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# Toward an Integrated Model of Online Communication Attitudes, Communication Frequency, and Relational Closeness

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## ABSTRACT

This article proposes an integrative model of how attitudes about online communication are associated with relational closeness, extending the work of Ledbetter and colleagues. The model stipulates the attitudes about online communication encouraging misunderstandings between relational partners, and causing apprehension in users, negatively predicting attitudes about the ease of online communication. In turn, attitudes about online communication's ease positively predict attitudes toward online social connection and attitudes toward online self-disclosure. Attitudes toward online social connection and self-disclosure then predict the frequency of offline and online communication, with the type of communicative goal, type of relationship, and culture moderating these associations. Offline and online communication, in turn, influences relational closeness, and that relationship is moderated by in-group identity. The model presents a unified framework with eight propositions, and generates opportunities for future research.

## KEYWORDS

Beliefs about online communication; online social connection; online self-disclosure; social identity theory; relational solidarity

Offline and online communication are fundamental means of developing and maintaining interpersonal relationships. The increasing diversity and pervasiveness of media have led to what Parks (2017) calls “mixed-media relationships” (p. 505). As Ledbetter (2014b, p. 456) noted, “[t]o maintain our interpersonal relationships, we juggle Facebook, Twitter, calling, texting, e-mailing, and, of course, meeting face-to-face.” Questions, however, persist as to how attitudes toward online communication influence those relations, both positively and negatively. Ledbetter (2009a, 2010) suggested that theorists should integrate several attitudes about online communication into a single model in order to gain a more complete understanding of how they relate to one another and influence relevant outcomes such as communication through various channels and subsequent relational closeness. Such integration should foster more comprehensive and consistent research on multi-channel communication and relational closeness (Mazer & Ledbetter, 2012). Incorporating offline and online communication into the same model should also help recognize the multimodal nature of relational life, a point that some lines of research have traditionally neglected (see Ledbetter, 2009b; Parks, 2017).

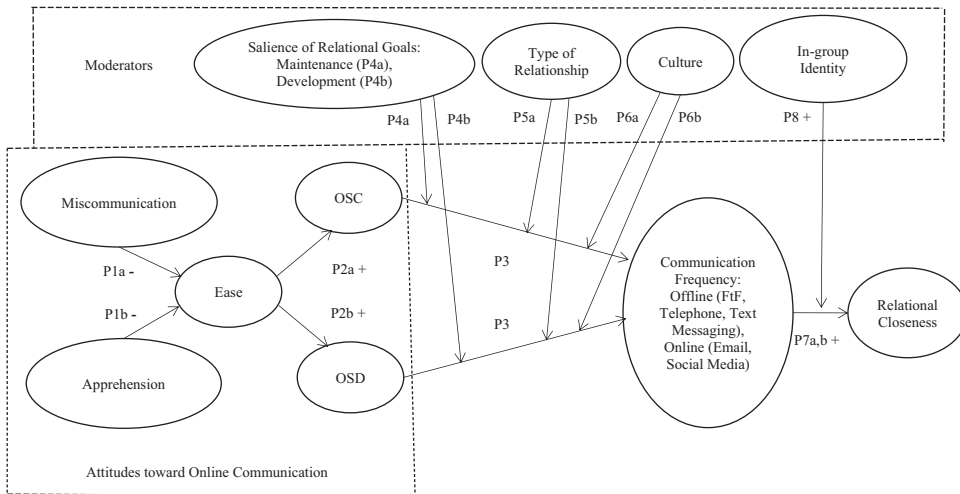
In this article, we consider offline communication as including face-to-face (FtF), telephone, and text messaging, and online communication as including e-mail and social media (for similar groupings of channels, see Ledbetter & Kuznekoff, 2012;

Ledbetter et al., 2011). Because of their visual and audio cues, FtF and telephone communication are often considered richer than e-mail and social media communication, which are generally more textual (Dunaetz, Lisk, & Shin, 2015; Rice, 1987; Trevino, Lengel, & Daft, 1987). Perhaps because of this richness and other factors, communication through these offline channels has been more strongly associated with relational closeness compared to communication through online channels (Ledbetter, 2009b; Ledbetter & Keating, 2015; Ledbetter et al., 2011). Text messaging also seems to differ from online communication in notable ways. For example, e-mail and social media often involve greater time delays between responses compared to text messaging, telephone, and FtF communication.

Relational partners who frequently interact through one of these forms of offline communication usually also interact frequently on another one. Ledbetter (2008), for example, found strong positive correlations between FtF and telephone communication ( $r_s > .80$ ). The strong interrelationships guided Ledbetter to argue that FtF and telephone communication “may be somewhat interchangeable means of maintaining close relational ties” (p. 559). Ledbetter et al. (2011) similarly reported strong and positive interrelationships between FtF, telephone, and text messaging communication as three forms of communication. Conversely, e-mail and other forms of online communication tend to cluster separately from offline forms of communication such as FtF and telephone communication (Kim, Kim, Park, & Rice, 2007), based on their similarity in the types of social relationships involved. Guided by these conceptual and empirical considerations, as well as the desire to remain consistent with previous discussions (e.g., Walther & Ramirez, 2010), we refer to offline and online communication as two general forms of communication through which relational interaction might occur.

Ledbetter’s (2009a) typology of online communication attitudes provides one heuristic basis for exploring the associations between online communication attitudes, offline and online communication, and closeness in a variety of relational contexts. This line of research has considered friendships (Ledbetter, 2009b; Ledbetter, Broeckelman-Post, & Krawsczyn, 2011), family communication (Ledbetter, 2010), romantic dyads (Ledbetter, 2014a), educational relationships (Ledbetter & Finn, 2013, 2016), and Facebook friendships (Ledbetter & Keating, 2015; Ledbetter & Mazer, 2014; Ledbetter et al., 2011).

However, despite these studies of aspects of the online communication attitudes tradition, we identify three opportunities to further extend this research tradition. First, although researchers have integrated the online communication attitudes tradition with media multiplexity theory (e.g., Haythornthwaite, 2005) when examining how offline and online communication predicts relational closeness and other aspects of relational solidarity (Ledbetter, 2015), Ledbetter, Taylor, and Mazer (2016) argued that the large body of research inspired by media multiplexity theory has neglected the extent to which the implications of offline and online communication “depend on the psychological traits and/or states of the communicator. Integrating the social network and socio-psychological approaches of the extant media multiplexity literature serves as one of the more pressing tasks for further development of the theory” (p. 150). We build on this call by merging work on online communication attitudes and media multiplexity theory with work on interactants’ goals and social identities. By doing so, we extend the model beyond goals and dyadic relationships to also include one’s social



**Figure 1.** An integrative model of online communication attitudes, communication frequency, relational closeness, and moderating influences.

and group identity. Second, Taylor and Ledbetter (2017) recently argued that theoretical extensions to the online communication attitudes and media multiplexity traditions need to account for ‘the nature of the relationship as a motivating force for media selection in interpersonal relationships’ (p. 1369; see also Taylor, Ledbetter, & Mazer, 2017). We thus explicate how the type of relationship might also influence how relational closeness is affected by online communication attitudes and communication frequency. Third, Lin and Sackey (2015) argued that one topic in need of more careful elaboration is how cultural differences influence people’s use of offline and online communication in their quest for social connection.

Taken together, these warrants provide a compelling basis for theorizing on how interactants’ goals, social identities, type of relationship, and cultural values affect the extent to which online communication attitudes, and offline and online communication frequency, influence relational closeness.

The following sections elaborate on each component of the proposed model in more detail. We begin by conceptualizing attitudes in general and discussing how five particular online communication attitudes relate to one another. We then explain how these relate to the frequency of offline and online communication. Next, we consider how the type of communicative goal, type of relationship, and culture are plausible moderators of the associations between online communication attitudes and communication frequency through offline and online channels. The subsequent section proposes how offline and online communication frequency affects relational closeness. Finally, we discuss how in-group identification may moderate that relationship. The central aim, then, is to integrate the online communication attitudes tradition with other relevant concepts into a single model to further explicate the interrelationships among online communication attitudes, offline and online communication, and relational closeness (see Figure 1), and to help guide future empirical tests of the implications of online communication attitudes.

## A Theoretical Model of Online Communication Attitudes, Communication Frequency, Relational Closeness, and Moderating Influences

### *Online Communication Attitudes*

#### *Attitudes, in General*

*Attitudes* consist of beliefs or evaluations about a person, group, or object (i.e., an *attitude object*) that come to mind automatically or deliberately, which have the potential to influence behaviors toward the attitude object (Ajzen & Fishbein, 2000; Briñol & Petty, 2015; Payne & Dal Cin, 2015). Cognitions and affect both contribute to the structure of attitudes, with attitudes varying in the extent to which they involve thoughts and feelings (Fabrigar & Petty, 1999; Mayer & Tormala, 2010). Attitudes consist of two sub-dimensions: *valence* describes the degree to which an attitude is favorable versus unfavorable, whereas *certainty* refers to the amount of confidence about the attitude's correctness (Ajzen, 2001; Ryffel, Wirz, Kühne, & Wirth, 2014). It is possible for people to simultaneously hold multiple attitudes about the same attitude object (Eagly & Chaiken, 1998). When an individual holds both positive and negative attitudes about an attitude object, *attitude ambivalence* arises, which can affect an individual's subsequent thoughts and behaviors (Ajzen, 2001; Ran & Yamamoto, 2015; Song & Ewoldsen, 2015; Zhao & Cappella, 2008). It is, therefore, appropriate to consider how multiple attitudes can influence a person's impressions and behaviors in general, and to extend this to the study of attitudes about online communication in particular.

#### *Attitudes about Online Communication, in Particular*

Ledbetter (2009a) conceptualized online communication attitudes as a set of five cognitive and affective beliefs – about miscommunication, apprehension, ease, online social connection, and online self-disclosure – that influence frequency of communication through various channels.

**Miscommunication** refers to the belief that online communication inhibits mutual understanding, possibly generating hard feelings and conflict. Early research on computer-mediated communication emphasized such possible negative implications of the reduced social cues in text-based online media, while later research and critiques showed that computer-mediated communication could convey considerable emotional cues and foster relational development (see Rice, 1987; Rice & Love, 1987; Tong & Walther, 2011; Walther & Parks, 2002). Nevertheless, although computer-mediated communication can convey emotional cues and foster relational development, misunderstandings between relational partners due to aspects of online communication still occur (Byron, 2008; Edwards, Bybee, Frost, Harvey, & Navarro, 2017).

**Apprehension** captures feelings of fear, nervousness, and confusion associated with online communication (Ledbetter, 2009a). Computer-mediated communication apprehension refers to the anxiety arising from online interactions with relational partners (Flaherty, Pearce, & Rubin, 1998). Although the concept is grounded in the more general communication apprehension theory (McCroskey, 1977), some scholars (Scott & Timmerman, 2005) have proposed that online apprehension stems from fear of technology itself, whereas others (Wheless, Eddleman-Spears, Magness, & Preiss, 2005) have suggested it might instead be rooted in feeling unable to manage the large amounts of incoming information in online environments. It could be argued that apprehension is

less relevant in online contexts where people do not anticipate future interactions or having to face the consequences of their communication, especially in anonymous settings. However, when the goal is to foster closeness with ongoing and known relational partners (which is the focus of this integrative model), apprehension is arguably more relevant. Compared to their less-shy counterparts, shy people have demonstrated stronger positive associations between Facebook use and relational closeness to friends (Baker & Oswald, 2010). Baker and Oswald speculated that shy people may experience less apprehension when interacting through online channels (e.g., social media) compared to offline channels (e.g., FtF conversations; see also Orr et al., 2009), likely because they have more time to plan and edit their messages in advance (Chan, 2011; Hiltz & Turoff, 1978; Walther, 1996). Furthermore, the relative lack of visual and auditory cues on some online platforms may reduce shy people's perceptions that relational partners are negatively evaluating them (Stritzke, Nguyen, & Durkin, 2004). As a whole, then, attitudes about apprehension toward online communication may vary considerably, due to personal characteristics such as shyness.

*Ease* describes a perception that online communication is efficient, convenient, and enjoyable (Ledbetter, 2009a). Ease is somewhat similar to the technology acceptance model's (TAM) separate constructs of perceived usefulness and perceived use, widely used in the information systems literature (Davis, 1993). However, perceived usefulness emphasizes the use of an information system to improve job performance, productivity, and effectiveness, while perceived use includes clarity, minimal mental effort, and ability to accomplish goals through the information system (Venkatesh & Davis, 2000). Thus, the only TAM item that is exactly comparable with the online communication "ease" is "easy to use," similar to convenient. In addition to efficiency and convenience, ease involves a perception that online communication is fun and enjoyable. Guided by work on online communication attitudes (Ledbetter, 2009a), the tripartite model (Nabi & Krcmar, 2004), channel expansion theory (Carlson & Zmud, 1999), and other perspectives, Taylor et al. (2017) proposed that enjoyment is one of the main factors motivating relational partners' channel selection. Ledbetter (2009a) showed that convenience, efficiency, and enjoyment of online communication loaded onto a single factor.

*Online social connection* (OSC) and *online self-disclosure* (OSD) are particularly relevant attitudes that have predicted media use. OSC is the belief that online communication is an important way to keep in contact with network members (Hiltz & Turoff, 1978; Ledbetter, 2009a). The belief that online communication can be used to "keep in touch" with relational partners is a widely reported attitude that seems to drive the use of social media (Ellison, Steinfield, & Lampe, 2007; Lampe, Ellison, & Steinfield, 2006). OSD refers to the belief that disclosing aspects about oneself is more comfortable and less embarrassing when done online as opposed to offline (Ledbetter, 2009a). Besides representing a positive attitude as opposed to the negative attitude of apprehension toward communication online, OSD is distinct from apprehension in that apprehension is an *absolute* attitude about the degree to which one becomes fearful and nervous when communicating online, whereas OSD is a *relative* attitude about the extent to which online communication is more or less comfortable than offline communication. The two are also distinct in that apprehension is an attitude about online communication more broadly, whereas OSD is an attitude about online self-disclosure in particular. Engaging in online communication may help people with high OSD avoid anxiety-producing offline communication (Ledbetter & Redd, 2016). For example, Caplan's (2003,

2005) theory of problematic Internet use (PIU) holds that people suffering from psychosocial distress (more specifically, loneliness and depression) are more likely than healthier people to prefer online social interaction over FtF interaction because distressed people perceive online interaction as less threatening and more rewarding than FtF communication. This preference for online interaction over FtF interaction then predicts PIU, which in turn predicts more severe personal, social, and professional problems. For this and other reasons, scholars generally conceive of OSC as fostering healthier outcomes than OSD (for a review, see Ledbetter & Kuznekoff, 2012).

### ***Influences among Online Communication Attitudes***

To date, only one study has empirically tested the role of all five attitudes in a single model. Mazer and Ledbetter (2012) found that miscommunication, apprehension, and ease each predicted only one of two types of Internet use (excessive, compulsive, and excessive Internet use, respectively), while OSD and OSC each predicted *both* compulsive and excessive Internet use. These findings suggest that OSD and OSC might be more proximate predictors of communication frequency, whereas apprehension, ease, and miscommunication might be more distal predictors.

This reasoning is also consistent with Ledbetter's (2009a) original theorizing that miscommunication and apprehension negatively predict ease, and ease in turn positively predicts OSD and OSC. Believing that online communication is likely to foster misunderstandings and relational conflicts (miscommunication) would likely decrease one's perception of the ease of using online technologies. Similarly, believing that online communication generates feelings of nervousness (apprehension) would likely prevent one from believing that communicating online is convenient and efficient (ease). These two relationships may be especially strong early on in people's adoption of online communication, when they are still relatively unsure how to use such technologies, and more generally when social norms for their use have not been well established. In turn, the perception of high ease of online communication is likely to promote the attitudes that online communication can be used to stay in touch with members of one's interpersonal network (OSC) and that online communication is a more comfortable alternative than offline communication for self-disclosure (OSD).

Proposition 1: (a) Miscommunication and (b) apprehension negatively predict ease.

Proposition 2: Ease positively predicts (a) OSC and (b) OSD.

### **Predicting Communication Frequency from Online Communication Attitudes**

OSC and OSD are theorized as two predictors of communication frequency across a variety of offline and online channels (Ledbetter, 2009a). These associations are nuanced and sometimes opposite in direction for the same channel across different studies (e.g., Ledbetter, 2014a; Ledbetter & Finn, 2016). The complexity of these associations suggests a range of moderators may be relevant, which will be discussed below.

Nonetheless, it also seems reasonable to propose how OSC and OSD might generally be directly related to offline and online communication frequency. Higher OSC has repeatedly predicted lower amounts of offline communication (Ledbetter, 2009a; Ledbetter & Kuznekoff,

2012). This might be because staying in touch with relational partners through online channels (on account of high OSC) reduces some of the urgency to interact FtF or through other offline means (e.g., through traditional telephone conversations), for example, if the users had already been updated about recent occurrences in their relational partners' lives. Alternatively, involving a belief that online communication is useful for keeping in touch with relational partners, OSC should positively predict communication frequency through online channels such as social media and e-mail. Involving a relative belief that self-disclosures are more comfortable online as opposed to offline, OSD should negatively predict offline communication and positively predict online communication.

Proposition 3a: OSC (a) negatively predicts offline communication frequency through various channels (e.g., FtF communication, telephone communication), and (b) positively predicts online communication frequency through various channels (e.g., social media).

Proposition 3b: OSD (a) negatively predicts offline communication frequency through various channels (e.g., FtF communication, telephone communication), and (b) positively predicts online communication frequency through various channels (e.g., social media).

### ***Moderators of Relationships between Online Communication Attitudes and Communication Frequency***

As noted above, one unifying theme from studies is that OSC and OSD do not always predict offline and online communication at the main-effects level in ways that would be expected. Rather, the associations between these attitudes and communication frequency seem to be influenced by a range of moderating factors. Knapp and Daly (2011) advanced a set of characteristics that inform the unfolding of interpersonal interactions, two of which are social cognitions and context. We argue that *the type of communicative goal* is a highly relevant social cognition during interaction, whereas *the type of relationship* and *culture* are two important contextual variables during interaction. Alternatively, one may consider these three as representing individual, dyadic, and social categories of moderators (a representative of the group category of social moderators is also applied to the model's final-predicted relationship). The following sections justify and outline these three moderators in more detail.

#### ***Type of Communicative Goal***

A conversational goal is an objective a person wishes to accomplish in an interaction (Dillard, Segrin, & Harden, 1989). Online communication attitudes seem more likely to influence communication frequency when certain conversational goals are highly salient, most notably when one's goal is to pursue *relational maintenance* or *relational development* (as opposed to, say, pursuing information acquisition goals or entertainment goals; see Bazarova & Choi, 2014). *Relational maintenance* refers to communication that keeps a relationship in a desired or satisfied state (Canary & Stafford, 1994; Dindia, 2003), whereas *relational development* moves a relationship to a more intimate level (Altman & Taylor, 1973).

***Relational Maintenance.*** Scholars have proposed social media to be a channel especially well suited for relational maintenance due to the low effort required; the increased

affordances of awareness, accessibility, and monitoring of relational partners on social media; and the persistence of online relationships over time (Burke & Kraut, 2016; Ellison, Vitak, Gray, & Lampe, 2014; Rice et al., 2017; Tong & Walther, 2011). Although the public monitoring of relational partners does not operate the same way in e-mail as it does in social media, several of these arguments also apply to e-mail (e.g., e-mail also allows for low-cost communication, increased accessibility of relational partners, and persistence of relationships over time; Holladay & Seipke, 2007; Stafford, Kline, & Dimmick, 1999).

Relational maintenance goals likely moderate the role of OSC in predicting communication frequency. The focus of relational maintenance efforts on keeping pre-established relationships in a desired state is especially well-aligned with the attitude that online communication is a useful tool for “staying in touch” with past and present relational partners (OSC). We would, therefore, expect the positive associations between OSC and online communication frequency observed in previous studies (Ledbetter, 2009a, 2014a; Ledbetter et al., 2011) to be amplified when relational maintenance goals are more salient. On the other hand, the inverse associations between OSC and offline communication frequency observed in previous studies (Ledbetter, 2009a; Ledbetter & Kuznekoff, 2012) may become attenuated or nonsignificant when relational maintenance goals are more salient. As people with a variety of OSC levels increasingly desire to maintain a relationship, they may employ a range of offline channels to stay in touch, including FtF contact, telephone calls, and text messaging. Even people who believe online communication is a useful way for staying in touch (i.e., people with high OSC) may use various forms of offline communication when they strongly desire to maintain a relationship (Haythornthwaite & Wellman, 1998; Kim et al., 2007).

***Relational Development.*** As a goal concerned with moving a relationship to another (typically more intimate) level, one’s relational development goal may interact with the belief that online communication provides a more comfortable venue than offline communication for self-disclosure (OSD). When relational development is a more salient goal, the positive associations between OSD and online communication frequency are likely to become stronger. The moderating role for relational development goals in influencing the associations between OSD and offline communication frequency appears to be a more open question. Engaging in frequent offline communication is a central process for attaining relational development goals (Altman & Taylor, 1973; Knapp, 1978; Sunnafrank, 1986). This is partially because offline communication often contains a rich set of nonverbal cues conducive to the experience of affect and greater relational intimacy (e.g., vocal cues in telephone conversations, facial expressions in FtF conversations). Thus, we might expect that the inverse associations between OSD and offline communication frequency observed in previous research (Ledbetter, 2009a) to become nonsignificant when relational development goals are more salient. A competing possibility, however, is that strong relational development goals might activate one’s OSD as a highly influential factor in predicting offline communication. This could be because OSD is based on the relative belief that online communication is more comfortable for self-disclosing than is offline communication. By virtue of believing that offline communication is more uncomfortable and face-threatening than online communication, people with high OSD might especially go out of their way to avoid immediate forms of offline communication when they want to gain greater intimacy with a relational partner. If this were the case, highly

salient relational development goals might strengthen the inverse associations between OSD and offline communication frequency.

We do not anticipate relational maintenance and relational development to have the same moderating influences. Rather, relational maintenance in tandem with OSC, and relational development in tandem with OSD, should be differentially powerful predictors of communication frequency. This is because beliefs about online communication as a useful means to “stay in touch” seem particularly relevant during relational maintenance, whereas beliefs about self-disclosure seem especially relevant during relational development (Altman & Taylor, 1973; Subrahmanyam, Reich, Waechter, & Espinoza, 2008; Valkenburg & Peter, 2007). However, given that the precise manner in which the salience of relational development goals is likely to act as a moderator when predicting offline communication frequency from OSD remains less clear, for Proposition 4b2, we propose moderation without specifying the exact direction:

Proposition 4: (a) Salience of relational maintenance goals will moderate the associations between OSC and communication frequency. (a1) The positive associations between OSC and online communication frequency will be amplified when relational maintenance goals are highly salient. (a2) The inverse associations between OSC and offline communication frequency will be attenuated or nonsignificant when relational maintenance goals are highly salient. (b) Salience of relational development goals will moderate the associations between OSD and communication frequency. (b1) The positive associations between OSD and online communication frequency will be amplified when relational development goals are highly salient. (b2) Strength of relational development goals will also moderate the associations between OSD and offline communication frequency.

### **Type of Relationship**

Type of relationship might also influence the extent to which OSC and OSD predict offline and online communication frequency, because different types of relationships invoke different rules and normative expectations for interaction (Baym, Zhang, Kunkel, Ledbetter, & Lin, 2007; Canary, Cupach, & Messman, 1995; Ledbetter, 2014a; Merolla, 2008). Consider four examples.

First, online communication attitudes might be relatively unlikely to influence the frequency of offline and online communication in many *supervisor-employee* relationships because those are often delineated by well-defined communication rules. An employee might have to constantly interact with a supervisor FtF, through the telephone, or e-mail regardless of that employee’s OSC and OSD levels (Morreale, Staley, Stavrositu, & Krakowiak, 2015).

Second, OSC and OSD might be more predictive of some types of communication frequency in more geographically close relationships. Relational partners in geographically distant relationships are often limited in the extent to which they can engage in FtF communication, regardless of their personal preferences for FtF interaction (Holladay & Seipke, 2007). On the other hand, by virtue of having a wider array of communication channels at their disposal, geographically close partners might experience greater leeway in strategically selecting the specific communication channels that best align with their OSC and OSD levels.

A third example concerns *opposite-sex versus same-sex friendships*. Ledbetter, Broeckelman-Post et al. (2011) found that opposite-sex friends communicated less frequently

than same-sex friends through FtF and telephone channels, but equally through online communication, as it lowered barriers to cross-sex friendship often encountered through offline forms of communication. Similarly, Guerrero and Chavez (2005) reported that strictly platonic opposite-sex friends engaged in less FtF and telephone contact compared to friends in other types of relationships (e.g., friendships in which both partners desired a romantic relationship), suggesting that reduced offline contact might protect against relational escalation. If empirically supported, such moderation would be consistent with past theorizing that online communication helps break down the normative constraints of opposite-sex friendships between heterosexual people that occur in offline communication (Parks & Roberts, 1998). For *opposite-sex* friends, OSD and OSC might predict the frequency of online communication (i.e., social media communication and e-mail), but not frequency of offline communication (i.e., FtF, telephone, and text messaging) because opposite-sex friends seem to already have other normative constraints that govern and limit their use of offline channels. For *same-sex* friends, online communication attitudes might predict both offline and online communication frequency because these friends seem willing to use a variety of channels when the opportunity presents itself, and their personal predispositions (OSC and OSD) are likely to influence such communication.

Fourth, the extent to which a relationship involves *strong or weak social ties* might influence the associations between online communication attitudes and communication frequency (Ledbetter & Mazer, 2014). Strong ties are typically with homophilous others, who can provide support and a sense of belongingness. Interactions with strong and enduring ties may foster more self-disclosure, honest discussion, support, and tolerance of differences (Morey, Eveland, & Hutchens, 2012). Consistent with media multiplexity theory (e.g., Haythornthwaite, 2005), Ellison et al. (2014) noted that stronger ties can forego social media communication with each other in favor of offline communication (i.e., FtF, telephone, or text messaging communication) in ways that are unavailable to weaker ties, for whom online communication might be the only plausible mode of contact. This suggests that OSC and OSD might predict offline communication frequency for strong-tie partners, whereas these attitudes might not be able to predict offline communication frequency for weak-tie relations.

Taken together, these examples suggest the following nondirectional proposition about the role of relationship types in general:

Proposition 5: Type of relationship will moderate the associations of (a) OSC and (b) OSD with offline and online communication frequency.

### **Culture**

Much interpersonal research on online communication focuses on a single culture or country (Chu & Choi, 2010). However, although intercultural research on OSD and OSC is still in its infancy, extant work suggests intriguing possibilities. Compared to U.S. American students (who typically manifest a more individualistic culture), Ghanaian students (who typically represent a more collectivistic culture) have reported higher levels of OSD (Lin & Sackey, 2015). The researchers argued that Ghanaian students may think of their Facebook friends as comprising a tight-knit virtual community, consistent with their collectivistic values. This view of Facebook friendships might resemble views of family relationships, with both groups

of people consisting of relational partners who are seen as integral parts of one's daily life and inner circle. Lin and Sackey further noted that Ghanaian students may, therefore, engage in high levels of online communication as a way of informing people in this cohesive inner circle about new developments in their lives.

In parallel, Cho and Park (2013) found that people from a Korean background self-disclosed routine aspects of their lives more frequently on social media than did people from a U.S. American background. The researchers argued that for people who hold individualistic values (which might include many U.S. American people), choosing to not engage in frequent self-disclosures online might be a relatively stress-free way to navigate relational life and maintain their independence. By refraining from frequent self-disclosures in online channels, people with individualistic values might enjoy not feeling obligated to elaborate on their life circumstances when relational partners ask follow-up questions. Cho and Park also suggested that people with individualistic values might assume their online relational partners also hold individualistic values and, by extension, might also assume that these relational partners are not highly interested in learning about new developments in their lives (see also Chu & Choi, 2010; Kim, Sohn, & Choi, 2011). It stands to reason, then, that holding individualistic values may disrupt or attenuate the extent to which OSC and OSD predict communication frequency.

Proposition 6: Culture will moderate the associations of (a) OSC and (b) OSD with offline and online communication frequency. Associations will be enhanced for people who subscribe to collectivistic values and attenuated for people who subscribe to individualistic values.

## ***Predicting Relational Closeness from Communication Frequency***

### ***The Main Effects of Offline and Online Communication Frequency on Relational Closeness***

Humans have a basic need to develop and maintain ongoing social relationships (Baumeister & Leary, 1995). Classical interpersonal theorizing suggests that more frequent communication between relational partners predicts greater relational closeness, reduced uncertainty, and other conditions conducive to realizing high-solidarity relationships (e.g., Altman & Taylor, 1973; Berger & Calabrese, 1975). Yet more communication, in general, has both negative and positive implications (Petronio, Olson, & Dollar, 1989). The negative position acknowledges that frequent communication may not always lead to favorable outcomes and may indeed generate conflict, whereas the positive position holds that frequent communication often leads to relational solidarity and other desirable outcomes.

More specifically, there is a long tradition of studying how online communication may negatively and positively affect the relational quality (Haythornthwaite, 2005; Katz & Rice, 2002; Rainie & Wellman, 2012; Rice & Hagen, 2010; Walther & Parks, 2002). Negative positions argue that frequent online communication is associated with lean cues, PIU, loneliness, selective exposure, and bridging social capital, which, in the absence of bonding social capital, can lead to lower-quality relationships. Positive aspects include greater exposure to diverse sources of information, online social support, maintenance of distant ties, and compensation for FtF introversion. The online communication attitudes typology is based in the positive tradition, as the frequency of using various communication

channels has been shown to enhance relational closeness with specific partners (e.g., Ledbetter & Kuznekoff, 2012).

**Communication frequency** refers to people's overall or global perceptions of how often they interact with a relational partner in offline or online channels, rather than their recollections of any single message exchanged or the proportion of total communication that occurs in a given channel (Baym et al., 2007; Ledbetter, 2009b, 2014b). The conceptual model advanced in this article focuses on communication frequency to remain consistent with much of the previous research on online communication attitudes. However, it should be noted that potential exists in future research to also probe the specific content of interactions that accompany more frequent communication. For example, given that research has repeatedly found communication frequency to positively predict relational closeness (Ledbetter, 2009b; Ledbetter & Keating, 2015; Ledbetter et al., 2011), frequent communication across a variety of offline and online channels might involve low levels of destructive conflict (e.g., criticism, contempt, and defensiveness) or high levels of constructive communication (e.g., validation; Holman & Jarvis, 2003).

**Relational closeness** describes feelings of psychological warmth and proximity to a specific relational partner (Vangelisti & Caughlin, 1997). While associations between communication frequency and relational closeness have been found to be significant and positive for both offline communication (e.g., FtF communication) and for online communication (e.g., social media; Ledbetter, 2009b; Ledbetter & Keating, 2015; Ledbetter et al., 2011), they tend to be stronger for offline communication. These differential strengths may be because online communication may have fewer vocal and other non-verbal cues that may help facilitate relational closeness.<sup>1</sup> Consistent with previous research stemming from the online communication attitudes tradition:

Proposition 7: (a) Offline communication frequency and (b) online communication frequency positively predict relational closeness. Associations involving offline communication frequency are expected to be stronger than associations involving online communication frequency.

### ***The Moderating Effects of Group Identity on the Associations between Communication Frequency and Relational Closeness***

Further elaboration of Ledbetter's argument has suggested additional moderators likely to influence the extent to which communication frequency predicts relational closeness (Ledbetter & Finn, 2016; Ledbetter & Mazer, 2014; Ledbetter & Redd, 2016). Primary among these potential moderators is social identity, in particular, salient in-group identity. Here, *in-group identity* refers to evaluative judgments of a relational partner's social group membership as overlapping with one's own social group membership. The basic argument is that relational closeness reflects social or group aspects in addition to dyadic factors; thus, using media to further relational closeness should be influenced by the larger social context of that relationship.

Social identity theory (Tajfel & Turner, 1986) and communication accommodation theory (Giles, 2016) both propose that interaction partners are motivated to establish relational solidarity with valued in-group members, while distancing themselves from (especially if devalued) outgroup members. The social identity model of deindividuation

effects (SIDE model: Postmes, Spears, & Lea, 1998) also holds that computer-mediated communication (especially in anonymous contexts) can deindividuate members and invoke group identities, which subsequently encourage favorable perceptions and communicative behaviors toward in-group members and unfavorable perceptions and behaviors toward outgroup members. Taken together, these perspectives suggest that frequent communication can lead to differential outcomes depending on how an interaction partner is perceived in relation to oneself and one's group. (For a similar argument of how group identification should modify people's reactions to deviance during online communication, see Nicholls & Rice, 2017.)

The association between communication frequency and relational closeness is likely to be strong and positive when in-group identities with the interaction partner are salient, but the association is likely to be attenuated (or perhaps even negative, if increased exposure to out-group members reinforces stereotypes or in-group defensiveness) when in-group identities are weak. The salience of in-group identities might shift as relational partners communicate across offline and online channels, as different channels might invoke different contextual concerns such as the formality of the relationship (Parks, 2017). Salience may also vary over time in online media as users become more familiar with the medium and with their partners (according to channel expansion, social information processing, and hyperpersonal theories; Carlson & Zmud, 1999; Huan, Chuan, Trevor, & Detenber, 2004; Walther, 1996). For instance, employees might perceive their supervisors as outgroup members when communicating offline (e.g., when communicating FtF: "they are my boss, and I need to keep this relationship formal"), but as in-group members when communicating online (e.g., on social media: "they are also my friend"). As noted earlier, the SIDE model also argues that in the leaner and anonymous online contexts, consequent deindividuation can invoke group norms, so that users may experience greater intergroup salience, but less dyadic relational closeness. Taken together, this reasoning suggests the following:

Proposition 8: The extent to which an interaction partner is perceived as an in-group member will moderate the association between communication frequency and relational closeness, such that the positive association will be stronger when in-group identities are more salient but weaker when in-group identities are less salient.

## Conclusions and Opportunities for Future Research

The model advanced here represents one viable synthesis of previous research related to the initial model of online communication attitudes. For example, positing online communication attitudes as predictors of communication frequency is consistent with various theoretical perspectives suggesting that personal attitudes predict behavior (e.g., Ajzen, 1984). Similarly, positing offline and online communication as predictors of relational closeness is consistent with past theorizing and research (e.g., Altman & Taylor, 1973; Ledbetter & Kuznekoff, 2012). This extended model also makes causal processes more explicit, and incorporates select relevant moderating influences.

Future researchers could also consider how the model's proposed interrelationships might operate differently depending on the specific medium within each broad category of online

and offline. One potent explanation for these potential differences is the attributes and affordances of different channels (Burke & Kraut, 2016; Oh & Syn, 2015; Rice, 1987; Rice et al., 2017). That is, the strength of relational maintenance and development communication goals as moderators of the attitude-online communication frequency associations might vary across different types of social media platforms to the extent that they differ in their communicative affordances. For example, Oh and Syn (2015) found that users perceived Facebook as a social media platform more conducive to facilitating social engagements with relational partners than were other social media platforms such as Delicious, Flickr, and YouTube. Hence, the proposed interrelationships might be more relevant to Facebook and other social media platforms well suited for social engagements compared to other social media platforms more suited for broadcasting content, or learning or organizing knowledge.

Also, particular affordances such as pervasiveness and awareness may foster more positive OSC but less positive OSD, due to concerns about communication privacy management. Relatedly, future research could account for how specific features of offline and online channels (e.g., the degree to which a channel is synchronous) moderate how online communication attitudes predict relational closeness. Investigations in this vein might also consider the meanings, expectations, norms, and rituals that people attach to media over time (see Sitkin, Sutcliffe, & Barrios-Choplin, 1992). Further, as Parks (2017) proposes, scholars should consider how relationships involve the concurrent, sequential, and interwoven use of multiple media, with some being central and others being peripheral at any given point in a relationship, some with one partner and others with multiple people.

Future researchers are also encouraged to consider and test additional variants of the moderators we proposed. For example, a fuller exposition of the model would include a typology of relevant relationship types that could be used to hypothesize their specified positive or negative moderating influences. Additionally, we discussed culture in terms of values associated with individualism and collectivism, but researchers could also consider culture in terms of the values and communication climate relating to media use and relational closeness promoted within different organizations (Cho, Park, & Ordóñez, 2013; Falcione & Kaplan, 1984).

Research on online communication attitudes has grown tremendously since the original explication of five online communication attitudes a decade ago (Ledbetter, 2009a). Our review synthesized research on these attitudes and related literature to propose a model of how those online communication attitudes predict offline and online communication frequency and indirectly predict relational closeness, as well as taking into account theoretically relevant moderators. The past decade has shown the online communication attitudes tradition to be a heuristic lens from which to study relational communication and closeness, and, given the continually increasing role, forms, and use of media, the proposed model has the potential to continue advancing this line of research.

## Note

1. The integrative model proposed in this article relies on the argument that the increased number and richness of nonverbal cues in offline communication (e.g., FtF communication) may help account for why such communication has been more strongly associated

with relational closeness compared to online communication. However, it should also be noted that other scholars have proposed alternative explanations. For example, electronic propinquity theory (Korzenny, 1978) holds that various factors contribute to the psychological closeness experienced by communicators, including channel bandwidth (somewhat akin to media richness), communicators' interpersonal skills, and the number of alternative channels communicators can choose to utilize (with a channel fostering greater relational closeness when it is the only channel communicators can choose to use, as opposed to when that same channel is one among several viable channels at communicators' disposal). Walther (2011, 2002) argued that although electronic propinquity theory remains underutilized inside and outside the communication discipline, it may provide additional or competing explanations for why certain channels might foster relational closeness more than other channels.

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No potential conflict of interest was reported by the authors.

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