ORIGINAL PAPER

The influence of text-based technology-mediated communication on the connection quality of workplace relationships: the mediating role of emotional labor

Anthony Silard[1] · Mary Beth Watson-Manheim[2] · Nuno Jose Lopes[3]

Abstract

Teleworking experienced exponential growth worldwide during the Covid-19 lockdown. It is very likely that once the limitations for travelling and gathering are over, an important share of the work of organizational members will still be done remotely. We offer a new set of considerations for employees that communicate remotely via text-based technology-mediated communication (TMC) by focusing on the emotional labor challenges associated with TMC and how these challenges influence the connection quality of workplace relationships. We also delineate the mediating effects of two outcomes of TMC, decreased co-presence and informational and interactional demands, in this process. We build on previous literature, especially Walther's (1996) triadic theory of impersonal/interpersonal/hyperpersonal TMC, to support our theoretical assertions. We develop specific propositions and a theoretical model related to the mediating effects of decreased co-presence, informational and interactional demands, and emotional labor on the link between text-based technology-mediated communication (TMC) and the connection quality of workplace relationships.

Keywords Emotional labor · Technology-mediated communication · Workplace relationships · Connection quality

1 Introduction

Meeting the emotion demands of organizational work (Huang and Lin 2019; Van Kleef et al. 2012) can be challenging and require organizational actors to express both positive and negative emotions to comply with display norms and produce beneficial organizational outcomes (Lindebaum and Jordan, 2012; Lindebaum et al.

Extended author information available on the last page of the article

2016; Rothman and Melwani 2017). While considerable advances have been made in understanding the emotion-imbued quality of connections (Stephens et al. 2011) and relationships (Sher et al. 2019; Sluss and Ashforth 2007) in organizations, these studies have underspecified how relationships are elaborated by the use of digital technology, despite the fact that it has become increasingly integrated into workplace communication and has altered the work environment (McAfee and Brynjolfsson 2012), particularly through the advent of virtual teams (Lin et al. 2019; Schulze and Krumm 2017), which have become ubiquitous in the Covid-19 pandemic (Wang et al. 2021).

Considering that text-based technology-mediated communication[1] (TMC) has transformed most jobs (Bejaković and Mrnjavac 2020) and produced numerous effects on the well-being and health of employees (Shah et al. 2017), it cannot be neglected. Although employees have many options for collaboration and communication, a recent survey of US adults who use digital technology at work found that text-based communication media such as email and text messaging accounts are reported to be used in more than 50% of interactions while real-time synchronous media (e.g., telephone) account for about 10% (O'Donnell 2016, 2017). Moreover, increasing digitization of the workplace is leading to increased remote collaboration and integration of new technologies into work practices. For example, as remote work increased significantly during COVID-19, chat applications became even more critical for collaboration, especially in shared households or other locations where privacy was needed or internet bandwidth was not adequate for video (Kütt et al. 2020). "I'll Slack you" is a popular phrase in workplaces indicating the extensive use of the Slack™ messaging app. In 2019, Slack claimed to host 10+ million daily users (York 2020). Team-based communication platforms, e.g., Slack™, Microsoft Teams ™, increasingly incorporate new technologies such as chatbots, which often depend on machine learning or artificial intelligence, to allow users to interact via text or voice commands translated to text (such as Alexa ™) (Lebeuf et al. 2017). Due to the continued popularity of text-based TMC, we focus our attention on this category of media.

Our analysis makes a number of contributions to various research literatures germane to understanding the role of emotional labor in mediating the influence of text-based TMC on the connection quality of workplace relationships. First, we build on Walther's (1996) triadic theory of impersonal/interpersonal/hyper-personal TMC, which also provides a theoretical anchor to help understand this mediated influence relationship. Second, we contribute to the literature on the influence of TMC on workplace relationships (Byron 2008; Mazmanian et al. 2013). Third, we provide a much-needed update to the outcomes associated with the various forms of emotional labor in the workplace (Grandey et al. 2015; Humphrey et al. 2015) by enumerating how the performance of the various types of emotional labor (e.g., surface acting, deep acting and genuine emotional labor) influence a critical outcome—the connection quality between organizational actors—in today's highly-digitized workplace.

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[1] In this paper, when we refer to TMC, we are alluding solely to text-based mechanisms of technology-mediated communication, such as emailing, texting and posting text in work-related social media (e.g., organization-specific chat boards). We are not referring to richer-media TMC such as videoconferencing.

Fourth, we contribute to research on high-quality connections (Stephens et al. 2011) by examining the implications of TMC on the creation and sustenance of connection quality among organizational members. Fifth, we contribute to the literature on new forms of work in today's TMC-mediated workplace (Kütt et al. 2020; McAfee and Brynjolfsson 2012; Shah et al. 2017) by examining the role of emotional labor in influencing the quality of workplace relationships in these new, rapidly evolving work environments.

We will now examine the role of emotional labor in the relationship between TMC (e.g., email, SMS text messages, instant messaging) and the connection quality of workplace relationships. To better understand the relationship between TMC and connection quality, it is imperative to first understand how workplace relationships characterized by high connection quality are formed through a face-to-face (FtF; i.e., non-TMC) medium. We will first describe connection quality as it is elaborated in the workplace, and then examine how emotional labor influences connection quality in workplace relationships.

2 Connection quality

To define connection quality, we turn to Dutton and Heaphy's (2003) development of high-quality connections, or "short-term, dyadic interactions that are positive in terms of the subjective experience of the connected individuals" (Stephens et al. 2011, p. 3). Four elements of Dutton and Heaphy's construction of high-quality connections are particularly germane to how we define connection quality: (1) A connection exists between two individuals and is, hence, dyadic (instead of between two groups or an individual and a group); (2) A connection can be understood as a "micro-unit of a relationship" (connections can accumulate over time to "become" a relationship; Heaphy and Dutton 2008, p. 139); (3) A connection is a short-term moment that can—but does not always— recur; and (4) A connection is construed as high quality only if both individuals subjectively interpret it as a positive affective experience.

High 'connection quality', then, is a high-quality connection, or a mutually experienced positive affective state of relatedness, an essential state for the integrity, health, and growth of an individual (Deci and Ryan 1991; Reis et al. 2000). Low connection quality, or a low-quality connection, conversely, describes a mutually felt negative emotional state that cannot be classified as relatedness. Connection quality is an important antecedent of high-quality workplace relationships that any communication medium between organizational actors, including TMC, must take into account, as workplace communication can only be deemed effective if it fosters high-quality workplace relationships (Ferris et al. 2009). We will first examine the effects of a commonly experienced emotion practice in organizations, emotional labor (Humphrey et al. 2015), on connection quality.

3 The influence of emotional labor on the connection quality of workplace relationships

Emotional labor[2] is an organization-specific form of emotion regulation in which employees, as part of their job duties, manage their emotion display to conform to normative "display rules" (Diefendorff et al. 2011). As all organizations are unique and the emotion display norms tend to differ based on industry (Harris 2002)—for example, how emotions are normatively expressed in a nonprofit health care or service organization may be vastly different than in a private-sector engineering company or law firm or public sector education agency; and, in fact, emotion display norms can differ by units within the same organization (Diefendorff et al. 2011)—in our analysis we examine the role of emotional labor generally, rather than in one specific sector or industry. When an organizational actor's felt and displayed emotions are distinct, emotional labor is essentially the practice of emotion regulation in the workplace (Grandey 2000) or "the process of regulating both feelings and expressions for organizational goals" (p. 97). Emotion regulation is concerned with "attempts to alter the category of emotion in which one finds oneself" (Russell 2003, p. 147) or "the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions" (Gross 1998, p. 275). An individual practices emotion regulation when they display emotions different from the emotions they feel (Barsade and Gibson 2007). When an organizational actor's felt and displayed emotion are the same, and their expression of this emotion is consistent with organizational emotion display norms, the actor is still practicing emotional labor (as they are displaying an emotion that comports with organizational display rules). This form of emotional labor (which does not involve emotion regulation) was conceptualized later in the emotional labor literature and is referred to as "genuine emotional labor" (Grandey et al. 2015; Humphrey et al. 2015).

Emotional labor has largely been fashioned in the literature as a uni-directional, or intrapersonal, phenomenon in which an employee (such as a service representative) practices emotion regulation (e.g., displaying an emotion distinct from their felt emotion) in order to provide some benefit to an alter (e.g., a customer). Most research has focused on the relationship between emotional labor and intrapersonal consequences. In other words, "the way people regulate their emotions may influence their own feelings, behaviors, and well-being and performance" (Zhan et al., 2015, p. 526). Equally important for our analysis, other recent research has begun to investigate the interpersonal, or relational, process of emotion regulation and subsequent consequences; in other words, how the strategies employed to regulate emotions may influence the interaction partner's feelings, perceptions, and behaviors (Zhan et al., 2015).

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[2] While emotional labor is an *intrapersonal* variable and connection quality is a *dyadic or interpersonal* variable, for congruity in this paper when we refer to emotional labor we are describing the emotional labor performances of both interaction partners in a dyadic workplace relationship. We recognize that, in actuality, each organizational actor will practice emotional labor uniquely. Yet each actor will also perceive the quality of the connection with the other organizational member distinctly. For the operationalization of the propositions in this paper, future researchers may consider examining both the emotional labor and perceived connection quality of each organizational actor in a dyadic workplace relationship.

Emotional labor is also important for understanding workplace connections given that the literatures on positive connections, relationship science, and leader-member exchange converge on the important role of emotions in predicting connection quality (Berscheid 1999; Dutton and Heaphy 2003; Graen and Uhl-Bien 1995). For this reason, emotional labor will help us better understand the influence of new forms of work such as TMC on connection quality in workplace relationships.

Actually, emotions "appear to be so central to interpersonal relationships that it serves as both an antecedent and enduring aspect of relationship quality" (Ferris et al. 2009, p. 1389). As the display of emotion depends entirely on an individual's ability to discern which felt emotions to display, which is emotion regulation (Grandey 2000; Gross 1998; Sutton and Rafaeli 1988), we construe emotional labor as an intrapersonal variable that is an important antecedent of an interpersonal, dyadic variable: connection quality in workplace relationships.

3.1　The three forms of emotional labor: surface acting, deep acting and genuine emotional labor

We will now explain how two of the three widely recognized forms (Humphrey et al. 2015) of emotional labor, deep acting and genuine emotional labor, are skillful and generally of benefit in producing high connection quality in workplace relationships. We will then delineate why the third form of emotional labor, surface acting, is generally an unskillful form of emotional labor detrimental to the formation of high connection quality between organizational actors. This theorizing will enable us to better understand how emotional labor mediates the influence of a new digitized form of work, TMC, on the connection quality of workplace relationships.

Hochschild (1983) initially developed the concept of "feeling rules," or societal norms that govern which emotions are acceptable for which gender (e.g., fear tends not to be accepted in men and aggressiveness is often not accepted in women). Other scholars have since preferred the use of the term "display rules" (Ekman 1973) to emphasize that the emotion does not need to be felt in order to be displayed, referred to as surface acting (Ashforth and Humphrey 1993; Rafaeli and Sutton 1989).

Deep acting, on the other hand, is executed when the referent attempts to experience the emotion they intend to display, such that the expressed emotion first *becomes* a felt emotion (Ashkanasy and Humphrey 2011; Hochschild 1979, 1983). In general, deep acting tends to be a healthier, more skillful form of emotional labor than surface acting. To understand why, consider its parallel form of emotion regulation, cognitive reappraisal. Cognitive reappraisal is widely considered the most salutary form of emotion regulation (Gross 1998, 2015a).

When the organizational member's felt and displayed emotions match, their emotion expression has come to be known as "genuine emotional labor" (Ashforth and Humphrey 1993). Unlike the other two forms of emotional labor, surface acting and deep acting, genuine emotional labor does not require any emotion regulation. In general, emotional labor tends to be genuine when the focal person feels the emotion the organizational display rules impel them to express. For example, a nurse may genuinely feel compassion toward an ailing child (Ashforth and Humphrey 1993). A confirmatory factor analysis supports the division of surface acting, deep acting, and

genuine emotional labor into three distinct emotional labor strategies, with the genuine expression of emotions consistent with organizational display norms the most commonly-practiced strategy (Diefendorff et al. 2005).

Generally, the performance of surface acting tends to lead to alienation from self and others (Grandey et al. 2015; Silard and Anderson 2018). The primary benefit of surface acting is that it takes less time to perform than deep acting (Gross 2015b), and hence on occasion is an adaptive means of managing a surge in felt negative emotion that one does not wish to express. As a frequently-utilized-emotional-labor strategy, however, it tends to produce low-quality connections and relationships with other coworkers (Humphrey 2012). Hence, it seems that deep acting and genuine emotional labor, when skillfully performed, tend to produce high-quality workplace interactions, while surface acting tends to induce lower-quality interactions.

High-quality connections have "greater emotional carrying capacity," or the capability of the dyadic relationship to weather the display of both positive and negative emotion by either interaction partner (Dutton and Heaphy 2003). We anticipate the expression of more genuinely felt emotions, whether positive or negative, to engender a safe and resilient communication environment more likely to support higher connection quality. Thus, we propose:

Proposition *a: The practice of surface acting by organizational actors leads to lower connection quality in workplace interactions.*

Proposition *b: The practice of deep acting by organizational actors leads to higher connection quality in workplace interactions.*

Proposition *c: The practice of genuine emotional labor by organizational actors leads to higher connection quality in workplace interactions.*

If high connection quality and the skillful practice of emotional labor mutually reinforce each other, then the skillful practice of emotional labor (primarily through deep acting and genuine emotional labor; and occasionally through surface acting) becomes that much more germane to our analysis of how emotional labor mediates the influence of TMC on connection quality. We will now examine this continual, bidirectional influence of the skillful practice of emotional labor and the connection quality of workplace relationships.

4 The virtuous cycle of skillful emotional labor and the increased connection quality of workplace relationships

We propose that there exists a virtuous cycle within organizations in which skillful emotional labor (frequent deep acting and genuine emotional labor and infrequent surface acting) produces an increase in connection quality and vice-versa. As postulated above, an initial increase in the emotional labor abilities of an organizational actor can lead to enhanced connection quality in their interactions with another actor. We additionally propose that this increase in connection quality, in turn, is likely to

lead to an increase in the emotional labor abilities of the focal actor and produce this "virtuous cycle." This relationship development process is graphically represented in Fig. 1.

We have already outlined in the previous section how skillful emotional labor—the frequent performance of deep acting and genuine emotional labor and the sporadic performance of surface acting—is likely to generate higher connection quality and hence will not reproduce our arguments in this section. Of current interest is how connection quality, once increased, leads to an increase in the emotional labor abilities of the focal individual. We perceive this process to be mediated by emotion-carrying capacity, a vital component of high connection quality that comprises the relational capacity for both positive and negative emotion expression (Stephens et al. 2011). Contrary to conventional notions, the expression of negative emotions can also be important in workplace relationships. The reason is that while positive emotions can produce an expanded attention span generative of creativity and contentedness (Fredrickson and Branigan 2005), the organizational events encoded in negative emotions are often more vividly recalled and easily accessed (Amabile et al. 2004; Dasborough 2006) and hence more conducive to organizational change. When expressed by organizational leaders, for example, negative emotions often signal to followers that a particular work outcome is highly valued by the leader (Gibson and Tulgan 2002) or that performance must be improved (Fitness 2000). As a consequence of these signaling effects of negative emotions (Parrott 2001, 2002; Silard and Anderson 2018, 2018b), leader negative emotion display can induce both heightened effort (Sy et al. 2005) and enhanced performance (Van Kleef, Homan, Beersma, and Van Knippenberg, 2010) among followers. As we will see in the next section, it is precisely this phenomenon—the salutary expression of negative emotions—that is most under threat when the TMC modality that is increasingly ubiquitous in the new digitized forms of work.
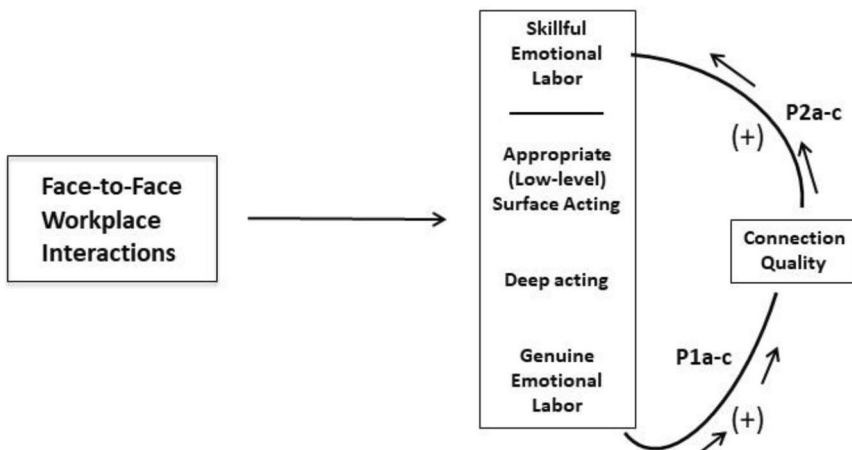

Fig. 1 The virtuous cycle of healthy workplace relationship development: the nediated influence of skillful emotional labor on the relationship between face-to-face workplace interaction and the connection quality of workplace relationships

Organizational members who are able to serially or simultaneously express both positive and negative emotions enact what has been referred to as "emotion complexity," a vital ability that leads to higher attributions by other organizational actors of cognitive flexibility (Rothman and Melwani 2017). Importantly, employees engaged in workplace relationships characterized by high connection quality are likely to enact a higher emotion-carrying capacity, a correlate of emotion complexity. Such organizational members will express a wider range of both positive and negative emotions, enabling a more highly skilled practice of genuine emotional labor.

Supporting our claims, research on emotional labor suggests that "practice makes perfect" in the sense that the more skillful forms of emotional labor such as deep acting and genuine emotional labor are enacted, the better organizational actors become at performing them. A review on emotional labor by Humphrey et al. (2015), for example, found not only that employees with more tenure are more likely to perform genuine emotional labor, but also that the more employees become skillful in practicing deep acting and genuine emotional labor, the less they feel compelled to practice surface acting.

We now take a deeper look at how emotional labor, along with two additional mediators that are produced by TMC, informational and interaction demands and decreased co-presence, mediate the influence of TMC on connection quality.

5 The mediating influence of emotional labor in the relationship between tmc and the connection quality of workplace relationships

Workplace relationships require an amount of emotion regulation that is neither superfluous or insufficient in order to be characterized as possessing high connection quality (Gross 2015b). Given the delicate nature of striking just the right amount (neither excessive nor insufficient) of emotion regulation, it might be particularly sensitive to the TMC that characterizes many new forms of work in the new, highly-digitized workplace. In comparison to face-to-face communication (FtF), TMC has been found to lead to less inhibited behavior, including increased participation, outspoken advocacy, and flaming (e.g., Friedman and Currall 2003; Kiesler and Sproull 1992; Landry 2000). The capricious behaviors associated with TMC are often instigated by an organizational member's transient mood. Moods are temporary affective states divorced from their antecedent causes (Clark and Isen 1982; Cropanzano, Weiss, et al., 2003).

When a mood—rather than a more stable cognitive or affective process—guides behavior, this behavior may not feel authentic to the focal person when viewed retrospectively. Instead, the individual may feel regret at having lashed out in anger in reaction to a negative mood they do not perceive to characterize their authentic self. In fact, one definition of authenticity includes "relational transparency," referred to as "presenting one's authentic self through openly sharing information and feelings as appropriate for situations (i.e., avoiding inappropriate displays of emotions)" (Avolio et al. 2009, p. 424). Hence, it seems likely that the insufficient emotion regulation associated with TMC may produce inauthentic feelings in the focal individual

that reduce the connection quality of their relationships with other organizational members.

The triadic theory of impersonal/interpersonal/hyperpersonal TMC (Walther 1996), in fact, suggests that TMC is generative of not only superfluous (hyperpersonal) but also deficient (impersonal) levels of emotion display. Walther's model suggests that both insufficient and excessive emotion expression are responses to inadequate social cues received through the solitary channel of communication (i.e., textual electronic messaging) characteristic of TMC (Spears and Lea 1992). In the absence of sufficient social cues, the asynchronous nature of TMC decontextualizes communication between individuals by removing the communication from time and place (Faraj et al. 2011), separating the message being sent from both the sender and the context in which the sender is embedded. In fact, one study found that TMC generates the release of the same negligible amount of oxytocin, a neurotransmitter associated with a soothing, relaxing feeling of high connection quality, as no interaction at all. Even the voice sharing associated with telephone interaction yields significantly higher oxytocin release than the decontextualized medium of TMC (Seltzer, Prososki, et al., 2012; Seltzer et al. 2010). Perhaps for this reason, there is a "negative affective bias" associated with TMC such that when an organizational member intends for an electronic message to be positive in emotional tone, it is most often interpreted by the receiver as emotionally neutral. Alternatively, when an organizational actor intends for an email, text or chat message to be emotionally neutral, it is usually perceived by the receiver as negative in emotional tone (Byron 2008).

In sum, TMC might either inspire insufficient or excessive emotion expression. These two TMC-inspired emotion-related behaviors can be construed as either a surfeit or dearth of emotional labor, respectively. Both behaviors suggest the usage of unskilled emotional labor strategies and are likely to reduce the connection quality in workplace relationships.

6 The virtual vicious cycle of unskillful emotional labor and the reduced connection quality of workplace relationships

We will now explain how TMC renders the enhancement of connection quality more challenging in workplace relationships, and instead often results in a 'virtual vicious cycle' in which unskillful emotional labor produces decreased connection quality (and vice-versa). In other words, we propose that, due to TMC, both the emotional labor abilities and connection quality among organizational actors decrease over time. This relationship development process is depicted in Fig. 2.

We will now delineate how connection quality, once decreased, leads to a concomitant decrease in the emotional labor abilities of the focal person. Reduced connection quality is likely to decrease trust, which is associated with low connection quality (Stephens et al. 2011). Less trusted interaction partners tend to also be less predictable (Dirks and Ferrin 2002; Korczynski 2000; McAllister 1995), and uncertainty is highly correlated with negative emotions (Lazarus 1991). The focal organizational actor, hence, might practice less genuine emotional labor and excessive surface acting with other organizational members they do not trust out of fear of reprisal (stem-
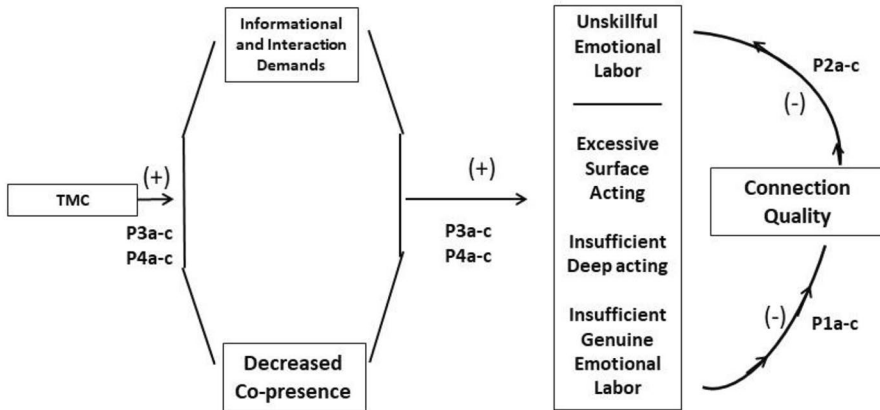
Fig. 2 The virtual vicious cycle of unhealth workplace relationship development: the mediated influence of emotional labor on the relationship between TMC and the connection quality of workplace relationship

ming from evaluation apprehension). Additionally, individuals with less practice in performing emotional labor tend to rely more on its least effective form, surface acting (Humphrey et al. 2015). Hence, it is likely the reduced connection quality associated with TMC may lead to the increased practice of surface acting and a reduced practice of deep acting and genuine emotional labor.

In sum, it seems that skillful emotional labor and connection quality coexist in a mutually reinforcing "upward spiral" or virtuous cycle in which the initial practice of deep acting or genuine emotional labor by an organizational actor increases their connection quality with other actors, which in turn enhances their confidence and ability to practice these skillful forms of emotional labor. We proposed in the previous section that the first part of this virtuous cycle consists of skillful emotional labor leading to higher connection quality. We now share three propositions associated with the second component of the virtuous cycle in which higher connection quality produces a more proficient performance of emotional labor.

Proposition *a: Increased connection quality in a workplace relationship leads to an increase in deep acting by each interaction partner over time.*

Proposition *b: Increased connection quality in a workplace relationship leads to an increase in genuine emotional labor by each interaction partner over time.*

Proposition *c: Increased connection quality in a workplace relationship leads to a decrease in surface acting by each interaction partner over time.*

7 The influence of decreased co-presence and informational and interaction demands on emotional labor abilities

We will now explain how the virtual vicious cycle of unskillful emotional labor and reduced connection quality is set in motion through the mediating effect of two important variables produced by TMC—decreased co-presence and increased informational and interaction demands—that set the stage for unskillful emotional labor.

7.1 Decreased Co-presence

Co-presence, or being physically co-located with another person, has been found to stimulate the arousal of emotions (Mullen and Copper 1994; Zajonc 1965). As was first discovered in social psychological research on proximity over half a century ago (Festinger et al. 1950), co-presence tends to foster emotional connectedness between people (Allen et al. 2006). The lack of co-presence introduced by the decontextualized nature of TMC can be challenging to organizational actors (Schulze and Krumm 2017), and, for three primary reasons, is likely to reduce the skillful practice of emotional labor that, as we have seen, is so critical to fostering high connection quality in the workplace. First, communication partners lack mutual knowledge, or common ground, which is important for establishing shared understanding in communication (Krauss and Fussell 1990). Deep acting requires the individual to assess the situation and summon the expected emotion. However, the lack of shared context and mutual knowledge means that individuals must rely on their own interpretation of the situation assuming (often falsely) that the communication partner will have the same interpretation (Cramton 2001). Attempts to engage in deep acting may then lead to insufficient expressions of emotion and be perceived as inauthentic by the communication partner.

Second, in a FtF environment, nonverbal behavior augments or clarifies verbal communication (Carney et al. 2010; Koneya, 1976). Lack of co-presence implies decontextualization, or disembodiment, of the communication (the message) and the context in which it is created or shared (Faraj et al. 2011). This reduced co-presence can lead to severe decrements in connection quality, a relationship poignantly discovered in the groundbreaking research of Stanley Milgram. After watching rank-and-file Nazis in the Nuremberg trials claim they were just "doing their jobs," Milgram was curious how people could so easily obey orders to commit such heinous crimes. He inventively choreographed an experiment in which participants were ordered by an austere researcher in a lab coat to administer increasingly dangerous electric shocks to a confederate sitting in an adjacent room attempting to learn a series of words. The switches had labels such as "Slight Shock," "Very Strong Shock," "Danger: Severe Shock," and, at 435 and 450 volts, "XXX." An astounding 65% of participants continued administering the shocks to the highest, 450-volt level. All 65% also continued with more shocks at 450 volts until the researcher called a halt to the experiment.

Interestingly, when the confederate was placed in close proximity to the participant, the percentage of participants willing to deliver shocks up to the maximum 450 volts dropped by over 50% (Milgram 1965, 1974). This finding suggests that co-presence increases empathy, a critical ingredient of emotional labor, which involves

expressing emotion based on the organizational actor's empathetic attunement to both the organizational display norms (Diefendorff et al. 2011) and the interaction partner (Humphrey 2012). Similarly, when in combat with an enemy they can see, it is not uncommon for soldiers to refuse to fire; such acts of civil disobedience are rare when soldiers are given kill orders with aircraft or more distant weapons (Myers 2010). Indeed, an individual's empathetic accuracy has been shown to be higher when the individual has a close relationship with the other person (Elfenbein and Ambady, 2003).

Why can individuals commit such malicious acts when co-presence is low or non-existent? Disembodied information, that which has been separated from the individual conveying the message, lacks the emotional content transmitted through nonverbal cues (Derks et al. 2008). For example, a message accompanied by a smile has different meaning than when accompanied by a frown or angry voice (Strack et al. 1988). Thus, the practice of skillful emotional labor in the TMC that characterizes many new forms of work may become challenging due to the compromised ability to construct sufficient expression of emotion.

The third reason TMC-induced lack of co-presence may weaken emotional labor performances is that conversations in a shared (FtF) environment tend to be ephemeral—heard by both parties, but not otherwise recorded or enduring. When using TMC in the new highly-digitized workplace, the disembodiment of the communication implies that conversations are persistent and can be shared, in whole or in part, multiple times with unknown others and without the sender's knowledge (Faraj et al. 2011). In a study of a distributed online learning communication, for example, Bregman and Haythornthwaite (2003) found that students altered their communication behavior due to their awareness of the permanent nature of their communication and the possibility that the decontextualized communication could be shared with unknown others. Due to lack of co-presence, organizational members may experience heightened evaluation apprehension and may be reluctant to share genuine emotions or to practice deep acting, which requires the expression of intensely felt emotions. To compensate, organizational members may be more likely to practice surface acting. Whether decreased co-presence promotes either excessive (impersonal) or insufficient (hyperpersonal) emotion regulation as per Walther's (1996) model, this decrement in emotion regulation is likely to manifest in organizational settings as the unskillful practice of emotional labor.

Proposition *a: Decreased co-presence mediates the positive relationship between TMC and surface acting by organizational actors.*

Proposition *b: Decreased co-presence mediates the negative relationship between TMC and deep acting by organizational actors.*

Proposition *c: Decreased co-presence mediates the negative relationship between TMC and genuine emotional labor by organizational actors.*

7.2 Increased informational and interaction demands

As discussed previously, TMC is disembodied, and therefore may be missing important information due to the lack of nonverbal cues. Such cues, despite often being implicit and signaled through body language, are especially important for the expression of emotion (Derks et al. 2008). However, research has shown that while emotion can be conveyed in TMC, constructing the message takes more time and effort, as nonverbal (previously implicit) communication must be made explicit (McGrath and Hollingshead 1994). The increased attentional demands associated with TMC—through which exponential work- and non-work-related social media distract employees (McPherson et al. 2006)—thus reduce the likelihood that individuals will commit the time and effort necessary to convey the affective expressions necessary for skillful emotional labor practices.

As previously discussed, the emotional labor strategy of deep acting is antecedent-focused, meaning that the individual must appraise the situation and then elicit the desired emotional state before displaying the emotion (Fisher et al. 2013). Deep acting, especially through its most common form, cognitive reappraisal—a psychological reassessment of how an individual construes a person, event, or situation that can effectively alter the emotion that individual experiences—requires more time than suppressing the emotions or pretending it doesn't exist (Gross 1998, 2015).

Organizational actors may not be willing to commit the time, or even have the attentional capacity—especially in the new, highly stressful TMC-accelerated workplace (Barley et al. 2011) associated with new forms of work—to practice sufficient deep acting due to the interactional and information demands of TMC. To compensate, such actors may rely more heavily on surface acting. Further, the more organizational members in a TMC-enabled workplace are distracted from their own values by the demands and needs of others (Krasnova et al. 2013), the less they are likely to attune to their own natural emotions and practice genuine emotional labor. Informational and interaction demands, hence, are likely to promote insufficient (hyperpersonal) emotion regulation as per Walther's (1996) model and induce the unskillful practice of emotional labor.

Proposition *a: Informational and interactional demands mediate the positive relationship between TMC and surface acting by organizational actors.*

Proposition *b: Informational and interactional demands mediate the negative relationship between TMC and deep acting by organizational actors.*

Proposition *c: Decreased co-presence mediate the negative relationship between TMC and genuine emotional labor by organizational actors.*

8 Discussion

We have considered the mediating role of emotional labor in the relationship between TMC and connection quality. Building on Walther's (1996) triadic model of TMC-induced emotion regulation and contributing to the literature on both the influence of TMC on workplace relationships (Byron 2008; Mazmanian et al. 2013) and the outcomes associated with the various forms of emotional labor in the workplace (Grandey et al. 2015; Humphrey et al. 2015), we theorize that an organizational member's ability to regulate their emotions in the workplace is facilitated by face-to-face communication and inhibited by text-based technology-mediated communication (TMC). We also identify two additional mediators in this process produced by TMC: decreased co-presence andand increased informational and interactional demands.

We next consider the implications of our ideas relative to prior research and develop possible avenues for future research with a special focus on new forms of work in Industry 4.0. New forms of work enabled by technology, which are increasingly dependent on machine learning or artificial intelligence, are being rapidly adopted by organizations with the goal of gaining new efficiencies or stimulating innovation and value creation. As technologies are more deeply integrated into individual and organizational work, they provide connections between employees and become the basis for collaboration and social interactions in organizations. These technology-enabled changes in work practices often occur with little planning or understanding of potential consequences (Baptista et al. 2021). In this research, we call attention to possible negative consequences of a particular set of technologies, i.e., TMC, on the quality of connections between coworkers.

Our analysis suggests three new research directions to deepen our ongoing understanding of the role of TMC in influencing connection quality in the new emergent forms of work in the highly-digitized workplace.

8.1 Research Direction #1: connectivity and isolation in New Forms of Work

Employees engaged in many new forms of work, such as remote and gig work, are separated and physically isolated from one another, contributing to decreased co-presence. Specifically, while these distributed employees are connected through TMC, they are each working in specific local situations that differ in many ways and may influence the quality of their connections with each other. For example, during the 2020-21 pandemic, memes of remote workers in significantly different home situations abounded: some with work spread out on dining room tables and children in the background; others in quiet, well-equipped home offices; others working in coffee shops; still others even working in closets or bathrooms. These distributed co-workers have little awareness of the differences faced by colleagues in different local situations.

This lack of awareness of the local situation of a co-worker is termed "situational invisibility" (Cramton et al. 2007). Cramton et al. (2007) find that the negative effects of locational differences are amplified by situational invisibility. For example, the authors (p. 527) state: "people conclude that a remote partner is uncommitted or unreliable [when mistakes or misunderstandings occur] while failing to recognize

how events in the remote location or technology failures contribute to the observed behavior." In fact, the authors found that co-workers were likely to incorrectly ascribe reasons for observed behavior of remote partners to characteristics of their own local situation (Cramton et al. 2007). To better understand the conditions leading to decreased co-presence, researchers might investigate the TMC-enabled workplace to better understand the implications of decreased co-presence on connection quality as mediated by emotional labor. For example, under what conditions might decreased co-presence lead to the development of unskillful emotional labor? What role does 'situation invisibility' play and are there conditions (e.g., increased situational visibility) under which employees may reduce surface acting and increase deep acting and genuine emotional labor?

8.2 Research Direction #2: implications for the design of New Technologies

Employees have access to an increasing and evolving set of communication media, including TMC as well as audio- and video-based technologies. This wide range of technologies has potential benefits, such as easier and faster communication with colleagues, and provides the foundation for new forms of work. However, at the same time, managing and using this wide variety of communication tools means that individuals have an increasing amount of information to process. In other words, the interactional and information demands of work increase even as more media is adopted to enhance communication. During the 2020-21 pandemic, "Zooming" became a verb to describe the widespread use of video-conferencing in remote work. A new term "Zoom fatigue" surfaced as workers realized that Zoom meetings were often more exhausting than traditional meetings. Recent research has found that these meetings come with an increasing amount of information for individuals to process, e.g., watching yourself constantly is tiring and can have negative emotional consequences which are cognitively depleting (Bailenson 2021) proposes design improvements to reduce "Zoom fatigue". Likewise, we suggest that our conceptual model of the role of emotional labor in the relationship between TMC and connection quality may provide a basis for deeper understanding of the antecedents of this relationship and further indications for design improvements.

Finally, we call attention to emerging research on the incorporation of machine learning and artificial intelligence into collaboration platforms. These changes are being made in part to address problems of increased informational and interactional demands. In one recent paper, *chatbots* were hailed as a promising technology to "filter information overload and reduce the workload of daily tasks by providing appropriate assistance" (von Wolff et al. 2019: 95). The authors describe chatbots as an application system that provides a natural language user interface for the human-computer-integration. It usually uses artificial intelligence and integrates multiple (enterprise) data sources (like databases or applications) to automate tasks or assist users in their (work) activities (p. 96).

More specifically, using a socio-technical perspective, Lebeuf et al. (2017) investigate "how chatbots can help reduce the friction points software developers face when working collaboratively" (p. 1). They find that chatbots can support trust and team cooperation, coordinate team activities and maintain awareness of teammates'

roles and expertise (Lebeuf et al. 2017). Our conceptual model can provide a basis for investigating the efficacy of new and emerging technologies, as well as design possibilities. Research could also investigate how new AI-supported technologies could address effects of decreased co-presence and informational and interaction demands, and increase skillful emotional labor in new forms of work.

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Authors and Affiliations

Anthony Silard[1] · Mary Beth Watson-Manheim[2] · Nuno Jose Lopes[3]

✉ Anthony Silard
tsilard@luiss.it

Mary Beth Watson-Manheim
mbwm@uic.edu

Nuno Jose Lopes
njlopes@unav.es

[1] Luiss Business School, Via Nomentana, 216, 00162 Roma, RM, Italy

[2] The University of Illinois at Chicago Business School University Hall, 601 S. Morgan St., 11th Floor, 2426, 60607 Room, Chicago, Il, United States

[3] School of Economics & Business, University of Navarra, Ed. Amigos, 31009 Pamplona, Spain