidance, political/religious issues, enthusiasm, assumptions about others, approval of others, homogeneity of social network, manners, trust, family, and hobbies/interests.

The most significant sub-code in conflict engagement was avoidance, used when participants mentioned avoiding issues, people, or types of posts that might lead to conflict on social media. Participants frequently stated that if they thought a piece of information might be controversial, they would only share or comment on it via Facebook Messenger, meaning a private message between only the sender and receiver. These participants said they would only feel comfortable sharing and discussing the potentially volatile information with a close family member or friend and in a format that could not be seen by others. Predictably, political/religious issues are the next most significant sub-code within conflict engagement as tensions over political, religious, and social issues seem to be at a high point in the U.S.

The sub-code Enthusiasm was assigned to those excerpts in which participants indicated welcoming conflict with others online, at least to some degree. This can be seen when Participant 8 says, "Once in a while, I'll stick my toe in the controversy if I think it's something that I care about, something environmental. Not that I'm a crazy environmentalist. I just hate, stupid, stupid deniers." Here the participant claims to be hesitant to engage in online controversy but claims he will engage in issues regarding the environment. Then he goes on to use the words "hate" and "stupid" in describing those he disagrees with, causing me to wonder if the participant actually engages in more online conflict than he admits or possibly realizes.
Assumptions about others was a sub-code which occurs often as part of conflict engagement, specifically when users believe they know how others will respond to conflict or contentious issues. For example, many users said they would never share certain types of posts (mostly political) because they know their family would strongly disagree, want to argue with them, or even be angry. Approval of others was a related sub-code, represented within this construct in an unusual way. Participants stated not caring about other people’s opinions on specific topics which they knew might cause conflict. Several individuals responded similar to Participant 17, who stated “I think that most everybody could agree the information in the article [I am sharing] is correct, but [if they do not agree] I guess I don't care.” Homogeneity of Social Network, or the lack of homogeneity more specifically, was mentioned as contributing to conflict, with
participants noting that having people from different belief systems in their groups either caused conflict or increased their worry about potential conflict. The sub-codes Manners, Trust, Family, and Hobbies/Interests were all mentioned as being small parts of Conflict Engagement as well. Figure 18 shows the social noise model as originally depicted but with the four constructs listed according to their appearance in the data. Cultural agency is listed first with 38%, and then relationship management with 31%. Image curation (16%) is third, and conflict engagement (15%) is last.

The Interrelationship and Interdependency of Social Noise Constructs

While not an initial objective of this study, it became apparent to me when analyzing the data that the identified social noise constructs did not influence behavior independently; instead, the four constructs were often overlapping and intertwined within individual instances of information behavior. For this reason, it became necessary to acknowledge and report on this finding. The co-occurrence analysis of the four main constructs revealed that factors influencing social noise often occur simultaneously, with more than one construct influencing a particular instance of information behavior. Relationship management and cultural agency are the two most influential constructs that introduce social noise into the social media behavior of individuals. Their high co-occurrence score (60) reveals they are often present together in the same instances of information behavior, meaning that concerns surrounding personal relationships and vital social or cultural issues both impact a user’s decision regarding a single instance of information behavior. The issues that individuals are personally invested in impact and are impacted by the relationships in their life. The overlap between these two constructs suggests that social media users cannot always interact with information about an issue
important to them based on their true feelings but must consider how others in the social network will view their response to the information. While this was not a surprising result, it is noteworthy to see this play out in the context of social media as it is a prime example of social noise. Another layer of interest is added to this finding when considering that the relationship management sub-code assumptions about others was the only sub-code with significant co-occurrence with cultural agency; therefore, the overlap between these two constructs often occurs when the user assumes how others in the social network will think, feel, or behave toward their information behavior.

Although the interaction and overlap between cultural agency and relationship management was most frequent, there are notable overlaps between other social noise constructs. Cultural agency occurs simultaneously with conflict engagement in many instances of information behavior, and the same was true with cultural agency and image curation. This finding underscores the importance of cultural agency in relationship to an individual’s self-presentation on social media as well as regarding online conflict. Creating a desirable online image with valued members of the social network and engaging with topics of interest both may be important to a social media user, but when the two come into conflict in a particular instance of information behavior, the user must decide which is more important. This is social noise interfering with the pure interaction between individual and information that models of information behavior traditionally assume. Similarly, an individual might actively avoid conflict on social media, particularly in areas of political/religious issues, but when someone spreads false information about a topic the user is particularly invested in, they must make a choice regarding which desire will guide their information behavior. Hence, the
information behavior demonstrated on social media is not always a clear picture of a person’s true feelings or attitude toward information.

Evidence of social noise was seen in the confluence of relationship management with imagine curation and conflict engagement as well. Clearly, relationships with others are a strong component of a social media user’s online image, and this was particularly true considering the prevalence of individuals’ assumptions about others. People attempt to manage their self-presentation online while at the same time navigating their relationships with others by interacting with information in a way that is advantageous. Also, as some level of conflict is inevitable when groups of people interact and share ideas, social media users must balance their relationships with others against their individual tolerance for engaging in that conflict, which is many times centered around issues in which they are deeply invested (cultural agency).

Avoidance was an interesting phenomenon that emerged as part of this analysis. Within the construct conflict engagement, avoidance was primarily discussed as participants stated specifically avoiding potentially heated situations on social media. Staying away from particular information, people, or situations was mentioned across all four constructs of social noise but was especially prevalent in cultural agency and conflict engagement. In regard to cultural agency, avoidance was mentioned in relationship to political conversations, questionable information sources, and people who “post too often about annoying political things,” (Participant 6).

In any given instance of social media information behavior, various elements of image curation, relationship management, cultural agency, and conflict engagement can impact the user’s decisions. Even image curation and conflict engagement have some
interplay, although not as often as the other constructs.

The relationship management sub-code assumptions about others impacts both cultural agency and image curation. Assumptions about others vary in validity and specificity based on the social distance between two users. For example, a user's assumptions about their own adult sibling would likely be more accurate than assumptions about a friend of a friend. These assumptions impact the information behavior of individuals. If a user believes in advance that another user will interpret a post negatively, they might not post the information. If the user thinks they know how other individuals think and believe, they may not engage with information the other person posts, believing they already know where the person stands on particular issues.

As demonstrated in this discussion, social noise often is present in social media communication and interactions, and the influence on users’ information behavior can be seen in a variety of ways. Avoiding, assuming, and demonstrating personal support are a few of the most prominent effects reported and observed. Social media users reported and were observed actively avoiding information, often a topic or information source with which the user did not want to be linked. Concerns regarding personal image and also the information’s potential to stir conflict were frequently cited as reasons for avoiding information. In addition, many participants reported not engaging with information for fear of encouraging the Facebook algorithm; they believed if they clicked on it, they would begin receiving more of that type of information.

Another effect of social noise on social media information behavior is rooted in assumptions about information sources as well as other people’s motivations and reactions. Information often is presumed to be of a particular type based on who is
sharing it, whether this is corporations, organizations, or individuals. Participants were often willing to click on information because it was shared by a trusted or well-respected source and skipped over other information because the source was seen in a negative light. Similarly, assumptions about the motivations of others influenced behavior. Participants reported believing that certain friends had an ongoing “agenda” in their social media posts, whether political, religious, or surrounding a particular issue important to them. These assumptions sometimes draw a user toward the posted information and sometimes cause them to reject it outright. Social media users also make assumptions about how friends will react to their own information behavior, believing they know ahead of time what people would think, say, or do. This was observed when people responded to friends’ posts with a heart emoji believing the friend would understand this as “going the extra mile” for them versus the Like emoji. Many times, users assumed their information behavior would garner negative reactions from their social network, and this caused them to engage to a lesser degree than desired or sometimes to not engage with information at all. For example, they might Like a posted article but not comment on or share it.

Social noise also influences information behavior on social media as certain expectations have emerged as online social niceties. Participants reporting Liking informational posts to show support for the poster even when they did not particularly like or feel strongly about the information itself. At other times, users Liked a post to indicate to the poster they had read it. People were generally eager to Like posts they enjoyed or were neutral about in the interest of building up their relationship with the poster. In the same way, participants often reported ignoring a friend’s post they did not
agree with. This sometimes was done in the interest of preserving the relationship and at other times to avoid appearing negative or argumentative. All of these concerns influence social media users’ actions, resulting in observable information behavior that may not be a true reflection of the user’s actual thoughts and beliefs.

Because a recursive approach incorporating both inductive and deductive analysis was used, another key factor emerged as an influence on social media users’ information behavior. This is an advantage of using ethnographic techniques to study qualitative data like these participant observations and interviews; important elements that a researcher did not anticipate in advance can emerge, creating a more complete picture of the phenomenon being studied (LeCompte & Schensul, 2013). This factor is discussed in detail in the next section.

Users’ Interaction with Social Media Platforms

Qualitative analysis provided insight into how users interact with and think about social media platforms and other technology, such as smartphones and computers, they use to access them. Eighteen of the 20 study participants made unprompted reference to Facebook during their interview, expressing various concerns and levels of understanding about how it functions, and many participants spoke about it repeatedly. Of the 394 interview excerpts, 76 included direct references to Facebook and its role in facilitating the participants’ communication and information behavior. These comments are of interest because the participants are acknowledging the unique context of Facebook and how the platform facilitates, constrains, and generally impacts their information behavior. Statements ranged from personal observations to broad, sweeping concerns about Facebook. Individuals noted using Facebook to add events to
their digital calendars, using the Watchlist to provide background viewing during daily
routines, and using Facebook to measure the attitudes of others in their social network
on particular issues.

Privacy concerns and Facebook’s power to spread information was mentioned,
such as when Participant 2 said, “That’s the thing with Facebook. Once it’s out there, it’s
out there,” and Participant 4 said, “I don’t like putting my name out there on public stuff.
The less public my Facebook, the better for me.” These types of concerns often
intersect with excerpts noting the power of Facebook to influence what others think
about someone as well as questions about how others use Facebook. Participant 6
mentioned that she and her husband compared their Facebook feeds and were
surprised at how different the content was.

Other individuals questioned the details of how Facebook operates, often
expressing confusion. Participant 4 said she believed that the more Likes and shares a
post gets, the higher up it will appear in other people’s feeds. Privacy settings and
understanding those was mentioned frequently, including lack of clarity about what
other users can see or not see. For instance, Participant 20 says, “I don’t think anybody
will see my reaction to it, except for my shared friends between [the original poster] and
me because it was her post, not mine.” Some users noted feeling limited by the reaction
options on Facebook, saying the Like button or the angry face emoji, for example, do
not always give them an adequate way to quickly express their reactions toward
information. Participant 18 explains her feelings toward using the heart emoji:

I see the heart emoji as sending love to the person [rather than loving the
information itself]. He lost his grandpa so it feels weird to just put Like, like I don’t
care as much. So a heart is like the extra mile.”
Particular mention was made of Facebook using algorithms, although it was clear that these was not well understood. Participant 12 noted:

Another factor in why I engage or not is I know there [are] algorithms [when you] start liking stuff. [Click that you’re] interested in something and another load of stuff will pop up. This [article is interesting, but I don’t want to say, ‘Hey Facebook, show me more of this stuff’ [by clicking on it]. I’ve heard…I don’t know if there’s truth to it, but if you click an emoji beyond Like it gives a stronger indication that you’re more engaged with [the information].

Participant 8 presumed to understand the algorithm, stating, “We know how good the algorithm is on Facebook…it is putting me together with this particular ad because of [my dog posts].” Other participants expressed rebellion or resentment toward the mysterious algorithm. Participant 17 said, “I don’t want to Like everything on my page on a given day because that’s just feeding into the Facebook algorithm. I kind of want to resist the man, you know?” Participant 13 referred to this as “feeding the media monster,” saying, “If I went and hit Like on this, I’m going to get more crap like this, and I just don’t want to have a bunch of political crap on here.”

Many participants discussed their use of Facebook in relationship to other social media platforms, either in terms of time or type of use. For example, Participant 2 observed, “I have Twitter as well, but I normally only get on Twitter if there’s like big news, just to look at the different feeds. But most of my scrolling is on Facebook and Instagram.” Similarly, Participant 8 reports that some of his friends “have segregated their lives on Facebook. They have a ‘friends at church’ group and then an ‘everyone else’ group.”

A number of statements related to Facebook’s information content, format, and use. For example, Participant 18 noticed her flow of information changing based on Facebook groups she had joined. She said “[Posts from] Facebook groups are what I
tend to see rather than from friends anymore because I've joined so many Facebook groups.” Participant 19 registered annoyance with pop-ups and paywalls, stating, “Sorry, I'm not clicking on the [Daily] Oklahoman [newspaper] stuff because it always sends me to a paywall. That's annoying.” Similarly, Participant 3 comments about a post he clicked on, “It kept having all those pop ups, and I'm not gonna give out my email information.”

Some participants expressed confusion, such as Participant 6 who wondered why she was seeing a particular piece of information, saying, “It's like those things that say ‘You may be interested’ in this, sort of like an ad. I guess Facebook thinks it's very important [for me to see this].” Participant 12 commented about one post, “I thought this was going to be an article, but it turns out it's more like a commercial,” going on to say, “I am less inclined to Like a post if it is sponsored content.” Several participants seemed to question the validity of information on Facebook, with Participant 7 saying, “A lot of time in articles like this, the headlines will get you and then there really isn't a whole lot of context or substance in the article…I think that's just the nature of articles on social media.” Participant 12 says, “I would never go to Facebook for anything like reading material,” and Participant 3 says, “I don’t want to repeat things from places like this on Facebook.”

The format of information was mentioned as an obstacle for some participants. Participant 20 says, “[I am interested in this topic] but I also noticed it was a YouTube link. I didn't click on it because I didn't really feel like watching a video.” Participant 19 states, “If I got tagged [in a post], I would be annoyed because I don’t like that.” Participant 18 notes an aversion to Sponsored content being overridden by a desire for
information, explaining, “I don’t really like looking at sponsored content, but I really wanted to know more about this jumpsuit. It’s $24. That’s why I was like ‘Oh I’ll click on this anyway.’”

Participants reported using information found on Facebook in interesting ways. Participant 12 says, “I will screen grab things, [rather than] Like the posts,” in order to protect her online privacy. Several individuals mentioned using Facebook Messenger to send or respond to information with only one trusted individual rather than posting about it where it could be seen by members of their social network. Participant 6 says she uses Facebook” less as a place to post and react to news or information and more as a memory keeper” for pictures of her family. Participant 18 reports being as interested in the comments on an information post as in the post itself many times, saying, “I always find it interesting. I don’t know why.” Participant 5 used an ad for a product to see how other customers reported its effectiveness, saying “I just like to look on there just to see if people are really happy. And, you know, the results are…everything on it seems great.” This calls into question whether the respondent understood the information was a paid ad, although she acknowledge during the interview it was an ad. Participant 6 mentioned the functionality of the Unfollow feature on Facebook, saying, “I still like her as a person and want to be her friend on here, but I don’t want to see her posts all the time. So I like the Unfollow button.”

Implications and Limitations

Implications for practice and for further research emerged from this study. More extensive research is required to shed light on how individual concerns surrounding image curation, relationship management, conflict engagement, and cultural agency
become social noise. Replicating this research with a different population would be a step toward making the findings more generalizable. Differences among individual social media users should be studied too, as some could be more adept at filtering social noise. Study of social noise in cases of misinformation is needed, specifically focusing on how it influences the spread of misleading and possibly harmful messages. In addition, the role of information encountering in social media information behavior should be studied since the majority of information is encountered rather than specifically sought out by the user. This research might include questions regarding trust, acceptance, and sharing of the unsought information.

Additional findings from this exploratory research require separate, focused study. The overlap between the constructs of social noise and how their interplay influences information behavior needs to be examined in more detail. Specifically, the co-occurrence between cultural agency and relationship management within individual instances of information behavior should be studied to determine if a statistical correlation can be found between the two constructs. Also, based on the strong pattern of participant statements that emerged in this study, exploring how information behavior is impacted by users’ interaction with and ideas toward social media platforms is a next step in more fully understanding social media information behavior.

As societies, cultures, and communities around the globe increasingly use social media to share information as well as maintain personal and professional relationships, the process by which individual decisions are made and information behaviors occurs must be more clearly understood. With full knowledge of the underlying beliefs and tendencies that influence social media information behavior, we can then move forward
in educating users at various levels. Businesses and organizations can benefit from learning the limitations of social media data to reflect users’ true beliefs. Individual users can learn more responsible information behavior, including how to avoid assumptions about others that lead to miscommunication and possibly contribute to the spread of misinformation.

Recognizing that this is an exploratory study, there are several limits to the immediate application of the findings. Data were collected from two geographic locations in the U.S., specifically through neighborhood Facebook groups. This limits the sample of users to a small number of people who use Facebook and also live in those neighborhoods. These factors limit the generalizability of the findings. Demographic information for participants was not gathered so factors such as age, socio-economic status, education level, and political affiliation are not available to inform observations or analysis.
CHAPTER 6
CONCLUSION

Social media information behavior is fraught with entropy, seen in the fear expressed about communicating political and cultural issues, confusion regarding validity of information sources, and the rapid spread of misinformation. This calls into question the very nature of information, particularly in this social context. Opinions are freely mixed with scientific, technical, and nontechnical knowledge, many times with no identifiable source or objective. Moreover, these messages are infused with subtle and overt value statements. Bailey (1990) observed in *Social Entropy Theory*:

Further, the information components explicitly include societal values, including (but not limited to) those that form the bases for normative proscriptions or prescriptions. Values are very important in guiding societal actions and can greatly affect all of the other macrosociological variables…In fact it includes what is often called culture (p. 96-97).

For this reason, the study of social media information behavior is increasingly critical. It impacts not only individuals and groups but also the beliefs, values, and direction of the broader culture. This experimental study was undertaken to determine the viability of the social noise model. Constant observation by members of the social network is the most unique feature of social media information behavior, and it is not reflected in traditional information behavior models. The purpose of this study was to investigate how persistent observation by members of the online network influences social media users’ information behavior, resulting in the phenomenon of social noise. Specific research questions addressed were: (R1) What is social noise and what are the factors that contribute to social noise on social media platforms?; and (R2) How does social noise affect the information behavior of users as they encounter news and information
on social media?

An existing data set of 10,000 posts and comments from a neighborhood Facebook group in Pennsylvania was selected, and data analytics were used to search for patterns in the words individuals used. Textual analysis, including LDA, LSA, and clustering techniques, were performed, generating groupings of words that were often used together. Reviewing this output gave insight into types of comments and posts Facebook users were making but could provide no information about the users’ motivations. It became clear that in order to understand the thought process behind Facebook users’ information behavior, it would be necessary to use qualitative methods such as participant observation and interviews.

Qualitative data were collected via Zoom observation and interviews with 20 participants from a neighborhood Facebook group in Oklahoma. Each participant was asked to select and interact with 3 informational posts - reading, commenting, sharing, or using an emoji. After each participant had done so, I interviewed them, asking specifically about why they chose to react as they did to the posts.

No previously used coding system could be adapted for this study because social noise has not previously been identified and studied. LeCompte and Schensul (2013) explain codes as “Names or symbols used to stand for a group of similar items, ideas, or phenomena that the researcher has noticed in his or her data set” (p. 55). Transcripts of the interviews were coded using Dedoose software where excerpts exhibiting evidence of social noise were selected. A recursive method, alternating between inductive and deductive approaches, was used to do the coding and identify patterns within the excerpts. “Ethnographers use both induction (examining data and letting them
fall naturally into chunks) and deduction (choosing concepts, then sorting data in those terms) throughout their analysis,” (LeCompte & Schensul, p. 46).

I began by assigning codes to excerpts where elements of the four social noise constructs were identified, and then continued coding by reviewing each code, assigning sub-codes where patterns emerged. Once coding was complete, code counts were examined as well as code co-occurrences, meaning excerpts in which more than one code was seen. Each construct had multiple sub-codes indicating different facets of its influence on social noise, and these occurred at a wide range of frequencies. In this way, each social noise construct was further illuminated and described. Moreover, the four constructs themselves were seen to be overlapping in many excerpts, layering their influence over one another. This is particularly true of cultural agency and relationship management which have the strongest co-occurrence, drawing attention to the decisions that social media users must make when balancing concerns of relationships against topics the user cares about deeply.

Through this study it became evident that the different constructs of social noise were not mutually exclusive, but often overlapped and combined. Each excerpt and instance of social media information behavior may reflect multiple codes, sub-codes, and co-occurrences, highlighting the complexity of social noise and the close relationships between its constructs. Based on the results of the analysis, it is evident that social noise plays a role in the information behavior of social media users. This finding verifies the initial identification of social noise and provides the first step in describing its features and influence on individuals. These results are not surprising. As noted by LeCompte and Schensul (2013):
In many ways, the job of the ethnographer is, in fact, to attribute meanings and importance to patterns and regularities that people otherwise take for granted in everyday life until a researcher points them out, highlights them, and gives them broader significance by associating them with other experiences, situations, and literature (p. 214).

The results of this exploratory study provide a basis to further develop the social noise Model and explore its application in a variety of modern contexts, particularly on social media platforms where social factors are often present, valued, and highly visible. Social cognitive theory has previously prompted theory development in information science (Middleton, Hall, & Raeside, 2019, p. 932); thus, basing the social noise model on the combination of Shannon’s model with Bandura’s social cognitive theory gives weight to this new framework. I plan to follow up on this study, delving deeper into the factors that contribute to social noise and its impact on social media information behavior. Detailed research is needed to illuminate more precisely how the four constructs of social noise appear, interact with one another, and influence social media information behavior. The constructs cultural agency and relationship management require particular focus because they occur most often and because they frequently appear together in instances of information behavior. Particular emphasis should be given to how social noise might play a role when users encounter misinformation or even disinformation, as well as the impact of encountering information on social media versus information seeking or search. Further research using the social noise model is anticipated to yield 1) robust understanding of social influences on information behavior, particularly in online contexts, 2) analysis of how technology facilitates social noise, and 3) insight into how individuals can be more aware of these influences.

There is an urgent need to more fully understand information behavior on social
media as these platforms are becoming increasingly popular methods for sharing and consuming all types of information. The results of this study indicate that individuals are not always interacting with this information based on true personal beliefs or desires; instead, concerns surrounding their personal image, relationships with others, core beliefs, and online conflict is influencing their observable information behavior. The recognition of social noise is an initial step toward educating social media users about this powerful force that can affect information behavior. It could be the key that opens the door to educating social media users in the power of their own information behavior, helping them become more self-aware, develop responsible information behaviors, and be less susceptible to misinformation and disinformation.

Recognizing the presence of social noise is pivotal also for businesses and organizations. Understanding this phenomenon sheds light on the fact that observable Facebook behavior takes place for a variety of reasons and is not always an accurate representation of someone’s personal beliefs. Deciphering the impact of social noise and the factors that influence it will help those who use social media analytics to more fully understand their customers or target markets rather than making assumptions about what motivates their information behavior.

Harvard librarian Matthew Connor Sullivan wrote in 2019, “There is a strong sentiment that librarians have an opportunity, if not duty, to join, if not lead, the fight against fake news, misinformation, disinformation, and the like,” (p. 1147). While the impact of social noise on social media information behavior is not synonymous with fake news, the underlying concerns are much the same. Issues of confusion, social influence, and trust permeate both. Social media platforms are open systems, with
information flowing freely both in and out. This factor contributes to their dynamic nature but also provides hope that external interventions can help to reduce negative effects of social noise. As noted by Bailey (1990), “For even if internal entropy does increase within a system, transfers of information, energy, or matter from without can decrease entropy,” (p. 80). The current situation may seem insurmountable, but objectively speaking, it is possible to reduce the entropy and confusion that exists surrounding information consumption, interpretation, and spread on social media. Librarians and information science researchers are perfectly poised to lead this charge.
<table>
<thead>
<tr>
<th>Social Noise Construct</th>
<th>Question</th>
<th>Sub-Questions</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>1. Is Facebook the primary social media platform you use?</td>
<td></td>
<td>Learning how information is received.</td>
</tr>
<tr>
<td></td>
<td>2. Tell me how you came to see this post and how you know the poster.</td>
<td>• Were you tagged specifically in this post?</td>
<td>Learning how information is received.</td>
</tr>
</tbody>
</table>
|                        | 3. Based on how you received the post, did you have any preconceived ideas about the information? | • Did your knowledge of the poster affect how you viewed or interpreted this information?  
|                        |                                                                         | • Do you believe the poster had a particular purpose in posting this information?  
|                        |                                                                         | • If so, what do you believe their purpose was?                                | Learning how information is understood. |
|                        | 4. Briefly describe the information posted and how you thought about it.  | • How much of the information did you read?                                  | Learning how information is understood. |
|                        |                                                                         | • Did you spend any time considering or reflecting on the information?         |                                    |
|                        |                                                                         | • Did your knowledge of the poster affect how you viewed or interpreted this information?  
|                        |                                                                         | • Do you believe the poster had a particular purpose in posting this information?  
<p>|                        |                                                                         | • If so, what do you believe their purpose was?                                |                                    |
|                        | 5. Tell me more about why you reacted to the post as you did?            | • How did your relationship with this person influence your response?         | Learning how information is acted upon. |
|                        |                                                                         | • Did your belief about why they posted this information affect how you responded? |                                    |
| Relationship Management| 6. How close is your relationship with the poster on a scale from 1-5, with 5 being intimate and 1 being a stranger |                                                                              | Learning how information is received. |</p>
<table>
<thead>
<tr>
<th>Social Noise Construct</th>
<th>Question</th>
<th>• Sub-Questions</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>or 3rd party?</td>
<td>7. If you received this information from someone else, how might you have reacted differently?</td>
<td></td>
<td>Learning how information is received.</td>
</tr>
<tr>
<td>Image Curation</td>
<td>8. How do you think your responses to posts like this are viewed by others in your social network?</td>
<td></td>
<td>Learning how information is acted upon.</td>
</tr>
<tr>
<td></td>
<td>9. Does considering how your response might be viewed by others in your network affect your behavior?</td>
<td></td>
<td>Learning how information is acted upon.</td>
</tr>
<tr>
<td>Conflict Engagement</td>
<td>10. Did you feel there was a possibility that this information could cause conflict among members of your social network?</td>
<td>• What type of conflict did you anticipate?</td>
<td>Learning how information is understood.</td>
</tr>
<tr>
<td></td>
<td>11. How did you feel your response to the information might add to that conflict?</td>
<td>• Did anticipating this conflict impact how you chose to respond?</td>
<td>Learning how information is understood.</td>
</tr>
<tr>
<td>Cultural Agency</td>
<td>12. Did the information shared involve something you are personally engaged with or passionate about?</td>
<td>• How did your personal connection to the information affect your response?</td>
<td>Learning how information is acted upon.</td>
</tr>
<tr>
<td></td>
<td>13. Are there certain topics or types of information that you are particularly likely to respond to?</td>
<td></td>
<td>Learning how information is acted upon.</td>
</tr>
</tbody>
</table>
APPENDIX B

TAXONOMY OF CODING WITH CODE COUNTS
<table>
<thead>
<tr>
<th>Parent/Child Codes</th>
<th>Code Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Image Curation</td>
<td>83</td>
</tr>
<tr>
<td>1.1 Approval of Others</td>
<td>27</td>
</tr>
<tr>
<td>1.2 Association with Information Source</td>
<td>34</td>
</tr>
<tr>
<td>1.3 Avoidance</td>
<td>14</td>
</tr>
<tr>
<td>1.4 Hobbies/Interests</td>
<td>15</td>
</tr>
<tr>
<td>1.5 Homogeneity of Social Network</td>
<td>1</td>
</tr>
<tr>
<td>1.6 Influence on Others</td>
<td>29</td>
</tr>
<tr>
<td>1.7 Job/Career</td>
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