

# Social noise: the influence of observers on social media information behavior

Social noise

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Received 26 August 2021  
Revised 29 December 2021  
Accepted 30 December 2021

## Abstract

**Purpose** – The purpose of this paper is to introduce the concept of social noise. Under the influence of social noise, a social media user may adjust information behavior based on external cues, attempting to present themselves in a more desirable way to increase their social capital.

**Design/methodology/approach** – A qualitative study informed by an ethnographic approach was used to examine social media information behavior. Participants were observed using Facebook, followed by semi-structured interviews. Data analysis was theoretically grounded in thematic analysis but also adaptive to observations in the data.

**Findings** – Four constructs of social noise were identified in the data. Identity curation emerged as the overarching consideration for individuals. The constructs cultural commitments and relationship management both had a strong presence within the data as well. The fourth construct, conflict management, was identified as social media users decided how to respond to individuals or information with which they did not agree.

**Originality/value** – This study reveals that social media users' awareness of observation by others does impact their information behavior. Efforts to craft a personal reputation, build or maintain relationships, pursue important commitments and manage conflict all influence the observable information behavior of social media users. As a result, observable social media information behavior may not be an accurate reflection of an individual's true thoughts and beliefs.

**Keywords** Information behavior, Social media, Information theory, Information science, Communications, Social sciences

**Paper type** Research paper

## Introduction

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 platforms play a key role in marketing and communication for almost every business, political campaign, religion and social organization, not to mention individual users. Whereas people traditionally relied on newspapers, radio or television news to keep them aware of important events, today a large segment of the population learn about local, national and international happenings online from innumerable, often unfamiliar, sources. As people encounter unprecedented amounts of information, they must determine each item's reliability and value, often without understanding how to do so. This work addresses these unique issues by viewing social media communication and information behavior through the lens of Claude Shannon's (1948) mathematical model of communication and Bandura's (1986, 1994, 1997, 2001) social cognitive theory.

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. Building upon prior theories, I use the term "social noise," to describe this phenomenon. I define social noise as the influence of personal and relational factors on information received via social

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This work was supported by the National Science Foundation under grant number #2030859 to the Computing Research Association for the CIFellows Project.

The author would like to thank her dissertation advisor, Dr. Suliman Hawamdeh, for his guidance throughout this research.



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media, which can confuse, distort or even change the intended message. Under the influence of social noise, a user may temper communication based on external cues regarding what behavior is acceptable or desirable, consciously or unconsciously attempting to present themselves in a more desirable way to increase their social capital. Traditional communication and information behavior models do not account for this social factor, and investigating this new phenomenon is key to unraveling how it affects information behavior. This paper examines the overarching question of how personal and environmental considerations can cause social media users to adjust their information behavior on social media. The research question examined here is: How does awareness of observation by others impact the information behavior of social media users?

This paper begins with a review of the relevant literature on social media communication and information behavior. In the next section, I discuss Claude Shannon's traditional communication theory and Alfred Bandura's social cognitive theory. Then, I introduce the social noise conceptual model, integrating the work of both Shannon and Bandura, and outline the four proposed constructs of the new model. Next, I explain the methodology of this study and, in the following section, give details of the results. Finally, I discuss the outcomes of the study, including implications, limitations and future direction.

## Background

This section highlights the most relevant academic studies and literature on social media communication and information behavior, focusing on social and personal factors that influence users. I then review traditional communication theory and consider it within this context.

### *Social media communication and information behavior*

*Social media communication.* Today people increasingly express themselves through the use of social media, communicating ideas, pictures, comments and even scholarly research (Alshahrani and Pennington, 2018). Social engagement via Facebook is purposeful and used to generate social capital, a term used to describe resources personally available to someone via their social network (Bourdieu, 1986). Social capital is derived from personal relationships and is shaped by multiple dimensions, such as the hierarchy of the social network, shared culture, trust and reliability (Costello, 2017). For the user, indicating personal reactions to others' information provides social support, affirms connections and can affect social status (Gan, 2017; Hayes *et al.*, 2016; Kim, 2014; Sumner *et al.*, 2018). This simple capability "serves an important means for interpersonal relational management and scanning public opinions and sentiments collectively" (Shao and Kwon, 2019, p. 11). Su and Chan (2017) found that seemingly superficial interactions create social bonds by demonstrating the sender is thinking about the receiver. These actions also foster social connectedness when face-to-face relationships can be difficult or even impossible (Abeele *et al.*, 2018). Social media use is restructuring society by changing the everyday information behavior of billions of people (Abeele *et al.*, 2018). Social media has become a powerful force in everyday life, affecting information diffusion, opinion formation and even voting preferences (Lympelopoulous and Lekakos, 2013).

*Social media and relationships.* People use Facebook interactions to align themselves with valued individuals, organizations and belief systems (Valenzuela *et al.*, 2009). Frequent social media users have a strong sense of identification with their social network (Warner-Söderholm *et al.*, 2018). These users tend to believe that information shared within the network reflects common goals, values and beliefs (Warner-Söderholm *et al.*, 2018). In this way, Lympelopoulous and Lekakos (2013) point out that users' opinions affect their connections, and their connections, in turn, affect their opinions. This relational influence can

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lead those sharing political information on social media to unwittingly share misinformation, which is especially likely considering [Vraga and Tully's \(2021\)](#) finding of a lack of news literacy among social media posters. Social media networks also connect groups of people that traditionally have been separated, which can result in tension and conflict ([Mansour, 2020](#)). For example, an individual's family, friends and co-workers may now interact online, bringing their diverse expectations of desired and appropriate interactions.

*Social media and information.* Habermas' theory of the public sphere ([Habermas, 1991](#)) sheds light on the growing role of social media in shaping public opinion as it influences what information is communicated and how relationships influence the messages we receive. Social media has provided new ways for news outlets and other organizations to engage directly with their audience ([Juneström, 2019](#)). Because of the structure of online social networks and the ease of sharing, information spreads very quickly regardless of its source or validity ([Oh et al., 2013](#); [Fenn et al., 2019](#)). This new technology has resulted simultaneously in a massive increase in information quantity and a troubling decrease in quality ([Torres et al., 2018](#)). People often encounter false or misleading information disguised as facts, then unwittingly share this within their online network, thereby perpetuating the spread of misinformation. The detection of misinformation and disinformation on social media is complicated because the context of a written post changes when someone new shares it, often altering the purpose, intention or even the meaning of the message ([Søe, 2017](#)).

As trust in traditional authorities such as government, mass media and science ([Latkin et al., 2020](#); [Mann and Schleifer, 2020](#)) erodes, people often must decide for themselves what to believe, and online social networks are strong influencers in these decisions. Social media platforms facilitate engagement with like-minded others, and homophily is often used as a heuristic for trust ([Costello, 2017](#)). [Garrett \(2009\)](#) found that people use social media environments to increase exposure to information with which they are prone to agree. According to [Habermas \(1991\)](#), because various groups in society have different interests and ideas, they generate their own distinctive communications. On social media, this information is presented in a way that reflects a socially organized communication structure with social factors driving what information is shared and seen, which in turn influences beliefs and behavior.

### Social noise conceptual model

Drawing from the literature on social media communication and information behavior, as well as a review of traditional communication theory, this section introduces the conceptual social noise model. I integrate Shannon's model of communication with the personal and environmental influences of Bandura's social cognitive theory and then describe the social noise model in detail, including its four key constructs.

[Wilson \(2000\)](#) coined the term information behavior and defined it as "the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information use" (p. 46). The following year, [Pettigrew et al. \(2001\)](#) further refined the definition: "the study of how people need, seek, give and use information in different contexts, including the workplace and everyday living," (p. 44). [Savolainen \(2007\)](#) reviews the concept of information behavior, acknowledging the many contributors to its evolution and elevation in the information science literature. Savolainen notes that information behavior incorporates information seeking, information searching and information use and encompasses face-to-face communication as well as passive reception of information. More recently, [Cooke \(2017\)](#) refers to information behavior as a continuum, consisting of "information seeking, information selection, information avoidance, and information usage" (p. 213).

The concept of social noise 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

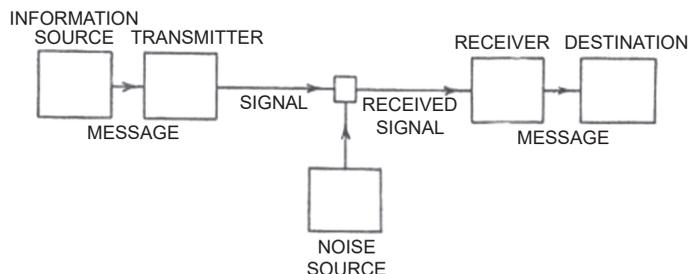
(Ellison *et al.*, 2006). People select impression management strategies based on social network variables such as diversity and audience characteristics (Goffman, 1978). For example, research shows that people share information they believe to be interesting, funny, surprising or simply extreme to gain the attention of and improve social bonding with desired others (Berger, 2014).

Social noise is alluded to in information science literature, notably in Elfreda Chatman's work on small worlds. Chatman (1996) points out that in everyday life people benefit from information received from outsiders, that some aspect of trust must be associated with an information source and that opinion leaders in the community are often sought as trusted sources. She goes on to assert that membership in a social group can lead to information poverty, as a member may have an information need but is hindered from seeking to fill it by social norms and mores, leading to self-protective behavior, hiding the true need and displaying coping behaviors. While these observations bear some resemblance to the concept of social noise, they cannot be applied to social media because Chatman's work was focused within communities in which information needs and sources were highly specialized and in which outsiders were not routinely sought for information or advice.

Chatman's later work with colleagues addressed social types and their influence on how people seek and avoid information, as well as other information activities between those two extremes (Burnett *et al.*, 2001). This research addresses the different social types of individuals within a group and how their level of social desirability impacts their ability to share and disseminate information. The authors use the theory of normative behavior to examine the role of information within a particular community and how the social structures of the group influence interactions around information. They extend this work to virtual communities as well, studying how cultural norms in online environments promote or inhibit the flow of information.

#### *Traditional information theory*

Shannon's (1948) mathematical theory of communication (Figure 1) represents the most well-known model of information flow in the field of information science and focuses on reducing uncertainty or entropy. It uses basic elements of communication to illustrate sending and receiving information with the disruptive potential of physical and semantic noise appearing in the middle, possibly obscuring, distorting or even changing the intended message. While not originally intended to model human communication, Shannon's model was popularized by Warren Weaver and used by communication researchers as well as information theorists (Neuman, 2019). Shannon's work continues to shape communications, data management and other types of information technologies (Verdu, 1998); however, it is inadequate when applied to social media communication because it fails to account for the social observation present in these platforms. Awareness of being observed by valued others on social media creates a form of noise that may interfere with the clear transmission of an intended message to or from the individual.



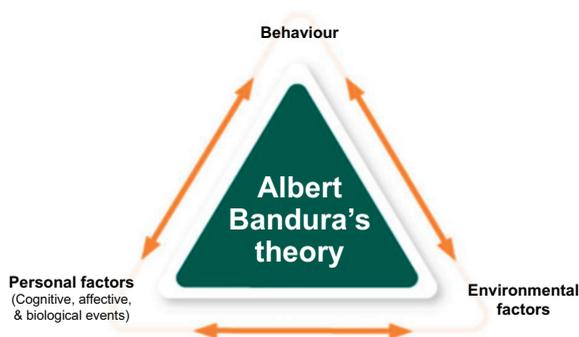
**Figure 1.**  
Shannon's  
model (1948)

*Bandura's social cognitive theory*

The second key theory used to undergird this study is [Bandura's \(1986\)](#) social cognitive theory ([Figure 2](#)), in which personal agency and social structure operate as causal structures for behavior. Users identify with valued groups or individuals by increasing acceptable behavior and decreasing unacceptable behavior. [Bandura \(2001\)](#) expanded this theory to include mass communication, noting that the evolution of technology and growing influence of mass media made the understanding of 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 personal values with the perceived values of their social network to determine how to behave. This has important implications for how information is accepted, believed and potentially shared by people.

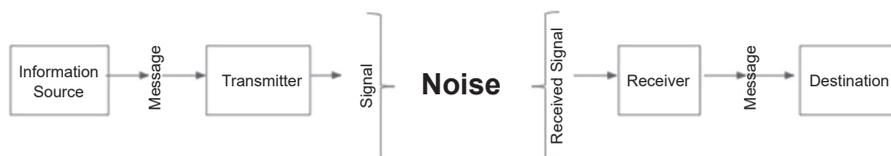
*Synthesis: the social noise model*

The works of Shannon and Bandura provide the foundational concepts of social noise. Together, in the context of social media, they give insight into the psychosocial mechanisms that influence social media information behavior. These theories were previously combined in the work of Benjamin Nye, who noted, "These theories provide complementary processes for examining the flow of information between and within individuals, respectively" ([2014](#), p. 308). In addition, social cognitive theory has previously prompted theory development in information science ([Middleton et al., 2019](#)); 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. [Shannon \(1948\)](#) recognized entropy in his communication model, identifying possible interference by physical and semantic noise, and [Bandura \(2001\)](#) pointed out that when people encounter information online, they combine personal values with perceived values of the social network to determine how to behave toward information. Personal and environmental concerns introduce disorder into social media communication, potentially distorting, obscuring or altering the intended message ([Figure 3](#)). This phenomenon is social noise.



Source(s): Illustration by Gilligan, 2017

**Figure 2.**  
Social cognitive theory  
(Gilligan, 2017)

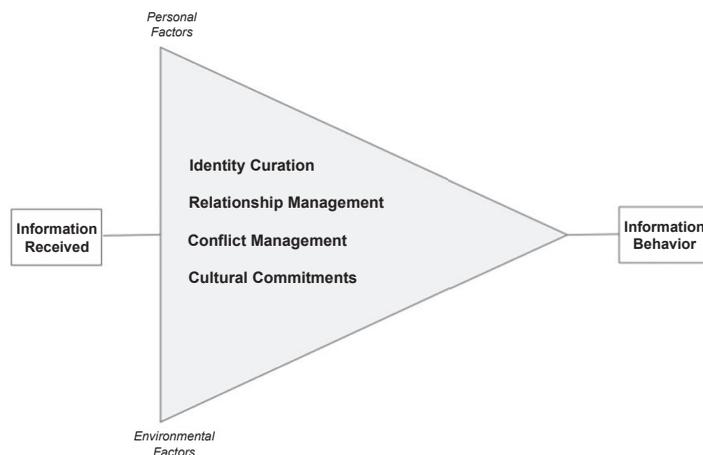


**Figure 3.**  
Noise present in social  
media information  
behavior

The social noise model (Figure 4) illustrates information being received and filtered through personal and environmental factors, impacting how a person behaves toward information. I propose four different constructs through which social noise influences information behavior on social media: identity curation, relationship management, conflict management and cultural commitments. These four constructs are identified because they encompass many psychosocial influences that affect people's information behavior on social media – developing or maintaining self-image, protecting social reputation, navigating interaction with others and acting on items and issues of great personal importance. The four constructs are not intended to be exhaustive or fully explanatory of social noise; instead, they serve as descriptive elements of this new concept that may change or evolve as social noise is more fully understood. This model serves as the theoretical framework for this study.

*Identity curation.* In the context of social noise, identity curation is a user's effort to craft their online image or persona. This includes intentional filtering of online artifacts to create a display they find pleasing (Hogan, 2010). Artifacts include posts, comments, likes, photos, videos, items in which the user is tagged and more. Because social media users are always somewhat aware of being observed (Marwick and Boyd, 2011), this perceived audience influences how users present themselves (Ranzini and Hoek, 2017). Research shows impression management is a crucial motivator for specific online actions and relationships (Ellison *et al.*, 2014; Boyd and Ellison, 2007; Donath and Boyd, 2004) and that people share interesting, funny, surprising or simply extreme information to gain the attention of and improve social bonding with desired others (Berger, 2014). As social media has provided users with increasingly sophisticated tools to differentiate and segment their audiences, impression management has become an effort in targeting the appropriate audience and sending out the most advantageous self-message. Vitak *et al.* (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.

*Relationship management.* As a construct of social noise, relationship management is 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 a particular group or to connect with one key individual. Relationship management also encompasses efforts to connect with other people



**Figure 4.**  
Proposed social  
noise model

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and maintain good relationships, whether exclusively online or as a supplement to face-to-face relationships. Relationship management is seen with close connections, such as family and friends, but also less personal relationships, such as 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-Soderholm *et al.* (2018) believe that one reason people are drawn to social media is the deep need for connection with other people in an increasingly busy world filled with isolated, stressed individuals. These connections can range from weak ties, characterized by a low frequency of communications and opportunistic structures, to strong ties, which, in turn, are more selective and characterized by a higher frequency of communication (Haythornthwaite, 2005).

*Conflict management.* In the context of social noise, conflict management is the level of social conflict with which a user is comfortable and how they handle those interactions. 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. Contentious topics, which can trigger emotional responses, are often the source of conflict (Hara and Sanfillipo, 2017), and Barnidge (2015) found that social media may increase perceptions of disagreement even when none exists. Zeitzoff (2017) explains that conflict seems to thrive on social media because of the reduced cost of communication, its increased speed and the increasing reliance on social media as a vital information source. Hilbert *et al.* (2017) 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.

Most social media users are regular people, not trolls exhibiting “provocative, pseudo-sincere, or disruptive online behaviors,” (Fichman and Vaughn, 2021). Internet trolls use tactics such as character assassination, insulting language, mockery and name-calling (Fichman and Dainas, 2019) to initiate, sustain or increase conflict. Sanfilippo *et al.* (2017) found that trolling behavior can be motivated by enjoyment as well as ideological concerns and malice. When discussing conflict management in the context of social noise, this article discusses the behavior of regular people, purposely excluding bad actors, such as Internet trolls.

*Cultural commitments.* As a construct of social noise, cultural commitments refers to a user’s understanding of their roles and responsibilities within society as well as their perceived ability to affect social change. Cultural commitments are related to the term agency and can be understood as autonomy and personal power in representing oneself in larger contexts, such as national political and cultural arenas (Findley, 2005). 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. For the purposes of this research, the construct cultural commitments is exhibited by social media users who believe in exercising their personal and social power to shape norms, values and beliefs and who feel comfortable stimulating civic debate and advocating for strongly held beliefs (Sommer, 2006). Personal factors, such as gender identity (Haferkamp *et al.*, 2012; Tifferet and Vilnai-Yavetz, 2014), sexual orientation (Alpizar *et al.*, 2012), and ethnic background (Li, 2007) impact cultural commitments as well.

## Methods

Building on the social noise model as the theoretical framework, this section describes this study’s methodology, addressing data collection and analysis. Previous results of topic modeling and data analytics on a large corpus of data from a demographically comparable neighborhood Facebook page (Zimmerman *et al.*, 2020) made it clear that genuine understanding of social noise requires a qualitative approach that provides insight into

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users' influences, motivations and thinking. [Ditchfield and Meredith \(2018\)](#) state that a qualitative approach provides the best insight into users' motivations. Therefore, this study was conducted using observation and semi-structured interviews. The research question examines general social media communication rather than focusing on a specific demographic group or topic; therefore, members of a neighborhood Facebook discussion group were targeted to provide a broad example of user comments and posts. After receiving IRB approval as well as permission from the group moderator, participants were recruited through a neighbor Facebook page which serves a gated community on the southern outskirts of Oklahoma City, Oklahoma. According to the [United States Census Bureau \(2019\)](#), residents in this area have a median household income of \$55,557 per year, 90.5% of households have a computer and 82.9% have broadband Internet. The majority of residents (86.4%) have a high school diploma, 30.7% have a bachelor's degree or higher education, and on average they commute 21.4 min to work. Residents primarily identify as White (67.7%), with other significant populations being Hispanic or Lantio (19.7%) and Black or African American (14.3%). Demographics about the area in which the data collection took place provide more information about the participants and give a broad picture of who they are. None of the behavior observed involved interactions between participants, dealt directly with the neighborhood in which the participants lived or with the neighborhood Facebook page. The group Facebook page was simply used as a tool for recruiting, and its interactions were not a topic of this study.

#### *Data collection*

I collected data via observations and semi-structured interviews with 20 participants, focusing on depth and nuance of data over breadth. I scheduled an online meeting with each individual, emphasizing that participants choose a time that most reflected their normal Facebook behavior. After obtaining verbal consent for recording the observation and interview via Zoom online meeting software, I asked the participant to log into Facebook, share their screen, then find three posts containing a news article or link. For each post, the participant was directed to react as they normally would. After each observation, I conducted a semi-structured interview with the participant, asking them to describe the post they selected, its source, any assumptions they initially had about the information and how they engaged with it – sharing, commenting, liking or simply ignoring it. Then I asked why they responded to the post as they did. The remaining interview questions focused on the participant's relationship to the poster and others in their network, reflection on their personal image, perceived potential for conflict and how important the topic of the post was to them.

#### *Data analysis*

I coded this data using Dedoose, an online software recommended for use with interview and transcription data. This low-cost platform is flexible, web-based and multi-functional, offering excerpting, coding and analysis tools. I highlighted excerpts in which participants commented on or exhibited the influence of others on their information behavior. I then used a recursive method, alternating between an inductive and deductive approach, to assign codes to the excerpts. I reviewed and coded the data using thematic analysis, a proven approach “to organize and describe a data set in rich detail,” ([Braun and Clark, 2006](#), p. 79). 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 and Schensul, 2013](#), p. 66). The Zoom platform generates a written transcript of recorded meetings in less than an hour, and

I reviewed these within 24 h of the interview, comparing it to notes taken during the session and referencing interview recording as needed. This triangulation of data ensured the coding was as accurate and unbiased as possible. Data analysis was theoretically grounded in thematic analysis and informed by previously discussed research but also adaptive to observations in the data. [Table 1](#) shows examples of interview excerpts, along with how codes and themes were applied to each. The full taxonomy of codes is available in [Table A1](#).

## Results

By applying thematic analysis to this interview and observation data, the influence of social noise was clearly observed. Identity curation emerged as the overarching consideration for people, as they balance interactions between cultural commitments, relationship management and conflict management. The constructs cultural commitments and relationship management both had a strong presence within the data as well. Conflict management was a significant consideration for many participants, as they decided how to respond to individuals or information with which they did not agree. Each of these four constructs and several themes associated with each are addressed below.

### *Identity curation*

Within the construct of identity curation, I observed several themes, including association with information, influence on others and approval of others. I applied the code association with information when respondents indicated that being associated with certain types of information could either enhance or detract from their online persona. For example, Participant 2 expressed hesitation to interact with a particular piece of information, fearing how others might label him, saying, “[They’ll think] well, he liked this [post or article], so he’s

Excerpt	Code(s)	Themes
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]	Cultural agency	<ul style="list-style-type: none"> <li>• Association with information</li> <li>• Political/Religious issues</li> <li>• Trust</li> </ul>
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	Conflict engagement Relationship management	<ul style="list-style-type: none"> <li>• Assumptions about others</li> <li>• Enthusiasm</li> <li>• Assumptions about others</li> <li>• Homogeneity of social network</li> <li>• Political/Religious issues</li> </ul>
Participant 19: I do not 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	Cultural agency Conflict engagement Relationship management Image curation	<ul style="list-style-type: none"> <li>• Avoidance</li> <li>• Job/Career</li> <li>• Assumptions about others</li> <li>• Assumptions about others</li> <li>• Approval of others</li> <li>• Association with information</li> <li>• Influence on others</li> <li>• Job/Career</li> </ul>

**Table 1.**  
Example of interview excerpts with codes and themes applied

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racist. You know, people assume things about people by what you share on Facebook.” Participant 3 chose to distance herself from being linked to information on Facebook, expressing distrust for using the platform as a source. She said, “I probably would be more apt to just use this as a reference and not share it at all, partially just because I do not want to repeat things from places like this on Facebook.”

Another key theme within identity curation was influence on others, noted when participants recognized their own information behavior as having an impact on someone else. 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 believes that by indicating interest in an event, she causes others to be interested in it as well. The theme influence on others can also refer to influencing information behavior. For example, Participant 8 believes that posting an article will cause someone in his social network to open and read the information. He said, “This gentleman 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 theme within identity curation is approval of others, a code used when people acknowledge that positive responses from others can affect 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 do not 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.

### *Relationship management*

While cultural commitments are important motivators for information behavior on social media, concerns surrounding the construct relationship management are strong drivers of information behavior as well. By far the largest theme within relationship management was assumptions about others, in which respondents expressed their beliefs about what other people in their social network would think in various situations. For example, Participant 11 made a broad assumption by 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. 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 these assumptions depends to a large degree on the social distance between the assumer and the assumee.

Another key theme within relationship management was sharing information with others, used when participants shared pertinent information with an individual or group 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.” These users are sharing personal information to add value to their relationships with one another.

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The third key theme of relationship management was influence on others, used on excerpts where people stated that their relationships with others affected 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 individual.

### *Conflict management*

The construct conflict management did not appear as often in the data as cultural commitments or relationship management; however, the desire to manage either real or potential conflict with others was seen consistently among participants. The most significant theme within this construct was avoidance. 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 kitties.” 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.

The primary area of actual or anticipated conflict was political/religious issues. Interestingly, many of the comments about political/religious issues also included avoidance. For example, Participant 14 said, “I just probably would not like or comment on political stuff. I’d probably stay out of it,” and Participant 4 echoed, “If it’s political, I do not say anything.” In both 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.

Revealing a completely different attitude toward conflict management, a third theme was enthusiasm, 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 started an online debate about a sensitive issue and seemed to enjoy the conversation becoming heated.

### *Cultural commitments*

The construct cultural commitments was evidenced in several key themes represented in the data, namely, political/religious issues, hobbies/interests and family. Elections, candidates, government policies and issues that are seen as both political and religious, such as abortion, were all mentioned as areas where users felt strongly. While an individual generally may avoid conflict, cultural commitments are areas of deep concern which can drive users to engage more deeply. This can mean reading information, such as when Participant 2 said, “It does not 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 commitments 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.” If a user’s passion for a topic is stronger than their willingness to keep an open mind or accept new information, the potential for social noise interfering in information exchange is heightened.

Hobbies and interests were another key theme within cultural commitments, used when participants mentioned activities in which they invest time or money – for example, sports, gardening, car racing or animal adoption. Participant 19 expressed cultural commitments surrounding gardening by saying, “Yes [I’m passionate about gardening]. I’ll be more inclined

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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 commitments. Participant 5’s concern for homeless animals exemplified this, saying:

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 animal shelters.

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Family is the third key theme of cultural commitments, 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 who said, “I post about what matters to me and my household. We spread awareness of my child’s diagnosis.” Family as a theme within cultural commitments can take slightly different forms, but it generally compels the user to actively post about their family.

## Discussion

Building upon the above data, this section will discuss the study outcomes, limitations and possible future directions. Results indicate that social noise often is present in social media communication and interactions, and these influences 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, and each of these will be discussed further in this section. The section concludes with a revision of the social noise model from the original model proposed which is based on this data analysis.

### *Key findings*

*Avoidance.* Avoidance was an interesting phenomenon that emerged as part of this analysis. Social media users actively avoid information, often a topic or information source with which the user did not want to be linked. Concerns regarding personal image and potential for conflict were frequently cited as reasons for avoiding information. This confirms the behavioral economics work of [Sunstein \(2020\)](#) which emphasizes that people avoid interactions and information they believe will undermine their happiness or cause them sadness. Similarly, [Dai et al. \(2020\)](#) found that the desire to reduce negative emotions and emotional exhaustion often motivate the avoidance of unwanted information. These findings also align with prior research by [Guo et al. \(2020\)](#), which found that both information irrelevance and information overload, along with time pressure, contribute to avoidance behavior.

Within the construct conflict management, 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 commitments and conflict management. With regard to cultural commitments, avoidance was mentioned in relation to political conversations, questionable information sources and people who “post too often about annoying political things,” (Participant 6). Many participants reported not engaging with information for fear of encouraging the Facebook algorithm; they believed if they clicked on the item, they would begin receiving more of that type of information.

*Assumptions.* Besides avoiding individuals and information, social media users often make assumptions that affect their information behavior. Information often is presumed to be of a particular type based on who is sharing it, including corporations, organizations and individuals. Participants often were 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

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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 will 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 vs the “thumbs up” 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.

This observation aligns with [Stark’s \(2016\)](#) assertion that our feelings and beliefs about others create a “push and pull on our behaviors” (p. 15) and with [Davidson and Joinson’s \(2021\)](#) finding that the way people present themselves on social media is in part determined by how they believe they will be perceived by the audience. Similarly, [Díaz Ferreyra et al. \(2017\)](#) found that people used their beliefs about others to decide whether sharing a controversial opinion might result in negative evaluation by others, exclusion from a group or even threaten the status of a relationship or a social role.

*Showing support.* Avoidance and assumptions are less visible effects of social noise, while showing support for valued others is evidenced in proactive information behavior. Participants often reported ignoring a friend’s post they did not agree with, either in the interest of preserving the relationship or to avoid appearing negative or argumentative. For many people, social niceties have emerged as expectations for behavior on social media. For example, participants reported liking informational posts to show support for the poster even when they did not particularly enjoy or feel strongly about the information. 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 as a way to invest in their relationship with the poster.

This observation of the importance of showing support confirms previous work that found some people maintain their online and offline relationships via Facebook, providing all types of support for others, including information, affection and companionship ([Tang et al., 2016](#)). These results are also consistent with the work of [Liu et al. \(2018\)](#) which found many people use social media to request emotional and/or informational support from their social network due to the ease and speed of reaching a widespread audience. This type of online social support has been shown to reduce symptoms of depression ([Frison and Eggermont, 2016](#)), but unfortunately has also been positively associated with Facebook addiction ([Tang et al., 2016](#)).

*Interconnectedness.* Factors influencing social noise often occur simultaneously, with more than one construct influencing a particular instance of information behavior. Relationship management and cultural commitments are the two most influential constructs that introduce social noise into the social media behavior of people. The theme, cultural commitments, occurs simultaneously with conflict management and with identity curation in many instances of information behavior. This finding underscores the importance of cultural commitments 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. 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. Social noise interferes with the purely logical, rational interaction between individual and information that is traditionally presumed in studies of information behavior.

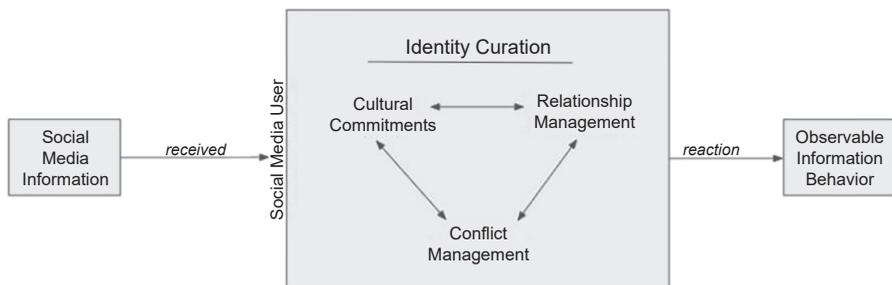
While the four proposed constructs of social noise were all present in the data, they did not occur independently. Finding all these interconnections caused me to reconsider the proposed social noise model (Figure 4) and refine it to reflect these interconnections observed in the data (Figure 5). This revised model illustrates that when a social media user receives information, they process it through their own curated online identity. This identity is influenced by several key factors, including cultural commitments, relationship management and conflict management. These three concerns all influence one another, with cultural commitments and relationship management appearing to have a close connection to one another. After considering a particular piece of information in light of the four constructs, the user then decides how to react to the information. Evidence of social noise was seen in the confluence of relationship management with identity curation and conflict management 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 people's assumptions about others. Social media users 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, 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 commitments).

### *Limitations*

There are several limits to the immediate application of these findings. First, data were collected from people living in a specific geographic location in the US through a neighborhood Facebook group. This limits the sample of users as well as transferability to other contexts. Second, individual 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. Third, this study was conducted in the context of a neighborhood Facebook page where discussion and topics were fairly neutral, but social noise might appear differently in discussions of politics or other contentious topics.

### *Directions for future research*

The results of this exploratory study provide a basis to further develop the social noise model and explore its application in a variety of contexts, particularly on social media platforms where social factors are highly visible. First, repeating this study with diverse users from a variety of geographic locations would provide broader evidence to support the proposed social



**Figure 5.**  
Refined social  
noise model

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noise model and make findings more transferable to other contexts. Second, collecting demographic information for participants in a similar follow-up study would allow researchers to analyze possible correlations between the influence of social noise and factors such as age, education or political affiliation. Third, studying social noise in the context of political, health or social justice information on social media would likely reveal different information about this phenomenon and how it impacts people's information behavior. In addition, more detailed research is needed to illuminate how the four constructs of social noise interact with one another and influence social media information behavior. Emphasis should be given to how social noise might play a role in dealing with misinformation, as well as the impact of encountering information on social media vs purposeful information seeking or search. Finally, future research focused on the affordances of social media platforms should illuminate ways in which social media companies might design their interfaces to help users present themselves and interact with one another more authentically.

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## Conclusion

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. The specific research question addressed was: How does awareness of observation by others impact the information behavior of social media users? Results indicate social media users' awareness of observation by others does impact their information behavior. Thematic analysis of the data revealed that people frequently make assumptions about information based on who posts it. These assumptions often lead users to ignore information, avoiding links to questionable information or getting involved in conflict with others. In this way, awareness of observation by others caused users to interact less with information; however, in other situations, this awareness spurred more interaction with information, such as showing support for the post of a valued friend, even when the participant was personally ambivalent about the information posted. Social media users are actively aware of observation by members of their social network, and this awareness clearly influences how they choose to respond to information.

Addressing the broader question of how personal and environmental considerations cause people to adjust information behavior on social media, results indicate that these factors can influence an individual's information behavior. A person's desire to project a positive image on social media, build and maintain relationships, manage conflict with others and speak out on issues they hold dear all contribute to how that user chooses to engage with information on these platforms. In any given information interaction, more than one of these personal or environmental factors can affect an individual's behavior. Therefore, individuals may respond to information on social media in ways that do not accurately reflect their true beliefs toward that information. Theoretical implications of this initial qualitative study of social noise are a potential new model for the Information Science field and a greater understanding of factors at play in the social media context. For social media users, the recognition of social noise could be an important step in media literacy and recognizing that there are countless factors influencing the online behavior of ourselves as well as every individual we interact with. This is especially important considering the steep rise of misinformation and disinformation on social media. As individual users become aware of the unseen influences behind the liking and sharing of information on social media, they may become less likely to believe these falsehoods or pass them along to others. Implications for practice apply to individual social media users as well as researchers, businesses and other organizations that mine or purchase data from these platforms. For the individual, it is

important to be aware that our own information behavior on social media is affected to some degree by social noise and its constructs. Based on the identity, we strive to curate for ourselves, elements of our cultural commitments, relationship management and the desire to manage conflict can all impact our interaction with information on social media platforms. Researchers, businesses and other organizations using social media data should be aware that concrete, observable information behavior on social media platforms is not guaranteed to be an accurate representation of a person's true beliefs or intentions.

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### Further reading

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Parent/Child codes	Code count
1. Identity curation	83
1.1 Approval of others	27
1.2 Association with information source	34
1.3 Avoidance	14
1.4 Hobbies/Interests	15
1.5 Homogeneity of social network	1
1.6 Influence on others	29
1.7 Job/Career	8
1.8 Personality traits	21
1.9 Political/Religious issues	1
1.10 Privacy	12
2. Relationship management	166
2.1 Approval of others	18
2.2 Assumptions about others	92
2.3 Avoidance	15
2.4 Family	9
2.5 Homogeneity of social network	25
2.6 Influence on others	28
2.7 Job/Career	6
2.8 Manners	24
2.9 Political/Religious issues	25
2.10 Privacy	9
2.11 Sharing information with others	32
2.12 Trust	9
3. Conflict management	81
3.1 Enthusiasm	18
3.2 Approval of others	13
3.3 Assumptions about others	17
3.4 Avoidance	38
3.5 Family	5
3.6 Hobbies/Interests	4
3.7 Homogeneity of social network	11
3.8 Manners	9
3.9 Political/Religious issues	28
3.10 Trust	7
4. Cultural commitments	204
4.1 Association with information source	8
4.2 Avoidance	33
4.3 Family	36
4.4 Gaining knowledge	24
4.5 Hobbies/Interests	56
4.6 Job/Career	29
4.7 Political/Religious issues	59
4.8 Privacy	1
4.9 Sharing information with others	35
4.10 Trust	22

**Table A1.**  
Taxonomy of coding  
with code counts