

The Influence of Communication Modality on Verbal Person-Centered
Supportive Conversations between Friends

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Lucas J. Youngvorst

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Dr. Susanne M. Jones

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Dedication

In memory of David Knudson (December 31, 1957 – October 4, 2014)

Abstract

Decades of research document that individuals depend on others in times of difficulty and stress, making social support one of the most important relational resources on which people rely. Not all support is equally effective, however, and past research identifies Verbal Person Centeredness (VPC) as an important feature characterizing the quality of support. Although a wealth of research has explored VPC within the context of face-to-face (FtF) communication, people are increasingly incorporating computer-mediated channels (e.g., social networking sites, text messaging, Skype) to create, sustain, and supplement supportive interactions. Yet, little research exists that systematically examines *how* or *why* such modalities uniquely influence supportive communication in general, or verbal person-centered supportive communication in particular. Thus, the purpose of this project was to acquire a more nuanced and ecologically valid understanding regarding how established relational partners, particularly friends, engage in verbal person-centered supportive communication via different communication modalities. An affordance-based framework was used to explore whether and how different communication modalities shape the communicative experiences and outcomes reported by support receivers and providers following a verbal person-centered supportive conversation with a friend. 246 friend-dyads participated in an experiment by engaging in a video-recorded supportive conversations that occurred via either face-to-face, text messaging, or Skype. The interactions were manipulated such that participants engaged in conversations reflecting either low VPC, moderate VPC, or high VPC. Participants also completed pre-/post-interaction surveys to assess personal/relational factors as well as to measure their perceptions and outcomes of the supportive

conversation. Results suggest that Social Information Processing Theory best explains the communicative experiences of established relational partners engaging in verbal person-centered supportive communication via various communication channels. In particular, there was no significant differences in support providers', receivers', and third-party raters' perception of support quality across face-to-face, text messaging, and Skype communication channels. Additionally, results revealed that participant's perceived affordances differed both as a function of 1) their role within a supportive conversation (e.g., receiver, provider), and 2) the communication channel through which they were interacting. Finally, perception of affordances significantly predicted the conversational experiences and outcomes for both support providers and receivers. Interestingly, in some instances, perceived affordances differently influenced outcomes as a function of the level of VPC. Ultimately, this study is one of the first to explore the influence of communication context on verbal person-centered supportive interactions between friends. Taken together, the results of this study present important theoretical and pragmatic implications for computer-mediated communication, perceived affordances, and verbal person-centered supportive communication.

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Chapter One

Individuals depend on others for companionship and assistance during a variety of situations, ranging from devastating life events, including job loss or death of a loved one, to less significant stressors, such as being criticized at work or struggling to maintain a diet plan. Social support, defined as “verbal and nonverbal behavior produced with the intention of providing assistance to others perceived as needing that aid” (MacGeorge, Feng, & Burleson, 2011, p. 317), has long been identified as an important relational resource upon which people rely (Albrecht, Burleson, & Sarason, 1992; Burleson, 1985). In fact, nearly four decades of epidemiological research has confirmed that people with fewer social support resources experience nearly three times higher mortality rates compared to people with more robust social networks, even when controlling for self-reported and physiological markers of health risk (Berkman & Syme, 1979; Kaplan, Salonen, Cohen, Brand, Syme, & Puska, 1988). A recent meta-analysis provided further evidence that supportive relationships in particular benefit health on par with smoking cessation and reduced alcohol consumption (Holt-Lunstad, Smith, & Layton, 2010).

Within the study of interpersonal relationships, support is important due to its positive impact on various outcomes, including physical and emotional health (Cohen & Wills, 1985; Wills & Fegan, 2001), relational satisfaction (Burleson & Samter, 1990; Peterson & Albrecht, 1996), and subjective well-being (Albrecht & Halsey, 1992). Research exploring social support has revealed emotional support as particularly beneficial because it facilitates the regulation of a stressed others’ negative emotions, which, in turn, enables them to cope more effectively with difficult life events (Applegate, 1978; Bodie et al., 2011; Burleson & Samter, 1985; Morelli, Lee, Arnn, &

Zaki, 2015). However, the link between emotional support and improved health cannot simply be explained by the frequency in which support is exchanged (Shor & Roelfs, 2015). Rather, the benefits depend on the *quality* of support that people provide and receive in their relationships (Reblin, Uchino, & Smith, 2010). Thus, the goal of this dissertation is to explore the *process* of supportive communication by identifying whether and how individuals and/or contextual factors influence the provision and reception of supportive messages varying in quality.

Supportive Communication

Burleson and colleagues (e.g., Bodie, Burleson, & Jones, 2012; Burleson, 1982; Holmstrom, Burleson, & Jones, 2005; Jones, 2004) have established verbal person centeredness as an important quality of supportive messages. The fundamental criterion of verbal person-centered (VPC) support is the extent to which messages facilitate “an awareness of and adaptation to the affective, subjective, and relational aspects of communication contexts” (Burleson, 1987, p. 305). Applegate (1978) and Burleson (1982) developed a nine-level hierarchy consisting of three major divisions to describe variation in VPC (Appendix A). Messages that implicitly or explicitly deny the feelings of a distressed other are considered *low person-centered* (LPC). Messages that implicitly acknowledge another’s feelings and/or perspective are considered *moderate person-centered* (MPC). Messages that explicitly recognize and elaborate on the feelings of a distressed other are considered *high person-centered* (HPC; see Applegate, 1978; Burleson, 1985; Burleson et al., 2009).

Extensive research shows that HPC supportive messages elicit better outcomes than LPC messages (for a review see High & Dillard, 2012). In particular, higher levels

of VPC support correspond with enhanced psychosocial well-being, brightened affect, and improved reappraisal of a stressor (Burlison & Goldsmith, 1998; Jones, 2004; MacGeorge et al., 2011). Further, HPC support may facilitate the regulation of upsetting emotions experienced by the support recipient, otherwise called reappraisal. Reappraisal is a positive emotion regulation (e.g., coping) strategy that encourages people to give a different and more positive meaning to events that originally induced negative emotions (Gross, 2015). HPC support assists reappraisal by helping people reframe events in line with his/her goals, wants, and needs (Burlison & Goldsmith, 1998), occurring through message devices such as encouraging the seeker to talk about what happened, asking probing questions about the event, or thinking through whether and in what ways the event matters to the person.

Providing high-quality support is difficult because the primary goal of VPC support is to facilitate emotional improvement. To accomplish this goal, support providers must be attentive to several supportive needs of the recipient (Applegate, 1978; Burlison, 1982). They must also respond to various aspects of the communicative situation (e.g., thoughts, feelings, relationships, contexts) to process and respond to the distressed other's feelings (Burlison, 2007). These challenges might be the reason why people so rarely provide HPC support (Jones, Bodie, Youngvorst, Navarro, & Danielson, 2018). Although people reliably differentiate between messages varying in VPC, such that HPC messages are rated as more appropriate, effective, and helpful than LPC messages (Goldsmith, McDermott, & Alexander, 2000; Jones & Burlison, 1997), people often provide either ineffective support or no support at all (Brooks & Dunkel-Schetter, 2011; Dunkel-Schetter, Blasband, Feinstein, & Herbert, 1992). Processing HPC messages

is equally complex because support receivers must scrutinize messages that target both difficult emotions and contextual information, and that encourage recipients to actually reframe their situation and (re-)evaluate what it means to them. Previous work on the Dual-Process Theory of Supportive Message Outcomes (DPT; Bodie & Burleson, 2008) has identified motivation and ability as two factors that influence the processing of supportive messages. Support receivers who are both motivated to scrutinize the content of supportive messages and cognitively able to process sophisticated messages will evaluate support as helpful and reappraise their experience in ways that improve affect (e.g., emotions) and behavior (e.g., coping; Bodie, Burleson, & Jones, 2012; Burleson, 2009; Goldsmith et al., 2000). Ultimately, HPC supportive communication requires that both support providers and receivers engage in coordinated and complex social-cognitive processes (see Burleson, 1985; Burleson & Caplan, 1998; Rubin & Hanzel, 1984; Samter, 2002).

Goals of the Dissertation

The complexities of engaging in VPC supportive conversations expand exponentially when considering how personal and contextual factors influence such interactions. Therefore, my goal is to factors that influence the provision and reception of VPC support during supportive conversations. The proposed research is important for several reasons. First, this project investigates the dyadic nature of supportive communication. Research exploring VPC support has primarily focused on individual messages or helpers. For instance, support provision is frequently studied by having participants provide supportive messages in response to hypothetical scenarios, whereas support processing is often tested through participants' evaluation of pre-formulated

messages (MacGeorge, Feng, & Burleson, 2011). While informative, these methods do not account for how the thoughts and behaviors of one communicator influence the thoughts and behaviors of the other. Simply put, people have conversations and do not merely exchange messages (Burleson & Goldsmith, 1998; High & Solomon, 2014).

Support seekers must explain their stressful situation, disclose their thoughts and feelings, and react and respond to the support messages they receive. In turn, support providers must process the supportive needs of the situation, formulate appropriate responses, and verbalize messages designed to improve the emotional state of their partner. As with all communication, supportive conversations consist of message turns that are interdependent; receiver and seeker are connected. Therefore, to reveal a more accurate and ecologically valid understanding of VPC support, this project examines how support providers and receivers engage in supportive conversations.

Second, this project explores how personal factors influence VPC supportive conversation. During times of stress, people naturally turn to those closest to them as sources of supportive communication (Bodie, Gearhart, Denham, & Vickery, 2013). Friends are particularly helpful during times of hardship (Bodie & Burleson, 2008; Virtanen, 2015), and this is most notable for college-aged students who manage their transition into adult life by relying on friends and peer groups (Buote et al., 2007; Rodriguez et al., 2003). However, this relationship type is rarely examined in terms of VPC supportive conversations. Instead, research exploring VPC support largely focuses on supportive interactions between strangers, which is likely not realistic because strangers lack the ability and motivation to engage in highly supportive conversations (High & Solomon, 2014). Further, because communicative partners have varying

influence on each other depending on the type and/or stage of their relationship (Clark & Lemay, 2010), studies exploring VPC supportive conversations between strangers (e.g., High & Solomon, 2014; Jones & Guerrero, 2001) may not generalize to pre-existing relational partners. Therefore, this project exclusively examines how friends engage in VPC supportive conversations.

Third, and perhaps most central to my dissertation, this project explores the influence of various contextual factors on the process of supportive communication. Although supportive communication processes are frequently explored in face-to-face (FtF) exchanges, people are increasingly turning to mediated channels to create, sustain, or supplement supportive interactions (Ellison, Gray, Lampe, & Fiore, 2014; National Cancer Institute, 2013; Seidman, 2013). Little research exists, however, that systematically examines the influence of various technological contexts on supportive communication. This is concerning because face-to-face and computer-mediated (CM) interactions differ in ways that fundamentally impact the process and outcome of supportive conversations. For instance, nonverbal cues have been established as a significant factor in the support process, such that increased nonverbal immediacy increases perceptions of helper competence (Jones, 2004) and listening (Bodie & Jones, 2012). Computer-mediated channels, however, include reduced social cues compared to FtF settings, often to the point of fundamentally changing “structural aspects of social support” therein (Walther & Parks, 2002, p. 545). CM interactions also influence conversational expectations, specifically regarding response latency. Face-to-face communicators operate under an implicit norm to sustain interactions and minimize conversational gaps (Sacks et al., 1978). McLaughlin and Cody (1982) noted that

participants engaging in conversations that contained lapses as brief as 3 seconds perceived their partner as being an incompetent communicator. The asynchronous nature of various CM modalities, however, enables longer response latency between receiving and responding to messages (High & Solomon, 2011). The delayed response latency afforded by CM modalities is important for supportive communication because it not only alters the structure of the interaction itself, but also fundamentally changes the interdependence between communicators. Given the significant differences between computer-mediated communication (CMC) and FtF venues, this project explores VPC supportive conversations through various communicative modalities.

Theoretical Foundation

When exploring CM supportive communication, communication modalities must be differentiated on the basis of *affordances*. Gibson (1977) originally defined affordances as the “action possibilities” of an object or environment. For example, a doorknob *affords* the opening/closing of a door. It is only because of a certain feature and what it affords that specific actions and behaviors are possible. Sundar (2008) extended this definition to CM spaces and identified *technological affordances* as the inherent features of technology that directly influence the nature of CM interactions. Affordances, such as message editability (i.e., how much a message can be strategically crafted prior to sending) and temporal response delays, constitute action possibilities and structure normative communication practices of CM interactions (High & Solomon, 2014). For instance, a video/audio-based channel affords interactions that differ from text-based channels on the basis of transmitted social cues and temporal delays. FtF is yet another communication channel that possesses unique affordances; it is low in editability and

normatively assumes few temporal delays.

I argue that affordances influence the relationship between communication channels, supportive communication, and support outcomes (e.g., emotional improvement, relational satisfaction). An affordance-based approach to CM communication highlights the crucial contribution of my project: Comparing CM (e.g., Skype, text messaging) with non-CM (e.g., FtF) channels on the basis of affordances suggests that no channel is inherently better than the other. Rather, each channel possesses distinct characteristics that positively and/or negatively impact the nature and impact of communication. Therefore, I argue that communication modalities and their distinct affordances fundamentally differ in how they accommodate supportive conversations.

I examine the extent to which three communication channels (i.e., FtF, text messaging, Skype) influence VPC supportive conversations among friends. Because supportive communication is a complex, cognitively taxing process, variations in affordances are theoretically and pragmatically important. Consider, for instance, two frequently used CM channels, Skype and text messaging. Both CM channels are ubiquitous: Skype is a video-calling platform frequently used among college-aged friends to accommodate long-distance friendships (Buhler, Neustaedter, & Hillman, 2013), and 73% of cellphone-owning adults engage in text message at least once per day (Pew Research Center, 2011). These modalities also possess unique affordances: Skype affords ephemeral, synchronous conversations that transmit a number of social cues, whereas text messaging allows people to edit messages, has high temporal delays, and transmits virtually no social cues. I argue that these affordances fundamentally influence recipient

evaluations of and responses to supportive messages. For example, because social cues often enhance supportive outcomes (Bodie & Jones, 2012), CM channels that afford the transmission of social cues may enable support receivers to process messages in ways that improve affect (e.g., emotions) and behavior (e.g., coping).

This dissertation fills a research lacuna in CMC in general and CM support specifically: First, although friends are a beneficial source of support during times of hardship, particularly for college-aged students, this project is among the first to examine how friends engage in CM supportive conversations. Second, my affordance-based approach to computer-mediated supportive communication is theoretically grounded and thus capable of explaining differences between CMC and FtF support on the basis of theoretical modality characteristics (i.e., affordances). Third, despite significant differences in CM modalities, research usually compares FtF support with *all* CM channels (High & Solomon, 2014). This project explores two distinct CM channels: text messaging and Skype. Finally, this project explores the *process* of supportive conversations by examining emotional and cognitive changes in both providers and receivers.

In chapter two, I review literature regarding supportive communication and verbal person centeredness. Chapter three reviews literature regarding computer-mediated communication and foregrounds the affordance-based approach to computer-mediated supportive communication that serves as the basis of this dissertation. Chapter three concludes with an advancement of the hypotheses and research questions for this dissertation. Chapter four and five present the methodology and results of a study conducted to test the predictions of this project. Finally, chapter six discusses the findings

of my study and draws resulting implications and conclusions regarding verbal person-centered, computer-mediated supportive communication.

Chapter Two

Providing and receiving social support is a fundamental component of interpersonal relationships, yet engaging in effective supportive interactions places great social, cognitive, psychological, and physiological strain on all involved. In fact, Burleson (2003) noted, “all phases of supportive interactions are filled with perils, pitfalls, paradoxes, and predicaments for both helpers and their targets” (p. 578). To initiate a supportive interaction, support receivers must make their supportive need known to others by disclosing personal, and potentially risky or embarrassing, information (MacGeorge, Feng, & Burleson, 2011). In turn, support providers must readily process and respond to this information by producing highly complex and involved messages often aimed at improving the emotional state of the distressed other (Burleson, 1984). Considering the complexities inherent to supportive interactions, this chapter reviews topics fundamentally important to the study of social support in general, and supportive communication in particular.

Conceptualizing Social Support

Social support has long been identified as an important component of interpersonal relationships. Dating back to the late 1800's, social support was conceptualized from research exploring marriage as a health-promotion institution (Bertillion, 1879). More recently, however, social support has enjoyed significant attention from various disciplines, namely sociology and psychology, as researchers attempt to explicate the process and outcomes of social support (for a review, see MacGeorge et al., 2011). Thus, this section explores discipline specific perspectives that sparked the conceptualization of social support.

A sociological approach. A sociological approach to social support often conceptualizes support as “social integration”, such that participation in social networks equates to social support. This perspective of social support arose primarily from Berkman and Syme’s (1979) seminal work that explored associations between social support and well-being. A nine-year longitudinal study revealed that “people who lacked social and community ties were more likely to die in the follow-up period than those with more extensive contacts” (Berkman & Syme, 1979, p. 186). In line with the sociological perspective, this study measured social support by assessing various indicators of social integration, such as marital status, contact with friends/relatives, church membership, and involvement with other social groups. Considering the methodological rigor of this and other sociological studies, scholars contend that they “provide some of the best empirical evidence for the benefits of social support” (MacGeorge et al., 2011, p. 319). As other, more recent studies have corroborated Berkman & Syme’s (1979) findings (see Berkman, Melchior, Chastang, Niedhammer, Leclerc, & Goldberg, 2004; Ikeda & Kawachi, 2010; Uchino, 2004), the sociological perspective to social support sheds light on the importance of social integration on people’s health and well-being.

Sociological debates surrounding the explanatory mechanism of positive support outcomes has been a staple of social support research for decades. Cohen and Wills (1985) theorized two models that describe the functions of social support. The *main effect model* posits individuals benefit from receiving social support in general. This model suggests perceived support does not function as a coping strategy; rather, it is the nature of support itself, regardless of stressors, that benefits health. Conversely, the *stress-buffering model* posits "support is related to well-being only for persons under stress"

(Cohen, Underwood, & Gottlieb, 2000, p. 11). This model suggests higher levels of support enable better coping with stressors, which enhances health. As other scholars have noted, “research evidence indicates that both types of effects occur, with social integration typically having a main rather than buffering effect on well-being [...]” (MacGeorge et al., 2011, p. 320).

A psychological approach. With origins in psychology as well, researchers often study social support by exploring the emotional and cognitive processes inherent to supportive interactions. Traditionally, psychologists often explore how *perceived availability* enhances the coping processes of distressed others by buffering against the negative effects of stressed (Lakey & Cohen, 2000). Importantly, however, the influence of *enacted* and *received* support on emotions and cognitions has also been studied. *Enacted support* refers to the support that is produced during a supportive interaction. Barerra (1981) was among the first to suggest that people experiencing stressful events will be happier and healthier when they receive help from their social networks compared to those who receive less assistance. Often referred to as the “supportive actions” perspective (Lakey & Cohen, 2000), the underlying argument for the benefits of enacted support lies in the increased coping capabilities of individuals who receive higher levels of assistance from their social network, which, in turn, decreases their stress and protects their well-being. Research exploring enacted support and its proposed benefits, however, revealed complexities regarding such an approach to social support. Initially, enacted support was difficult to study because it requires the direct observation of supportive message provisions. In fact, Barerra (1986) noted that most studies that claimed to study enacted support actually studied perceived-received support due to the methodological

use of self-report measures to assess social support. Additionally, several scholars raised concerns that support receivers may not perceive support behaviors in line with how such behaviors were actually enacted or intended (see Goldsmith, 2004)

To address concerns regarding enacted support, psychologists turned to *received support* as an alternative approach to studying social support. Received support refers to a support receivers' perception of the types and quantity of supportive behaviors they receive from their social network. For instance, Barrera, Sandler, and Ramsay's (1981) Inventory of Socially Supportive Behaviors measures received support by having respondents report how often they received a series of 40 supportive behaviors (e.g., "During the past four weeks, how often did other people tell you how they felt in a situation that was similar to yours?" and "During the past four weeks, how often did other people pitch in to help you do something that needed to get done?" (pp. 440-441)). The shift from enacted to received support was done to account for individual perceptions regarding experienced supportive behaviors. Similar to research on enacted support, however, several issues arose regarding the study of received support. Initial research revealed that correlations between enacted and received support were lower than expected (Antonucci & Israel, 1986), with many studies reporting a positive association between received support and stress (e.g., Helgeson, 1993; Sandler & Barrera, 1984). Thus, yet again, psychologists looked for another conceptualization and measurement of social support that better reflected the positive health benefits that follow supportive interactions.

In light of the complexities regarding enacted and received support, researchers identified *perceived availability of support* as a crucial construct that may explain

associations between social support and well-being (Cohen & Wills, 1985). Guided by “early social support definitions that emphasized perceptions of care, value, and positive regard over behaviors that may produce such perceptions (see review by Sarason & Sarason, 2006),” perceived availability of support regards people’s perception that support from their social network is available to them if and when it is needed (MacGeorge et al., 2011, p. 321). The shift from enacted and received support to perceived support availability occurred in line with Cognitive Appraisal Theory, which holds that stress arises *through* the appraisal of stressful events, rather than the events themselves (Lazarus & Folkman, 1984). Thus, individuals who perceive, or appraise, having more coping resources may, in turn, become less stressed in light of difficulty compared to those who perceive having less support availability.

Several studies have reported positive correlations between perceived social support availability and beneficial outcomes, including coping (Tao, Dong, Pratt, Hunsberger, & Pancer, 2000), academic success (Eggens, van der Werf, & Bosker, 2008), and even physiological markers of stress, such as blood pressure (O’Donovan & Hughes, 2007). Questions remain, however, regarding the underlying mechanism(s) that drive perceived support availability. For instance, considering the frequently documented weak correlation between perceived support availability and received support (Haber, Cohen, Lucas, & Baltes, 2007), we do not yet know what forms people’s perceptions about the support available to them. Although scholars are still grappling with this question, research continues to document strong, positive associations between perceived support availability and physical and psychological health (for a review, see Uchino, 2009).

A communicative perspective. Both sociological and psychological perspectives of social support implicitly recognize the vital role of communication in the conceptualization, process, and outcomes of social support (MacGeorge et al., 2011). Indeed, communication scholars claim that “social support should be studied as communication because it is ultimately conveyed through messages directed by one individual to another in the context of a relationship that is created and sustained through interaction” (Burlison, Albrecht, Goldsmith, & Sarason, 1994, p. xviii). Supportive communication, then, is defined as “verbal and nonverbal behavior produced with the intention of providing assistance to others perceived as needing that aid (MacGeorge et al., 2011, p. 317). Because communication is often the sole focus of social support research in this discipline, the study of supportive communication most closely aligns with the *enacted support* perspective of social support (Vangelisti, 2009).

In a comprehensive review of supportive communication in comparison to other discipline-specific perspective to social support, MacGeorge and colleagues (2011) identified five distinctive features that differentiate the communication perspective of social support from other approaches. First, a communicative perspective to social support recognizes the centrality of communication in the support process. Whereas other approaches to social support attempt to identify “hidden mechanisms” underlying support, communication researchers identify *communication* as the primary mechanisms through which social support occurs and benefits support receivers.

Second, communication scholars recognize the direct relationship between communication and positive health outcomes. Other disciplines often conceptualize communication as increasing either social integration (sociology) or perceived

availability of support (psychology), which, in turn, produce beneficial outcomes; an indirect relationship between social support and positive outcomes. Conversely, communication scholars argue that communication itself directly improves a distressed others' health and well-being.

Third, the communicative perspective emphasizes the importance of support provider's *intentional* helping behaviors in response to a distressed others' *perceived needs*. Communication researchers often focus on the complicated role of support providers, such that they must first perceive that a supportive need is present before intentionally producing complex messages aimed at alleviating a distressed others' negative emotional state (Burlison, 2007; Goldsmith, 2004). Thus, a communication perspective of social support focuses on the intentional behaviors of both support seekers and helpers.

Fourth, communication scholars have long noted differences in support quality and do not hold the same "more is better" belief that underlies other discipline approaches to social support. For instance, over the past three decades, Burlison and associates have worked on a program of research that explores verbal person centeredness as an important message characteristic which dictates the quality of supportive messages (for a review, see Jones & Bodie, 2014). Communication researchers studying social support consistently document the variability of support quality to the extent that certain, high-quality supportive messages result in more positive outcomes compared to supportive messages of lower quality (for a review, see High & Dillard, 2012). Thus, scholars in this discipline are continually working to identify factors that influence supportive message quality and outcomes.

Fifth, rather than focusing primarily on psychological or physiological outcomes of social support, a communicative approach often explores supportive *interactions* and *relationship(s)* between communicators. Identifying and studying supportive messages as precursors to positive outcomes is an important first-step in explicating supportive communication; however, “it is still an empirical question whether competent supporters *actually do* [... provide sophisticated support] when asked for help” (Jones & Bodie, 2014, p. 378, emphasis in original). Attempting to answer this question, communication researchers often study supportive interactions as a means to assess how and why certain communicative behaviors impact emotional distress and result in the amelioration of negative affect. Additionally, scholars often explore how supportive communication influences relational factors and outcomes, such as satisfaction and stability (Brock & Lawrence, 2008; Cutrona, Shaffer, Wesner, & Gardner, 2007). In fact, Burleson (1990) noted that supportive actions are inherently relationally significant behaviors, so exploring how supportive communication influences relational variables remains an important component of social support research within the communication discipline.

Conceptualizing Supportive Communication

Although social support originated from sociological and psychological research, communication is fundamental to the process and outcome of supportive interactions. As MacGeorge et al. (2011) argued, “communication deserves, and has earned, a more central place in the study of social support” (p. 323). Thus, the following sections focus almost exclusively on major themes in social support research as studied from a communicative perspective.

Types of social support. When conceptualizing social support, it is important to acknowledge the variation in support-intended communication that can occur. Not all stressors demand the same types of support, leaving specific supportive tactics more or less effective depending on the situation at hand. In fact, Cutrona & Wills (1985) argued “that some kinds of social support are beneficial across a wide range of circumstances but others are useful only when they address a specific loss or deficit” (as cited in Cutrona, 1996, p. 53). Thus, Cutrona & Suhr (1992) developed a social support typology that differentiates between the various intentions and goals of support. This typology identifies two broad categories of social support, which include 1) action-facilitating support, and 2) nurturant support (Cutrona, 1990; Cutrona & Russell, 1990). Whereas action-facilitated support is aimed to facilitate a stressed other in solving their problem, nurturant support is solely intended to comfort a stressed other with no efforts to solve or eliminate the problem. Although these two categories are sufficient in identifying the broad nature of supportive communication, they do not address the specific intentions underlying social support. Therefore, much of social support research has converged upon five different types of social support: Emotional, Esteem, Informational, Network, and Tangible (e.g. Cutrona & Suhr, 1992; Cobb, 1979; Schaefer, Coyne, & Lazarus, 1981).

Emotional support consists of messages that express care and love for a distressed individual, ultimately aimed at improving their emotional state (Burlison & Goldsmith, 1998). Supporting another person with phrases such as “I love you” or “that must have made you so mad” are provisions of emotional support. Research highlights emotional support as the type of support that is the most utilized (Harel, Shechtman, & Cutrona,

2012) *and* beneficial (Burlison & Goldsmith, 1998; Burlison & MacGeorge, 2002). Ultimately, Cutrona's (1996) claim, "[w]hen in doubt, provide emotional support" emphasizes the nearly-universal benefits of emotional support (p. 55).

Esteem support is intended to increase a distressed individuals' acknowledgement and regard toward their skill and/or abilities, which, in turn, enhances self-esteem. Esteem support is warranted when an individual experiences a stressful situation that involves threats to their evaluation of self, or self-esteem. For instance, someone who is left by their romantic partner would likely experience esteem threats as they question what it was (or is) about *them* that caused the breakup (Holmstrom & Burlison, 2011). Such internal attributions inherently threaten self-esteem (Abramson, Seligman, & Teasdale, 1978; Weiner, 1986), so esteem support messages, which include phrases such as "you'll do great," are often aimed at lessening the negativity of internal attributions, and, in turn, elevate the overall emotional state of esteem threatened individual.

Informational support contains factual and/or feedback based comments about a distressed others' situation. For instance, phrases such as "you should do..." or "why didn't you..." would fall within the informational type of social support. A recently emerging facet of informational support is advice, or messages that offer suggestions about how others should act or feel during stressful situations (MacGeorge, Feng, & Thompson, 2008). Feng and MacGeorge (2010) proposed advice response theory, which holds that certain stylistic and content features of advice messages (e.g., politeness) strongly influence message outcomes, as an integrative theoretical framework to assess advice effectiveness. Although more development and testing must be conducted to fully

explicate advice response theory, initial research largely supports the theory (Feng & MacGeorge, 2010).

Network support facilitates a distressed others' sense of belonging to groups or networks of people that could help them with their problem; such groups often share common interests or contain unique knowledge regarding the stressor that could prove helpful to upset individuals. Connecting distressed individuals to groups of people that share their stresses and could possibly help would be categorized as network support. Finally, *tangible* support refers to specific goods and services that are provided to a distressed other. Giving another person money or transportation in times of distress would be the provision of tangible support. Because tangible support resides outside of communicative messages, and often exists as actions that provide practical aid, tangible support is rarely explored in communication research.

Certain types of support are more or less applicable in different contexts. For instance, it would be unlikely for someone to provide esteem support to a homeless stranger they pass on the street, but provisions of tangible support in the form of money or food are normatively provide. In the context of interpersonal communication, emotional support through comforting messages, or those that facilitate the regulation of negative emotions (Burlison & Samter, 1985), is frequently studied (Applegate, 1978; Bodie et al., 2011). Therefore, extant research on emotional support in particular is covered in greater depth in the following section.

Verbal person-centered support. Emotional support fulfills two goals, including the response to an emotionally distressed other and reducing negative emotions. Person-centered support has emerged as a reliable characteristic of emotional support messages

that can fulfill these goals. *Verbal Person-Centeredness* (VPC) is defined as “an awareness of and adaptation to the subjective, affective, and relational aspects of communicative contexts” (Burleson & Caplan, 1998, p. 249). Burleson (1982) expanded upon an original conceptualization of person-centeredness (see Applegate, 1978) to focus exclusively on comforting (Appendix A). Although VPC can relate to and address various communicative processes, such as persuasive messages production/processing, significant research attention has been devoted to exploring VPC specifically in the context of support (for a review, see Jones & Bodie, 2014). In fact, Burleson (1982) operationalized varying levels of verbal person centeredness as falling within three major divisions of support quality.

Low person-centered (LPC) messages directly deny, either implicitly or explicitly, the feelings of a distressed other. LPC messages are feelings-focused, such that they specifically address the emotions of the distressed other, but do so in ways that ignore or challenge the others emotional state, and, in some cases, may even blame the other for causing the situation at hand (Burleson, 1982; MacGeorge, Gillihan, Samter, & Clark, 2003). Thus, messages such as “it’s no big deal” and “why didn’t you study harder? That’s probably why you got a bad grade – you need to work harder” would be categorized as low person-centered.

Moderate person-centered (MPC) messages implicitly acknowledge another’s feelings and/or perspective, but do not explicitly expand upon those feelings or encourage the distressed other to further process their emotional state. Boilerplate statements, such as “I’m sorry” and “that sucks”, are categorized as MPC because although they provide a

general acknowledgement of another persons' stressful experience, they do not explicitly address their feelings or encourage reappraisal(s) of the situation.

High person-centered (HPC) messages explicitly recognize and elaborate on the feelings of a distressed other. HPC support is similar to LPC support in that they are both emotion-focused, but different in the valence of emotions; LPC messages negatively deny a distressed others' feelings, whereas HPC messages positively acknowledge and validate another's emotional state. HPC messages are argued to be qualitatively best for facilitating emotional improvement among distressed others because messages of this sort help others "gain perspective on their feelings by legitimizing and explaining their affect" (High & Dillard, 2012). For example, messages that identify the feelings of a distressed other in ways that elicit a better understanding of those emotions are deemed HPC, such as, "I'm so sorry you're feeling sad – I would feel the same way" and "I completely understand why you're frustrated – you studied so hard for that test and missing it because your alarm didn't go off probably has you sad and angry as well." (see Applegate 1978; Burleson 1985; Burleson et al., 2009).

Theoretical Underpinnings of Verbal Person Centeredness

To understand VPC, it is crucial to understand the theoretical underpinnings of the constructs. Several theoretical frameworks have been proposed to guide the study of VPC. This section documents the main theoretical perspectives that have driven VPC research.

Constructivism. Verbal person-centeredness is rooted in psychological constructivism, which argues that humans process their interactions with others and behave accordingly, ultimately creating their social realities (Nicotera, 1995). Delia

(1976) proposed that the way we make sense of and process our surroundings directly influences human behavior, and it is within the constructivist perspective that lies a key distinction between external events and internal processes. Though events may occur externally and independently from us, they are only understood through our application of knowledge that is individual and socially constructed (Delia, 1977). Constructivism holds that people's communicative behaviors are directly impacted due to variation in their interpretation of the social world (Burleson, 2007).

Constructivism is rooted in various theoretical traditions, but is perhaps most strongly based in Kelly's (1955) *personal construct theory* (Clark & Delia, 1979). Personal construct theory argues that people assign meaning to their experiences with the social world by organizing events based on similarities and differences. Through various bipolar groupings (e.g., hot-cold, tall-short, etc...), a person processes and makes sense of their world by bridging interpretation and behavior (Nicotera, 1995). These cognitive structures, or *personal constructs*, are viewed as the central element of cognitive organization (Delia, O'Keefe, & O'Keefe, 1982).

To explain variations in interpretations and processing, elements of Werner's *orthogenetic principle* (1957) were incorporated into the perspective. As defined by Werner, the orthogenetic principle states, "wherever development occurs it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation, and hierarchic integration" (p. 126). This principle argues that cognitive processing, and therefore our personal construct system, becomes more advanced as we develop and encounter new social experiences (Delia, Kline, & Burleson, 1979). Constructs develop with experience through our interactions with others and "the

acquisition of socially shared interpretations of other's behavior" (Nicotera, 1995, p. 48). Ultimately, the development of personal constructs falls along a dimension of simple-complex, varying based on experiences with others and processing of the social world (Delia, Clark, & Switzer, 1974). Merging the constructivist perspective with the orthogenetic principle explicates the relationship between social-cognitive and communicative development, ultimately highlighting the influence of development and social experiences on our interpretive processes (Gillotti & Applegate, 2000).

As per constructivism and personal construct theory, knowledge is organized into file cabinet-like constructs. Similar to filing cabinets in an office, in which some files are thicker and more complete than others, our personal constructs differ in their development and are a direct result of the social situations we experience. Comparing personal constructs to muscles, Burlison (2007) contended that our ability to employ various cognitive processes relies on these flexible structures. Just as athletic ability is determined by elements of the muscular system, social processing is determined by key elements of the personal construct system. Therefore, the development of our personal constructs directly constitutes our ability to engage in various social and communicative skills. It is this, the development of personal constructs, that determines the cognitive complexity of all people.

Cognitive complexity is a central concept of the constructivist perspective that acts as an operational mechanism of personal construct systems. Interpersonal construct systems are commonly operationalized as cognitive complexity, which indicates the sophistication with which people process information while interacting with others. "A cognitive system is 'considered relatively complex in structure when (a) it contains a

relatively large number of elements [constructs] and (b) the elements are integrated hierarchically by relatively extensive bonds of relationship” (Delia, Clark, & Switzer, 1974, p. 300, quoting Crockett, 1965, p. 49). Burleson argued that individuals with more developed construct systems, and thus higher cognitive complexity, are more adept at engaging in various communicative activities (e.g., making attributions, forming impressions, interpreting information; Burleson, 2007; Burleson & Waltman, 1988).

In the context of supportive communication, providing HPC messages requires a person to identify and respond to various features of the communicative situation, including goals, thoughts, and feelings (Burleson, 2007). It is widely believed that providing and interpreting HPC messages requires complex social-cognitive processes, because individuals must interpret people, contexts, and relationships in terms of psychologically-centered dispositions and attributes (i.e., motivations, goals, feelings, thoughts, personality) to formulate meaningful person-centered messages (see Burleson, 1985; Burleson & Caplan, 1998; Rubin & Hanzle, 1984; Samter, 2002). In line with this thinking, several studies point to the positive relationship between cognitive complexity and VPC message production (see reviews by Burleson & Caplan, 1998; Coopman, 1997) and processing (Bodie et al., 2011; Burleson, 1984; Burleson & Samter, 1985; Samter, Burleson, & Basden-Murphy, 1989; Youngvorst & Jones, 2017). For example, Samter et al. (1989) reported that people who are more cognitively complex evaluate messages in line with the formal PC hierarchy better than those who score lower on cognitive complexity. More recently, several studies provided further support for this thinking by replicating these findings (Bodie et al., 2011; Youngvorst & Jones, 2017). Taken together, these studies demonstrate the theoretical underpinnings of

constructivism, personal construct theory, and cognitive complexity on verbal person-centered supportive communication.

Coping and (re)appraisal. *Coping* involves an individual's cognitive and behavioral efforts to manage stress. A widely utilized coping model is the Transactional Model of Stress and Coping (TMSC; Lazarus & Folkman, 1984, 1987). The TMSC suggests that stressors are appraised as a threat to an individual's well-being, which is managed with internal coping resources, such as mentally distancing from the stressor, along with external coping resources, including seeking support. Thus, the appraisal of events, rather than the events themselves, is what prompts emotional distress. As Lazarus (1999) argued, appraisals explain why two people experiencing the same situation may experience different emotional outcomes. Appraisals occur in two stages. *Primary appraisal* involves evaluating a situation to ascertain whether it is a threat by assessing the favorability and relevance of the event (e.g., is this situation stressful and relevant to me?). *Secondary appraisal* includes examining one's power to change the situation and resources to manage stress (e.g., can I control this and manage the pain?). Stress emerges when an event is perceived as negative and the demand to manage the issue exceeds the person's ability to manage the stressful event (Lazarus & Folkman, 1984, 1987).

Coping behaviors are enacted when individuals are faced with stress, and specific coping strategies are grouping into five types (Lazarus & Folkman, 1984; Roth & Cohen, 1986). Of the possible behavioral responses to stressful situation, Lazarus identified *cognitive reappraisal* as a particularly effective strategy in initiating emotional change (for a review, see Lazarus, 1999). Substantial evidence suggests that distressed others who change their appraisal(s) of a situation subsequently experience emotional change

(see reviews by Lazarus, 1991; Smith & Pope, 1992). “Consequently, beneficial comforting messages are those kinds of messages that assist the distraught person in making sense of what happened, understanding the causes of experienced difficult emotions, and reassessing the external circumstances in terms of their relevance to personal well-being” (Jones & Wirtz, 2006, p. 220). Burleson & Goldsmith (1998) suggested that coping in general, and cognitive reappraisal in particular, is a discursively constructed process through which distressed others and helpers work together to initiate positive appraisals of person-environment relationships. The underlying argument to this *conversationally induced reappraisal* model is that supportive conversations encourage distressed others to (re)think through their feelings and emotions in ways that change their initial appraisal of the situation at hand, and, in turn, their emotional state.

Burleson & Goldsmith (1998) identified three necessary components of conversations that facilitate reappraisal. First, distressed others (and helpers) must be *willing* to engage in a supportive conversation. Bodie & Burleson’s (2008) recently proposed Dual-Process Theory of Supportive Message Outcomes highlights the importance of willingness, or motivation as they refer to it, on supportive message processing. In particular, they argued that only distressed others who are willing/motivated to scrutinize supportive messages will do so in ways that prompt reappraisal and improve affect. Second, conversations must focus on the distressed others’ emotions and feelings as a result of the stressful situation at hand. As Burleson & Goldsmith (1998) contended, “the only way to change a feeling state is to change what produced the feeling state in the first place: the appraisal of the distressed person” (p. 258). Thus, focusing on the emotions of a distressed other enables them to reframe their

appraisal(s) of the situation. Third, the distressed others' feelings must be discussed in an elaborated and narrative-based fashion so as to encourage reappraisals, and, in turn, improve affect. Constructing a narrative about a stressful situation produces various physical and psychological benefits for distressed others (Pennebaker, 1993, 1997), and this process encourages people to think through their feelings in ways that initiate reappraisal (Burlinson & Goldsmith, 1998). Thus, each of these components are necessary for supportive conversations to prompt cognitive reappraisal.

Surprisingly, few studies have empirically tested the model of conversationally induced reappraisal or its assumptions regarding cognitive reappraisal and emotional change therein. In fact, Jones & Wirtz (2006) conducted one of the only studies to test whether high-quality supportive communication, such as HPC conversations, facilitates cognitive reappraisal and results in emotional improvement. Results revealed that HPC support increased distressed others' verbalization of their thoughts and emotions, which facilitated cognitive reappraisal and, in turn, improved their emotional state. This study provides preliminary support for an appraisal-based comforting model, suggesting that supportive conversations can result in more positive interpretations of stressful situations and brightened affect. However, more research is needed to fully explicate the process of conversationally induced reappraisal.

Verbal Person Centeredness

Research consistently documents support for a verbal person-centered approach to supportive communication. People almost universally evaluate supportive messages with HPC characteristics as more beneficial than either MPC or LPC messages in both offline and online contexts (High & Dillard, 2012; Spottswood, Walther, Holmstrom, & Ellison,

2013). HPC messages are widely documented as more effective support than LPC or MPC messages (Burlison, 2003), and a recent meta-analysis reported a strong positive relationship between the level of VPC in a message and the outcomes people experience (High & Dillard, 2012). In fact, higher levels of VPC correspond with enhanced psychosocial well-being (Pennebaker, 1993), brightened affect (Jones, 2004), lower physical stress (Cohen & Wills, 1985; Smyth & Pennebaker, 1999), reduced anxiety (Sgoutas-Emch & Johnson, 1998), and improved reappraisal of a stressor (Burlison & Goldsmith, 1998; Jones & Wirtz, 2006).

Although some evidence suggests that highly person-centered supportive messages are naturally produced in supportive interactions (Samter, 1984, 1985), other research indicates that HPC support rarely occurs in talk (Metts, Backhaus, & Kazoelas, 1995). Even when HPC support does occur, such messages do not always produce positive benefits for support receivers. A wealth of studies report that enacted support accounts for a relatively small amount of variance on people's perception of support quality (Cutrona & Russell, 1990; Lakey, Drew, & Sirl, 1999). In fact, interaction studies report that VPC explains less than 15% of the variance in emotional improvement (Jones, 2004) and perceived support quality (Jones & Guerrero, 2001). Solomon & Priem (2016) argued, "[t]hese patterns suggest that people's evaluations of enacted support are influenced by factors beyond the messages themselves" (p. 700). Thus, understanding the process and outcomes of VPC supportive communication is difficult when considering the various individual and relational factors that influence such interactions. Supportive communication is a dynamic process and explicating the nuanced complexities of VPC depends on the individuals, relationship, and situation.

Gender. Several studies identify discrepancies in the ways men and women engage in supportive interactions, with evidence suggesting that women are more skilled at providing effective emotional support than men (for reviews, see Goldsmith & Dun, 1997; Kunkel & Burleson, 1998). Explanations for this come from several studies indicating that support is most frequently sought from women (e.g., Akiyama, Elliott, & Antonucci, 1996), that people prefer women as support providers (e.g., Kunkel & Burleson, 1999), and that women more greatly appreciate the ability to effectively provide support compared to men (e.g., Burleson, Kunkel, Samter, & Werking, 1996). Thus, women experience more opportunities to provide support than do men, which, in turn, enhances their ability to be skillful helpers. Direct empirical support has also been reported for the positive relationship between gender and support provision. Upon having participants review a hypothetical scenario of a distressed friend, MacGeorge, Clark, and Gillihan (2002) reported that female respondents provide emotional support messages with higher levels of verbal person centeredness *and* reported greater self-efficacy in doing so compared to male respondents.

Kunkel (2002) reported similar results for supportive message evaluations; women evaluated supportive messages as significantly more consistent with the 9-level VPC hierarchy than did men. Other evidence highlights how women often evaluate HPC messages more favorably and LPC messages less favorably than do men (Kunkel & Burleson, 1999). More recently, High and Solomon (2014) examined the influence of gender on verbal person-centered supportive interactions, and showed that that VPC supportive conversations between same-sex *versus* cross-sex dyads are perceived differently as a function of the gender of each communicator. In particular, female

support receivers perceived the quality of HPC messages as higher *and* LPC as lower when communicating with other women compared to men. Additionally, men tend to perceive HPC messages from other men as less favorable than when perceiving HPC messages from women (Burlison, Holmstrom, & Gilstrap, 2005). Ultimately, understanding the process and outcomes of VPC support necessitates an understanding of the role gender plays on supportive interactions.

Perceived controllability. The extent to which people engage in and experience beneficial outcomes from supportive communication is also moderated by support providers' and receivers' perceived controllability of the situation. Locus of Control (LOC) refers to the extent with which people either internalize (an internal LOC) or externalize (an external LOC) the cause of events (Lefcourt, 1982). For instance, an internal LOC who fails a test would see the event as caused by the self (e.g., lack of studying), whereas an external LOC experiencing the same situation would see the event as caused by external forces (e.g., the teacher made the test too difficult). Research highlights that internal LOCs more often experience the stress-buffering positive effects of social support than do external LOCs (Cummins, 1988; LeFcourt, Martin, & Saleh, 1984; Sandler & Lakey, 1982). Bodie & Burlison (2008) posited that internal LOCs are likely highly motivated to scrutinize supportive messages because they take responsibility for the problem and its' resolution, which enables them to capitalize on the benefits of social support. Perceived controllability also influences the ways support providers experience supportive interactions, such that putative helpers are more likely to provide support and less likely to feel annoyed when providing support if they perceive the distressed others' situation as uncontrollable *vs.* controllable (Barbee, 1991).

Another reason perceived controllability influences supportive interactions is because it predicts the types of support that are most helpful in any given situation. Cutrona and Russell's (1990) optimal matching model argues that support effectiveness depends on the stressor, such that controllable events warrant action-facilitating support (e.g., network, tangible) whereas uncontrollable events warrant nurturant support (e.g., emotional, esteem). Several studies document how matching support with the stressor benefits distressed others' ability to cope with their situation (Cutrona, Shaffer, Wesner, & Gardner, 2007; Seawell, Cutrona, & Russell, 2014). In particular, Cutrona (1990) revealed the ineffectiveness of emotional support in controllable situation, and Rains, Brunner, Akers, Pavlich, and Goktas (2016) reported that receiving informational support in a controllable situation resulted in less negative reactions to the stressor than did emotional support. Thus, high-quality emotional support, such as HPC messages, is not *always* the most effective type of support for facilitating coping. Rather, the applicability and effect of HPC support depends on the situation at hand and its perceived controllability. Simply put, "the number of helpful behaviors that a person receives after a stressful event may not matter as much as specific fit of the helpful behavior to the problem or emotion at hand" (Barbee & Cunningham, 1995, p. 408).

Relationship status/quality. A wealth of research identifies that relationship status (e.g., stranger, acquaintance, friend) and quality (e.g., satisfaction, closeness, intimacy) also significantly moderate the ways support providers and receivers engage in supportive communication (Clark & Delia, 1997; Cutrona & Suhr, 1992). Social support is most frequently sought, provided, and expected within the context of close relationships rather than among strangers or acquaintances (Agne & White, 2009;

Cutrona & Suhr, 1992; Westmyer & Myers, 2009; Winstead, Derlega, Lewis, Sanchez-Hucles, & Clarke, 1992). Providing high-quality support, such as HPC messages, is difficult because it requires in-depth personal, relational, and contextual information about the distressed other and their stressor. Consequently, close relational partners possess the depth and breadth of information necessary to attend to a distressed others' various supportive needs. In fact, Karniol (1990) identified that interactions between friends are rooted in a relational history that provides a wealth of personal information about one another; conversely, strangers must rely on procedural and contextual information to interpret behaviors and information. Such relational history also enhances support provider's ability to interpret distress cues and recognize a supportive need among friends rather than strangers (Colvin, Vogt, & Ickes, 1997). Thus, close relational partners are not only better at identifying a distressed others' supportive need, but are also more skillful in providing high-quality support.

Relationships status also exerts influence on how support receivers evaluate supportive messages. Clark et al. (1998) reported that supportive messages are perceived as more supportive in the context of close compared to casual relationships. Bodie and Burleson (2008) argued, "relationship status functions as an environmental cue associated with a decisional heuristic for processing messages in support situation (e.g., 'close friends provide helpful support in times of need')" (p. 378). Several studies offer empirical support consistent with this notion, reporting that perceptions of and responses to supportive behaviors are significantly influenced by the receivers' perception of the provider-receiver relationship status (e.g., Fincham, Garnier, Gano-Phillips, & Osborne, 1995; Knobloch, MacGeorge, & Lucchetti, 2004; Young, 2004). Ultimately, due to sets

of expectations we develop about social support availability for various types of relationships (Pierce, Sarason, & Sarason, 1991), relationship status can dictate how support receivers scrutinize support and may even promote low-elaboration processing of supportive messages (Bodie & Burleson, 2008).

Relationship quality also influences supportive communication. For instance, both relational satisfaction and closeness are positively associated with the production and perception of social support (Feeney & Collins, 2001; Hobfoll & Lerman, 1989; Kaul & Lakey, 2003). Cutrona and Suhr (1992) also revealed that relational closeness predicts expectations of others, such that people expect high levels and a wide array of social support from others that are relationally closest to them. Goldsmith (2004) noted that close relational partners experience high levels of interdependence, which affects how support receivers and providers jointly navigate stressful situations and discuss problems. Thus, engaging in supportive communication requires that “each individual is not only involved in the provision or receipt of support but also is engaging in important relational and identity work.” (p. 470). Research on the impact of relational quality on supportive communication highlights the positive association between perceived relational quality and perceived support (Cutrona, Cohen, & Igram, 1990; Frazier, Tix & Barnett, 2003; Pierce, Sarason, & Sarason, 1992). More recently, Cannava & Bodie (2016) reported that relationship type significantly increased the extent to which support receivers experienced positive outcomes of supportive conversations. They found that participants reported greater levels of emotional improvement and cognitive reappraisal upon engaging in a brief supportive conversation with a friend compared to a stranger.

Sentiment override is an important concept when considering the influence of relationship type on supportive communication. Weiss (1980) coined sentiment override as the tendency to perceive a relational partners' behavior consistent with one's overall sentiment toward that partner rather than their specific behaviors. For example, behaviors performed by those with whom we are satisfied will be perceived more positively as a result of relational satisfaction. Studies reveal that satisfied relational partners tend to make "relationship enhancing" attributions about their partners' behaviors (e.g., positive behaviors are perceived as intentional and stable), whereas unsatisfied relational partners tend to make "distress-maintaining" attributions (e.g., negative behaviors are selfishly motivated and purposeful; for reviews, see Bradbury & Fincham, 1990; Bradbury, Fincham, & Beach, 2000).

This phenomenon has been consistently demonstrated within the context of social support. Rini and colleagues argued that satisfactory relationships produce supportive environments that enable receivers to more effectively process supportive messages and perceive received support as effective (Rini, Dunkel-Schetter, Hobel, Glynn, & Sandman, 2006). Moreover, Frazier, Tix, and Barnett (2003) reported that participants experienced greater distress upon receiving unsupportive spousal behaviors only when they also reported low satisfaction with the marital relationship. Others have documented that sentiment override most frequently occurs within men (Carels & Baucom, 1999), and that relational satisfaction is positively associated with the quality of support we expect from others (Fincham et al., 1995). In the context of verbal person-centered supportive communication, sentiment override may enable receivers who are satisfied with the provider-receiver relationship to not only capitalize on the benefits of HPC messages, but

also avoid the negative repercussions of LPC messages. Such a claim, however, has not yet been tested, so further research is necessary to explicate the relationship between sentiment override and VPC supportive communication.

Research Approaches to Studying VPC Supportive Communication

Researchers studying supportive communication have employed various methodologies to answer questions about the process and outcomes of verbal person-centered support. Given the various components working together to produce effective supportive interactions, it makes sense that different methodologies could be utilized to enable researchers from various perspectives to answer different types of questions about VPC. In particular, four research paradigms have emerged as effective assessments of supportive communication (for reviews, see Burleson, 2003; Burleson & MacGeorge, 2002).

Naturalistic paradigm. The naturalistic approach to studying supportive communication employs retrospective self-reporting as the primary methodology through which to assess received and perceived support (Dunkel-Schetter et al., 1992). Research conducted within this paradigm necessitates that participants retrospectively identify the “helpful” and “unhelpful” behaviors they receive from others (Lehman, Ellard, & Wortman, 1986); these perceptions are then used to predict psychosocial outcomes of support, such as well-being (Clark & Stephens, 1996). An obvious advantage to this paradigm resides in its ecological validity, because real-life supportive experiences create the basis for assessing supportive communication (Burleson, 2003). Serious limitations to this paradigm exist, however. For instance, this approach is rooted in retrospective self-report, which is inherently biased and impossible to verify. Additionally, research

documents the difficulty with which people recall the details of past interactions, such as specific supportive behaviors; rather, memory is biased in how we *perceive* our interactions with others (Benoit, Benoi, & Wilkie, 1995). Thus, a naturalistic approach complicates researcher's ability to study enacted support due to the reliance on self-report and retrospective data.

The naturalistic approach has rarely been applied to verbal person centeredness, likely because VPC is conceptualized as a message characteristic rather than a behavior that can be retrospectively identified and/or evaluated (for a review, see MacGeorge et al., 2011). In fact, only recently was a measure introduced that enabled researchers to assess participants' recall of supportive experiences in-line with verbal person centeredness. Harvey-Knowles and Faw (2015) introduced the Provider Expressions of Verbal Person-Centeredness (PE-VPC) Scale, which is a self-report measure assessing the frequency with which participants experienced verbal person-centered supportive behaviors. More research is needed, though, to garner a more ecologically valid understanding of verbal person-centered supportive interactions.

Message perception paradigm. Another approach to studying supportive communication is the message perception paradigm (Burlison & MacGeorge, 2002). Research adhering to a message perception paradigm requires people to evaluate nine pre-formulated messages in response to a hypothetical scenario, wherein each message operationalizes one distinct theoretical dimension of the VPC message hierarchy (e.g., Burlison et al., 2009; Burlison & Samter, 1985). For example, participants are asked to imagine someone they know experiencing a stressor (e.g., romantic breakup, losing a scholarship) and to evaluate the various supportive messages corresponding to the nine-

level VPC hierarchy on a variety of measures (e.g., perceived sensitivity, perceived effectiveness; Caplan & Samter, 1999; Jones & Burleson, 1997). Such an approach inherently means that the assessment of supportive communication is based in third-party evaluations of supportive messages provided to others and by others (Burleson & Samter, 1985; Samter, Burleson, & Murphy, 1987). The message perception paradigm offers significant benefits for researchers, one of which being the ability “to isolate, control, and observe the effects of specific message features such as ‘person centeredness’” (Burleson & MacGeorge, 2002, p. 391). Drawbacks exist too, however, such that a message perception approach relies on third-party support evaluations as the measure of support rather than real, personal supportive experiences. Ultimately, the message perception paradigm enables research on the evaluations of verbal person-centered supportive messages, but fails to account for the interdependence inherent to supportive communication.

Dyadic paradigms. Two additional approaches, the interaction analysis paradigm and the experimental paradigm, incorporate dyadic interactions to study supportive communication. The interaction analysis paradigm involves participants engaging in laboratory-based video recorded supportive conversations that are subsequently transcribed and analyzed with respect to verbal person centered support (Burleson, 2003). Research adhering to this approach requires that participants either show up to a research laboratory with a relational partner with whom they can interact throughout the study, such as a romantic partner (e.g., Cutrona & Suhr, 1994) or friend (e.g., Cannava & Bodie, 2016), or are randomly paired with a stranger (e.g., High & Solomon, 2014). Within the interaction analysis paradigm, participants are often assigned a specific “role” to play

during the conversation (i.e., provider, receiver), such that the support provider is directed to identify a current stressor they are experiencing and the support provider is instructed to respond to their partner and discuss the situation at hand.

This approach is beneficial because it enables researchers to analyze the turn-by-turn process of supportive communication; it does not adhere to the same recall limitations of the naturalistic paradigm, and overcomes issues of ecological validity associated with the message perception paradigm by being based in real, personal supportive experiences. This approach involves several limitations as well, however. Initially, the interaction analysis paradigm affords researchers little control regarding the types or styles of support that can be examined due to the focus on quasi-natural supportive interactions (Burlison & MacGeorge, 2002). Additionally, evaluating video-recorded supportive interactions requires researchers to employ coding procedures to assess supportive communication. In particular, this research involves examining categorically coded observations, which mean that observations must be both recorded and coded into analyzable units. Kenny, Kashy, and Cook (2006) argued that validly and reliably coding conversational data is one of the most difficult part of interaction and sequential analyses.

Another approach that incorporates dyadic interactions is the experimental paradigm, which differs from the interaction analysis paradigm by allowing researchers to employ various procedures to control for elements of the interactions and/or induce stress. For instance, Jones & Guerrero (2001) paired participants with a confederate who was trained to produce more or less person-centered messages (i.e., LPC, MPC, HPC) during the conversation. This methodology enabled the researchers to control for verbal

person centeredness within the conversation, and thus analyze specific dimensions of VPC supportive communication. Similarly, High (2011) conducted on-the-spot supportive manipulations so as to control for and analyze verbal person centeredness. The experimental paradigm also enables researchers to control for and/or induce stress in participants. For instance, Tardy (1994) required participants to respond to various supportive messages while completing a cognitively challenging and stressful task. One strength to this approach is that researchers can control for theoretical dimensions of interest (e.g., verbal person centeredness) within supportive interactions. Additionally, the basis of supportive communication as studied within the experimental paradigm lies in actual stressors experienced in real-time. Conversely, collecting experimental interaction data is difficult and resource consuming.

The importance of adopting a dyadic approach to studying supportive communication becomes apparent when examining the interpersonal and interdependent nature of social support. At its core, supportive communication is an interpersonal process; the fundamental goal of supportive communication is to enact behaviors with the sole intention of changing the communicative and psychological responses of another person (Jones & Bodie, 2014). O'Keefe, O'Keefe, and Delia (1980) defined interpersonal communication as continuously dynamic and changing, where all "ingredients" of the process interact to affect each other. In line with this theoretical approach, Craig (1999) argued that communication is a process where shared meaning is produced and reproduced. Therefore, communicators are inextricably linked, such that the thoughts and behaviors of one person impact those of the other. Cappella (1987) argued that intersubjectivity between communicators cannot be an afterthought, but must constantly

drive social science research. Thus, adopting a dyadic approach to the study of supportive communication ensures that researchers fully and accurately account for the theoretical connection between interactants.

Various studies of supportive communication document the dyadic nature of interpersonal communication. One of the first dyadic approaches to supportive communication was Sensitive Interaction Systems Theory (SIST), which argued that relational partners collaborate in support. This theory has highlighted how individual self-presentation directly impacts others provision of support. For instance, Riggio (1992) revealed that people who are more skilled at expressing their emotional needs received more support than others. This provides evidence for the dyadic process of supportive communication, as the communicative behaviors of each relational partner stimulate predictable responses in the other.

Research also documents the interdependent nature of verbal person-centered support. Jones (2004) reported that people who provide HPC messages were evaluated as more supportive and competent. This suggests that people who more closely respond to the needs of their partner not only are not only evaluated as better communicators, but also facilitate positive reappraisal within their partners. Interaction studies exploring person centeredness add further evidence to the dyadic nature of supportive communication. High and Solomon (2014) reported a positive association between support providers' and receivers' perception of person-centered supportive communication, such that a providers' confidence in HPC support provision positively correlated with the receivers' perception of support quality. The authors recently (2016) extended such findings by revealing the durable effects of HPC messages on support providers' and receivers'

perception of supportive conversations. This research adds credence to the dyadic nature of supportive communication, advancing our understanding of VPC support in general, and the role of each partner in particular.

Given the various paradigms that have emerged, incorporating a dyadic approach to studying supportive communication is vital to fully explicate the interdependent nature of social support. Not only is this approach theoretically grounded, it also has become methodologically possible through recently developed analytical tools. Beyond this, a wealth of research has substantiated the dyadic nature of supportive communication and illustrates the theoretical and empirical benefits of adopting a dyadic approach. Despite the various challenges that may arise, it is necessary to continue dyadic research to ensure a well-rounded and fully developed understanding of interpersonal communication.

Supportive Conversations

Studying social support from a communicative perspective requires focusing on factors beyond the *messages* communicated by or *relationship* between supportive communicators; it is also vital to study “the *interactions* in which supportive messages are produced and interpreted” (Burlison et al., 1994, p. xviii). As Jones and Bodie (2016) note, “people do not talk in messages; people have supportive conversations with other people they know well, and it is these conversations and relationships that sustain peoples’ sense of perceived support and that ultimately contribute to well being” (p. 378). It is through conversation that support providers can focus and elaborate on the thoughts and feelings of a distressed other in ways that prompt reappraisal and emotional improvement (Burlison & Goldsmith, 1998). Additionally, studying *conversations* is a move toward adopting a dyadic approach to the study of supportive communication. The

structure of supportive conversations involves several key components (Barbee & Cunningham, 1995; MacGeorge et al., 2011), four of which are discussed here.

Support seeking. Support seeking, defined as “intentional communicative activity with the aim of eliciting supportive actions from others” (MacGeorge et al., 2011, p. 330), is a complex and consequential process. Its complexity involves the range of behaviors that can elicit support, and its consequences lie in the quality of the messages it generates. Barbee and Cunningham’s (1995) Sensitive Interaction Systems Theory (SIST) asserts that seeking support occurs both verbally and nonverbally and varies along a continuum of directly to indirectly requesting assistance. These two dimensions were originally theorized to cross and produce a typology of strategies for seeking support. Support seekers can *ask* for help (verbal/direct), *hint* at or *complain* about a problem (verbal/indirect), *cry* to indicate distress (nonverbal/direct), or *sulk* to seek support (nonverbal/indirect).

Although the specific strategies of seeking support (i.e., ask, cry, hint, and sulk) have received less research attention, the general logic of SIST, and the direct/indirect dimension in particular, provides perhaps the best account of how variations in seeking support shape the transaction of supportive communication. Barbee and Cunningham (1995) argued that the strategy used to seek support predicts the quality of support that is subsequently provided, such that “each individual’s behavior tend[s] to elicit a reciprocal behavior from their interaction partners” (p. 397). Research has demonstrated that support seekers using direct strategies often receive effective support from others, including expressions of empathy or suggestions to solve a problem. Conversely, due to its ambiguous nature, indirect support seeking is often dismissed, ignored entirely, or met

with less effective forms of support (Derlega, Winstead, Oldfield, & Barbee, 2003). Thus, how people seek support influences the quality of the support they receive.

Support provision. Support provision requires that helpers first identify a distressed others' supportive need. Thus, people who can readily and accurately identify the emotions, thoughts, and feelings of those with whom they interact are more adept at providing quality support. In fact, Verhofstadt and colleagues reported that individuals who had more accurate insights into a distressed other's thoughts and feelings provided more skillful support (Verhofstadt, Buysse, Ickes, Davis, & Devoldre, 2008). Research also documents that providers who do not match their efforts with a recipient's needs can not only make their experience worse, but may also negatively affect the relationship (Goldsmith, 1992). As Walther and Boyd (2002) explain, "inexpert sources may be more or less directive or blindly reassuring than needed at various points in dealing with a problem. Should [support providers] persist, their efforts at assistance may be ineffective, annoying, or counterproductive" (p. 157).

Beyond identifying a supportive need, helpers must also have the ability to provide sophisticated, high-quality messages (Burleson, 1982, 1983, 1985). As previously mentioned, cognitive complexity is positively associated with one's ability to produce highly sophisticated supportive messages (Burleson & Caplan, 1998; Coopman, 1997), and accounts for 10% to 40% of the variance in message production (Burleson, 1985). Motivation is an equally influential variable on the production of high-quality supportive messages, as research documents how motivated people produce more effective comfort than do those who are less motivated (Jones & Burleson, 1997;

MacGeorge, 2001). Thus, various elements are fundamental to one's production of effective supportive messages.

Support processing. Processing supportive messages places great strain on support recipients, because they must scrutinize highly sophisticated and complex messages to reap the benefits of such messages (Bodie et al., 2011; Bodie, Burleson, & Jones, 2012). In fact, the Dual-Process Theory of Supportive Message Outcomes suggests that several factors moderate supportive message evaluations (for a review, see Bodie & Burleson, 2008). As per Bodie and Burleson (2008), the DPT argues that message scrutiny predicts whether support receivers will experience positive outcomes; supportive messages that are more closely scrutinized (i.e. processed) are not only evaluated as more important and helpful in ways that directly impact behavioral and/or cognitive change, but are more likely produce more stable and durable outcomes than messages that receive less scrutiny (Bodie, Burleson, & Jones, 2012). The scrutiny through which people analyze messages is driven by two distinct factors, including a person's *motivation* to process a message, as well as their *ability* to do so (Bodie et al, 2011). Only if a person is highly motivated and able to process a supportive message will they do so in ways that result in behavioral, cognitive, and/or emotional change.

The Dual-Process Theory of Supportive Message Outcomes shows that socio-cognitive and motivational factors moderate the effects of PC messages on outcomes, such as emotional improvement (Bodie & Burleson, 2008). In fact, DPT research shows that ability factors, such as cognitive complexity (Bodie et al., 2011), as well as motivational factors, such as a) expressive and instrumental orientations (Burleson et al., 2009); b) a willingness to experience and express emotions (Bodie, 2012); or c) level of

emotional upset (Bodie et al., 2011), influence recipients' message processing (or scrutiny). For example, people with higher levels of cognitive complexity and empathy tend to perceive supportive messages with higher levels of PC content as more supportive than PC messages that have less of these characteristics (Bodie et al., 2011; Burleson & Samter, 1985; Samter, Burleson, & Basden-Murphy, 1989). Although there are several plausible explanations for these findings, Youngvorst and Jones (2017) posited that people with higher levels of cognitive complexity and empathy may have acquired "more experiential knowledge through frequent exposure to supportive communication and therefore are more adept at identifying and acknowledging the other-oriented emotions inherent to HPC messages (Applegate, Burke, Burleson, Delia, & Kline, 1985; Eisenberg, 2000; Jones, Bodie, & Hughes, 2016)" (p. 550).

Considering the wealth of research revealing influential factors on message processing, it is important to identify additional factors that further increase a person's evaluation(s) of effective comfort. Because accurately evaluating PC messages requires attention to various features of the communicative situation, additional factors that increase a person's attention and/or awareness might facilitate this evaluation process. One likely factor is *mindfulness*, which is a person's present awareness and nonjudgmental, nonreactive processing of present stimuli (Brown & Ryan, 2003). Mindfulness is argued to increase a person's awareness and attention to present stimuli; thus, it likely assists in how people attend to and evaluate contextual and emotional content that is embedded in supportive messages. Considering the direct associations between mindfulness and cognitive/affective processes relevant to supportive communication (e.g., Eberth & Sedlmeier, 2012; Jones et al., 2016; Jones & Hansen,

2014; McCarney, Schulz, & Grey, 2012), Youngvorst and Jones (2017) empirically tested the relationship between mindfulness and message evaluations. As expected, cognitive and motivational factors predict the degree to which people differentiated between more and less PC messages; participants were better able to respond to the nuanced differences that are captured in more and less PC messages. Results also highlighted an indirect relationship between mindfulness and message evaluations, such that mindfulness did not directly influence a person's ability to differentiate between more or less PC messages, but rather did so indirectly *through* empathy. This study suggests that mindfulness does not influence PC supportive behavior itself (e.g., message evaluations), but actually impacts cognitive-affective processes that, in turn, influence message processing. Ultimately, various factors have been identified as influential on supportive message processing, such that support receiver's motivation and ability to process supportive messages most strongly predicts the outcomes they experience.

Contextual Influences. Another important component of supportive conversations is context, as various contextual factors have been reported as significantly influential on the supportive communication process (for a review, see Bodie & Burleson, 2008). In fact, Burleson (2009) identified "context" (i.e., physical setting, conversational medium) as one of the most influential factors on supportive interactions and their outcomes, and often interact with message, source, and recipient factors in ways that further complicate the support process. One such contextual factor is the medium or channel through which supportive conversations occur. Research highlights that people are increasingly turning to mediated channels to create, sustain, or supplement supportive interactions (Ellison, Gray, Lampe, & Fiore, 2014). Because social relationships play out

in a variety of ways depending on the communication modalities in which they occur (Walther & Parks, 2002), the channel of an interaction fundamentally shapes the nature of supportive interactions that occur therein.

Various studies highlight discrepancies between the process and outcomes of supportive interactions that occur in face-to-face (FtF) compared to Computer-Mediated (CM) venues (High, 2011; High & Solomon, 2014, 2016). For instance, Walther and Boyd (2002) identify various reasons why CM venues benefit supportive interactants, such as the anonymity they afford and their convenience. However, a recent meta-analysis reported that self-disclosures occur less frequently online than they do FtF (Ruppel et al., 2016), which has significant implications for online supportive communication given that disclosure is argued to be a necessary precursor to social support (Chaudoir & Fisher, 2010; Kim & Lee, 2011; Ko & Kuo, 2009; Lee, Noh, & Koo, 2013). Considering the complexities inherent to computer-mediated supportive interactions, further review is needed to explicate *how* and *why* CM venues influence social support. Thus, the subsequent chapter explores this topic in much more depth.

Chapter Summary

This chapter provided a comprehensive review of social support in general, and supportive communication in particular. Rooted in sociology and psychology, supportive communication developed from a need to understand the communicative processes involved in effective supportive interactions. Over several decades, an impressive body of scholarship has emerged that explores how the communication of different types (i.e., emotional, esteem) and styles (i.e., verbal person centeredness) of support influence supportive interactions (Cutrona & Suhr, 1990; Burleson, 1999). Scholars within this

field have explored how distressed others seek support (Barbee & Cunningham, 1995), the process of support provision (Burleson, 1985; Jones & Burleson, 1997) and processing (Bodie et al., 2001; Youngvorst & Jones, 2017), moderating factors on the outcomes of supportive interactions (Bodie & Burleson, 2008), and both relational (Clark & Delia, 1997; Cutrona & Suhr, 1992) and contextual (Walther & Boyd, 2002; High & Solomon, 2014) influences on supportive communication. Additionally, a breadth of methodologies have been employed to conduct this research, including naturalistic (Dunkel-Schetter et al., 1992), message-based (Burleson et al., 2009; Burleson & MacGeorge, 2002), and dyadic (Cannava & Bodie, 2016; Jones & Guerrero, 2001) approaches. The analytical tools through which to analysis these data have changed greatly as well, now permitting researchers to account for interdependence inherent to dyadic (i.e., supportive) interactions (Kenny, Kashy, & Cook, 2006). Ultimately, this wealth of research highlights the importance of supportive communication on human health and well-being; thus, research must continue to fully explicate the processes and outcomes of supportive communication.

Chapter Three

As discussed in chapter two, social support is an important relational resource that positively impacts people's health and well-being. Beneficial in times of stress, effective emotional support, such as HPC messages, enables people to effectively cope with stressors by facilitating reappraisal of negative emotions (Burleson & Samter, 1985). Accordingly, supportive communication has emerged as an important growing body of research with widespread interest from a multitude of disciplines (MacGeorge et al., 2011). One of particular importance is the field of computer-mediated communication (CMC), as the growth of the Internet and other technological media have prompted a need to explore how and in what ways communicative interactions, such as social support, occur through mediated channels (Walther, 2004).

The drastic rise of Internet access and CMC has led to new ways for people to engage in supportive communication. People no longer need to rely on face-to-face (FtF) settings through which to receive advice or support. Instead, supportive communication can be received from almost any online user located nearly anywhere across the globe. Although FtF support will always be a staple of close relationships, mediated channels contain a variety of unique communication characteristics that impact supportive communication online. Despite a greater number of people turning to various technological media to provide and seek social support, however, supportive communication research is often limited to FtF interactions (Davison, Pennebaker, & Dickerson, 2000). Though widespread research on computer-mediated communication (CMC) exists, relatively little work has analyzed social support within a technological context. This is concerning, considering Walther & Parks (2002) point out how social

relationships can play out in a variety of ways depending on the communication modalities in which they occur. More specifically, extant CMC research has largely focused on computer-mediated support in general rather than the online supportive communication process in particular (Feng, Li, & Li, 2013). Thus, a clear disconnect exists in our understanding of social support as a communicative process and how various features of technology may impact this process.

Two elements are notable when considering the research that *does* examine how technology impacts social support. First, the research largely focuses on how this process occurs through online blogs and/or support groups (e.g. Bane, Haymaker, & Zinchuk, 2005; Coulson, 2005; Griffiths, Calear, & Banfield, 2009; Tanis, 2007; van Uden-Kraan et al., 2008; Wright, 1999). While important, this context is limited; it does not include elements inherent to other technological media. Therefore, expanding our understanding of how the social support process occurs in other technological contexts is needed. Second, the research that does span beyond online support groups by focusing on other computer-mediated (CM) venues (e.g., social networking sites, instant messaging) often report findings that are contrary to what is known about social support in FtF situations (High et al., 2014; Feng, Li, & Li, 2013). For instance, CMC venues often allow users more time than FtF interactions to construct messages appropriate to a given situation (High & Solomon, 2011). Further, CMC venues promote self-disclosure with less risk than FtF contexts (Joinson, 2001). Therefore, preliminary information suggest technology not only influences the supportive communication process, but has the capability to change it entirely. Because the unique features of CMC alter online communication,

research must continue to explore the influence of CM venues on online supportive communication to ensure the endurance of this relational resource in all contexts.

Considering the increasing prevalence of technology on our everyday lives, a need to understand the impact of technology on the supportive communication process remains crucial. This examination must not only build on previous CMC literature, but also expand our understanding of social support as a communicative process into a variety of relevant media. Therefore, the aim of this chapter is to provide a comprehensive review of literature surrounding computer-mediated communication in general, and computer-mediated supportive communication in particular. More specifically, to better conceptualize supportive communication within our technological world, this chapter explores *how* and *why* various CM venues influence the support process.

Theoretical Underpinnings of Computer-Mediated Communication

Before exploring computer-mediated supportive interactions in particular, it is first important to understand the various theoretical approaches to computer-mediated communication in general. Over the past four decades, several theories of computer-mediated communication (CMC) have been introduced, each of which differ in terms of the *process* and *outcomes* of technologically-mediated interactions. The following section maps the emergence of key theories of CMC and the implications they provide for interpersonal interactions (e.g., supportive communication) therein.

Cues filtered out theories. When considering why and how people use communication-based technologies, two key questions must be answered: 1) why do people choose certain media over others, and 2) how do interactions occur within the

medium that is chosen? Social scientists have long been driven to answer these questions, and to determine if and/or how CMC differs from FtF communication. In particular, two key theoretical approaches were posited to explain how computer mediated (CM) channels influence communicative processes: Social Presence Theory (Short, Williams, & Christie, 1976) and Media Richness Theory (Daft & Lengel, 1986). These theories are often discussed in conjunction with one another, and are referred to as the “cues filtered out” theories because they both argue that CMC venues filter out cues necessary for effective interactions (Walther, 1992, 1996). Though our social world has changed drastically since the development of these theories, particularly with respect to technology, they remain two of the most well-known and utilized theories of CMC (D’Urso & Rains, 2008).

Social Presence Theory. The first theoretical approach to explain CMC was Social Presence Theory (Short et al., 1976). Rooted in social psychology and theories of interpersonal communication, this theory hinges on the concepts of immediacy and intimacy (Cui, Lockee, & Meng, 2013). More specifically, immediacy regards enhancing closeness through communication behaviors, such as eye contact and facial expressions (Wiener & Mehrabian, 1968), whereas intimacy regards the feeling of closeness with another person (Argyle & Dean, 1965). When considered in the context of CMC, Short et al. (1976) argued that social presence is determined through immediacy and intimacy and can be defined as “the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationship” (p. 65). The fundamental argument of this theory is that media that elevate levels of social presence (through feature that promote verbal and nonverbal immediacy) increase the intimacy between interacting

users, and therefore, their ability to communicate effectively (Kehrwald, 2008).

Ultimately, it is through a user's subjective interpretations and a medium's objective characteristics that influences social presence.

Social presence helped pave the way for researchers to explore the process of CMC. However, several critiques have arisen about the functionality and accuracy of social presence as a theoretical approach to CMC. For instance, many argue that it has yet to be fully explicated (Biocca, Harms, & Burgoon, 2003; Cui, Lockee, & Meng, 2013; Lombard & Ditton, 1997). In fact, Short et al.'s definition has been criticized for failing to account for all the components of social presence in CM settings (Rafaeli, 2008; Tu, 2002). Often defined as the "sense of being with another" in virtual environments, Biocca, Harms, & Burgoon agreed that the definition and operationalization of social presence is inadequate for successful utilization and measurement. They further argued that existing measurements of social presence frequently confound the difference between conditions for social presence with the effects of social presence, and often measure the medium itself rather than the phenomenal state of social presence itself. Therefore, not only is the concept of social presence fundamentally vague, but measurements that attempt to operationalize it do so incorrectly.

Several studies have aimed to better explain and define social presence theory. Through synthesizing the diverse literatures regarding social presence, Lombard & Ditton (1997) defined social presence as "the perceptual illusion of nonmediation" (p. 10). Under this view, presence no longer occurs along a continuum of more or less social presence. Instead, how users perceive levels of social presence within a medium is determined through there being more or less instances of the illusion of non-mediation

during CMC interactions. As explained, “an ‘illusion of nonmediation’ occurs when a person fails to perceive or acknowledge the existence of a medium in his/her communication environment and responds as he/she would if the medium were not there” (p. 10). This definition offers a more sophisticated conceptualization of social presence, ultimately promoting accurate operationalization and measurement. Seeming to satisfy concerns regarding the vague and circular definition of social presence theory (Biocca, Harms, & Burgoon, 2003), future research must test how this new conceptualization of social presence applies to CMC. More specifically, how well the concepts of this definition apply to social presence must be better understood and more accurate measurements of social presence must be constructed.

Despite its critiques, social presence theory presents significant implications for CM supportive interactions. Social presence theory holds that elevated levels of social presence enhance communication through immediate behaviors that results in feelings of intimacy between users. This has direct implications for social support, as support provision requires complex communication processes and message sophistication (see Burleson, 1985; Burleson & Caplan, 1998; Rubin & Hanzle, 1984; Samter, 2002). Therefore, as CMC environments are generally accepted to enable reduced social presence compared to FtF contexts, CMC may not be the ideal environment through which to employ social support. However, if social presence theory is better defined and operationalized (as is suggested above), social presence may impact computer-mediated social support in unique ways that must be (re-)examined and understood.

Media Richness Theory. A second theoretical approach to explain CMC was Media Richness Theory (Daft & Lengel, 1986). To advise managers on how they can

improve performance on equivocal tasks, or those with information that have multiple and/or conflicting meanings (Dennis & Kinney, 1998), Daft & Lengel contend that “richer” media are best for facilitating shared meaning necessary to complete tasks. Further, they posit that four elements determine media richness, including: 1) multiple cues (the various ways through which information can be conveyed), 2) feedback immediacy (how quickly feedback can be provided/received), 3) language variety (the ability to use natural language rather than numeric information), and 4) personal focus (the personalization of messages; Dennis & Balacich, 1999). Under this view, media richness falls along a continuum such that rich media enable cue conveyance, feedback immediacy, language variety, and personal focus to a greater extent than do lean media. The theory holds that these elements drive communicators ability to develop shared meanings and communicate complex messages. Therefore, a central argument of this theory is that rich or lean channels are not inherently better or worse for communication; rather, the influence of channel richness functions as a result of communication equivocality, such that matching a communication channel (e.g., rich vs. lean) with the goals of an interaction (e.g., equivocal vs. straightforward) improve task performance through enhanced communication therein (D’Urso & Rains, 2008).

Media Richness Theory has also received significant theoretical criticisms. Perhaps the largest criticism of media richness theory is the lack of support for its central tenet. Though the theory holds that rich media is best in enhancing performance for equivocal tasks, many studies have found that leaner media is often chosen and preferred (El-Shinnawy & Markus, 1992; Lengel & Daft, 1988). Although these results seem to suggest a fundamental breakdown of media richness theory, Dennis & Kinney (1998)

contend that most research fails to truly examine the central proposition of the theory. They explain that, in its original form, media richness was proposed as a theory of media use; how does media richness influence task performance? However, the common methodology of studies testing the theory, including those cited above, test it as a theory of media choice; do managers choose media that correlate richness with equivocality? Still, though, studies that have examined the theory's central tenet of media use also report mixed results for the theory (Kinney & Watson, 1992; Valacich et al., 1994). Therefore, media richness theory seems to be an inadequate explication of computer-mediated communication.

Several researchers have called for the complete abandonment of the theory in search for new and accurate explanations of CMC. Dennis and Kinney (1998) suggest that, due to the lack of support for the theory's central tenet, it is not useful or appropriate for examining CMC. Dennis and colleagues further that, instead of focusing on the equivocality of the interaction at hand, media should match the information processing and transmission needs of CMC (Dennis, Fuller, & Valacich, 2008). When focusing on information processing needs, Dennis and Kinney argue that synchronous media enable user to converge their perceptions of information, which, in turn, enhances communication therein. Through this view, communication is no longer driven by the "richness" of a medium (determined through the four characteristics identified above), but rather by the extent to which they enable synchronous communication between users. Though in its infancy stage, preliminary tests are promising and show initial support for the theory (Carlson & George, 2004; DeLuca & Valacich, 2005; Dennis, Fuller, & Valacich, 2008; Murthy & Kerr, 2003). Further study must be done to explore media

synchronicity theory, however, and its applicability to various processes of CM communication.

Similarly to social presence, media richness theory has direct implications for computer-mediated social support. A central tenet of this theory argues that communication between users will be most effective when media richness matches the equivocality of information/messages (Daft & Lengel, 1984). As the provision of social support is known to be an equivocal task, in that it requires shared meaning of complex and potentially conflicting information, media highest in richness should be the best environments for computer-mediated social support (High, 2011). However, when considering the previously identified critiques of media synchronicity theory, perhaps it is not the “richness” of media that matters for computer-mediated social support, but rather to what extent it provides synchronous interactions between users. Clearly, further study must be done to explore how media richness theory and media synchronicity theory apply to computer-mediated social support.

Cues filtered in theories. In his seminal 1996 article, Walther extended the conceptualization of CMC by tracking the development and growth of CMC research. As he explained, a predominant assumption of early CMC research was that technological media only allow for impersonal and surface-level interactions due to the lack nonverbal cues, which results in less rich and emotionally-laden interactions than those occurring in FtF. Diverging from this approach, Walther (1992, 1996) rejected the notion that decreased nonverbal cues online inherently restrict communicators’ capabilities to engage in effective and intimate interactions. Rather, Walther argued that CMC interactions can be equally as effective as those occurring FtF (Social Information Processing Theory;

Walther, 1992), and may even result in relational outcomes *beyond* those possible FtF (Hyperpersonal Perspective; Walther, 1996). Because these theories are more modern and theoretically advanced in terms of their applicability to various types of interactions across a variety of venues, they are discussed in more depth below.

Social Information Processing Theory. Walther's (1992) Social Information Processing (SIP) Theory suggests that CMC venues allow for normative but temporally delayed interpersonal relationships. This approach argues that, while CMC interactions may initially be impersonal, they develop over time to be just as rich and intimate as FtF interactions. SIP theory contends that people have similar social motives online and FtF; people are just as motivated to reduce uncertainty, form impressions, and develop affinity through CMC as they are FtF (Walther & Parks, 2002). SIP theory acknowledges that nonverbal cues are lacking online, and thus a central tenet of the theory is that online communicators consequently rely more heavily on verbal messages. In fact, people are motivated to compensate for the lack of cues online, and do so by substituting "the expression of impression-bearing and relational messages into the cues available through CMC" (Walther & Parks, 2002, p. 535). Walther (1992) argued that CMC users overcome the lacking nonverbal cues by placing significantly more importance on the linguistic (i.e., written) cues at their disposal. Support for this theory came from a study in which participants discussed a moral dilemma with a stranger via either FtF or CMC, wherein the stranger was secretly instructed to communicate in either a friendly or unfriendly manner (Walther, Loh, & Granka, 2005). Results revealed that the mode of communication made no difference in the emotional tone perceived by participants,

suggesting that CMC users supplement lacking nonverbal cues with the written cues at their disposal.

Another core tenet of SIP theory is that it takes more time to convey information online than FtF. Walther (2011) argued, “electronic streams of verbal communication without nonverbal accompaniment contain less information than multimodal face-to-face exchanges (p. 459). Scholars have used a metaphor involving a garden hose to describe the bandwidth, or amount of information that is transmitted online *versus* FtF (Westerman et al., 2008). In this analogy, FtF communication is akin to a wide garden hose that transmits a great deal of social information, whereas CMC entails less bandwidth and is similar to a narrow hose. Identical amounts of water, or social information, can flow through either hose; it simply takes more time with the narrow hose. Conveying social information and achieving relational closeness is a time consuming process, and given the inherent time constraints of CMC interactions, CMC interactants require more time to reach the same level of intimacy often experienced FtF. Ultimately, Social Information Processing Theory identifies time as the critical predictive variable of the relational processes and outcomes people experience online, such that CM venues are conducive to positive interpersonal outcomes as long as time constraints are not placed on interactions.

Just as other theories of CMC have experienced, scholars have identified significant criticisms of Social Information Processing theory. One of the main critiques of SIP theory regards its inconsistent and often contrary findings. For instance, Tanis & Postmes (2003) reported that not all CMC interactions will continue to develop in ways that result in more personal and positive relationships because people who experience

negative initial impressions of other CMC users will rarely continue to interact with them, thus negating an inherent assumption of the theory. Challenging findings to SIP theory have also arisen. For instance Walther (1995) reported that, contrary to SIP theory's main assumption that CMC interactions take longer to reach the same level of intimacy achieved FtF, CMC users rated their partners *higher* on various measures of relational communication (e.g., affinity, intimacy) compared to those interacting FtF. This suggests that CMC users may not only experience relational outcomes equal to those communicating FtF, but may actually report better and more satisfactory interactions.

Social Information Processing theory and its assumptions provide various implications for CM supportive interactions. Perhaps most importantly, this is the first theory to suggest that CM venues are not inherently disadvantageous for supportive interactions. Rather, SIP theory assumes that support providers adapt their written communication in ways that account for the lacking nonverbals, and support receivers, in turn, place more emphasis on the importance and meaning of written communication in ways that facilitate emotional improvement and reappraisal. Thus, as per SIP theory, CM venues are equally conducive to effective, high-quality supportive interactions as are FtF contexts. The second central tenet of SIP theory, or the significance of time on CMC interactions, also offers implications for CM supportive communication. Because CMC users are afforded more time to complete an interaction that would occur more quickly FtF, they are also equipped with more time to construct, produce, and/or process supportive messages. Considering the difficulty of HPC supportive conversations (for reviews, see Burlison & Goldsmith, 1998; MacGeorge et al., 2011), more time may enable higher quality and/or more skillful supportive experiences. Thus, Social

Information Processing theory suggests that CM venues may be effective venues through which to engage in supportive communication.

Hyperpersonal communication. While these initial theories paved the way for CMC research, several studies contradicted their assumptions and reported instances in which CMC fostered *more* meaningful relationships than FtF interactions (Reid, 1991; Walther, 1995). To explain these instances, Walther (1996) proposed the hyperpersonal perspective of CMC. The hyperpersonal perspective argues that the limited nonverbal cues inherent to CMC venues result in relational outcomes beyond those achieved in FtF contexts. Falling in the “cues filtered in” orientation of CMC, the hyperpersonal perspective identifies four factors that drive enhanced relational interactions online: (1) optimal idealization of others, (2) selective self-presentation, (3) technological features that foster relationships, and (4) intensification feedback loop through behavioral confirmation. Initially, in receiving information, CMC users idealize their relational partner. Engaging in “overattribution” processes, such that they build impressions of others based on minimal and otherwise meaningless cues, users “fill in” missing information with idealized perceptions. Second, information senders strategically present themselves in positive ways. An underlying goal of interpersonal communication is to make positive impressions on and be liked by others. Due to the limited number of cues within CMC venues, users engage in selective self-presentation that promotes feelings of closeness and intimacy. Third, features of the CMC channel promote intimacy. In particular, CMC asynchronicity reduces the pressure and difficulty of immediately responding to other users, enabling users to avoid the conflicts that often arise in context with temporal limitations. Finally, CMC contexts create a feedback loop between

information senders and receivers that reinforces hyperpersonal communication. As CMC users form idealized perceptions of others, those perceptions shape how the other behaves due to behavioral confirmation (Snyder, Tanke, & Cerscheid, 1977; Walther, 2011). This, in turn, magnifies the original perception, resulting in an intensification loop that enhances the likelihood of hyperpersonal communication within CMC. For example, a feedback loop occurs such that person A forms idealized perceptions of Person B, which then influences the actual behavior of Person B and, in turn, confirms person A's original perception. Ultimately, Walther (1996) argued that these four features of the communicative process explain instances in which more intimate and personal communication occurs through CMC venues compared to FtF.

Walther's (1996) hyperpersonal perspective sparked a conceptual shift for CMC. This approach was the first to suggest that FtF interactions are not the ideal, and that CMC can actually promote relational outcomes beyond what occurs FtF. Further, this article explained the various unexpected findings regarding elevated relational closeness and intimacy online, reframing the impact of CMC venues from inherently limiting to advantageous and beneficial. Prior to this approach, communication researchers largely viewed CMC as bound by the lack of nonverbal cues online. However, Walther highlighted how and why people may strategically present themselves in ways that are idealized by others, ultimately enhancing interpersonal communication to the extent that relationships are more effectively pursued online than FtF. This fundamentally opposite approach to CMC substantiated the importance of CMC research as a venue through which elevated interpersonal relationship can be occur.

Despite the significant influence of the hyperpersonal perspective on CMC, criticisms have arisen regarding Walther's failure to fully explicate the concept. Walther himself noted that it is not clear what processes are necessary or sufficient for the hyperpersonal effect to be obtained (Walther, 1996). While the theory identifies specific parts of the communicative process that drive hyperpersonal effects (e.g., the sender, the receiver, the channel, feedback), when hyperpersonal communication will occur is not yet known. For instance, do individual difference variables (e.g., personality, cognitive complexity, attachment) impact if or when people engage in hyperpersonal communication? Walther did not identify or explain how these factors may explain variations in hyperpersonal communication. Therefore, though the hyperpersonal perspective identifies ways in which CMC venues elevate intimate communication, further research must be done to identify the necessary processes for hyperpersonal effects to occur.

Although the hyperpersonal perspective of CMC has yet to be fully explicated, there are two fundamental assumptions of this perspective that are both relevant for CM supportive communication. Initially, this perspective argues that CMC interactions contain limited cues compared to FtF contexts. Though initially conceptualized as a weakness of technological media, several scholars contend that this allows users to reallocate their cognitive resources toward the needs of an interaction (High & Caplan, 2009; Walther et al., 2015). No longer needing to attend to the various nonverbal cues inherent to FtF communication, CMC users are uninhibited by irrelevant and unnecessary information. This allows CMC users to devote more cognitive resources to producing and processing messages within online interactions. Given the complex nature of supportive

communication, the cognitive reallocation afforded by CMC may enable users to engage in supportive interactions more effectively than FtF contexts. Second, the hyperpersonal perspective holds that CMC interactions can exceed those that occur with FtF contexts; selective self-presentation and optimal idealization of others promote relational outcomes and foster a sense of homophily and liking between users. These rich relationships established through CMC venues likely results in users who are more invested in their network and motivated to engage with one another. This is important, as Bodie & Burleson (2008) argued that motivation promotes users to strategically produce and scrutinize messages, which results in more effective supportive communication. Therefore, mediated venues may result in more effective support due to users' increased motivation to systematically produce and process messages therein.

CMC and Supportive Conversations

Early research and theory on CMC suggested that intimate conversations are unlikely to occur online. Walther and Parks (2002) identified several theories of computer-mediated communication which postulate that sensitive or intimate forms of communication are often lacking in mediated contexts because of their lack of nonverbal cues. According to these theories, seeking, providing, and processing high-quality supportive messages would be difficult to facilitate online. Contemporary online technologies, however, have become much more sophisticated and capable of transmitting a wide variety of cues. Internet users are drawn to SNSs *because* of the variety of cues they convey (Christofides, Muise, & Desmarais, 2009), and users can exploit the cues that are available online for their benefit (Walther, 1992, 1996).

A crucial question that arises, then, is how computer-mediated venues shape specific stages of the supportive communication process. In particular, how contextual elements of technologically mediated channels offer distinct challenges and benefits for support seeking, provision, and processing is necessary to fully explicate the process of computer-mediated supportive communication. Thus, the following section investigates how CM venues uniquely impact specific processes inherent to supportive conversations.

Computer-mediated support seeking. A wealth of research supports the notion that people turn online to seek support (Tanis 2008a, 2008b; Walther & Boyd, 2002; Wright & Bell, 2003). In fact, research conducted as part of the Pew Internet and American Life Project showed that participation in online support groups has increased significantly over the past few decades (Fox & Duggan, 2013; Pew Internet and American Life Project, 2005). Results revealed that 18% of adult Internet users report going online to seek help for health-related concerns, and 13% reported having used the Internet to seek information, care, or support from friends and/or family. As Rains and Wright (2016) explain, “CMC is proposed to facilitate the support-seeking process by creating conditions under which individuals feel comfortable requesting help and having greater access to able and willing support providers” (p. 177).

Just as self-disclosure initiates supportive interactions in FtF settings, disclosure remains crucial for CM support seeking. Research documents that people often disclose personal information online (Christofides et al., 2009; Ruppel et al., 2016), and CMC users can manipulate their disclosures to achieve positive outcomes (Walther, Loh, & Granka, 2005). For instance, Valkenburg and Peter’s (2009a) Internet-enhanced self-disclosure hypothesis argues that online communication stimulates self-disclosure, which

in turn, enhances relational quality and well-being among interactants (Valkenburg & Peter, 2009b). Online self-disclosure also enhances the likelihood of others reciprocating intimate communication (Jiang, Bazarova, & Hancock, 2013) such that CM disclosure corresponds with supportive communication (Christofides et al., 2009). In fact, Goldner (2008) reported that people who disclose more on Social Networking Sites (SNSs) tend to receive more social support from their network.

Various explanations have been provided as to *why* people seek support online. Initially, CM venues enable users not only greater *access* to supportive networks, but greater access to *skillful* support networks. Research documents that people are relatively ineffective support providers (Brooks & Dunkel-Schetter, 2011; Dunkel-Schetter, Blasband, Feinstein, & Herbert, 1992). While this often proves detrimental for FtF support seekers, such that being surrounded by an ineffective support network often results in receiving ineffective support, CMC support seekers have access to potential support providers not limited to their geographical location. This means people who have ineffective FtF support networks can turn online, to hundreds and even thousands of people who can satisfy their supportive needs. Chung (2013) offers support for this idea, and reported that satisfaction with offline support was inversely associated with preference for online social interactions. CM venues enable users to broadcast their support seeking messages to a wealth of people not easily accessible FtF (Burke, Kraute, & Marlow, 2011; Rains & Wright, 2016), which has significant implications for the likelihood of receiving effective support in return. Thus, people seem to both recognize and capitalize on their increased access to support that CMC venues afford.

Additionally, seeking support online has been argued to reduce the risks inherent to initiating supportive interactions. As previously discussed, seeking support is a risky and face-threatening activity that requires individuals to disclose personal information while simultaneously constructing highly sophisticated messages intended to activate the support process (Goldsmith, 1992, 1994, 2004). In fact, Goldsmith (1994) argued that facework is an important component of all supportive interactions due to people's desire to avoid negative evaluations from support providers. This can significantly influence support seeking, as those who are face threatened may alter the ways in which they disclose information and seek help to the point that they avoid doing so entirely. Research documents that support seekers are not only aware of the risks inherent to his activity, but adjust their behaviors accordingly; perceptions of support seeking risks was inversely associated with seeking support (Lim, Thompson, & Zhao, 2013). This process becomes even more difficult when considering the topic for which a distressed individual is seeking help (Rains & Wright, 2016). More specifically, the extent to which support seekers feel stigmatized and/or that their need for support is taboo predicts whether people turn online for initiating supportive interactions; those concerned with others finding out about their supportive need were more likely to prefer online support networks than those FtF (DeAndrea, 2015). Thus, seeking support through CM venues not only enables users to seek support from a near limitless number of potential providers, but also decrease the risks inherent to this process.

Computer-mediated support provision. Providing effective support is consistently described as complex and cognitively demanding (see MacGeorge et al., 2011), yet little research has examined how this process occurs through technologically-

mediated modalities. Some scholars theorize that CMC channels provide “simple methods (e.g., commenting on a status update) through which individuals of varying closeness can respond to [support seeking requests]” (Vitak & Ellison, 2013, p. 250), which suggests that mediated modalities assist support provision. However, contradictory research suggests that support providers may feel less inclined to help distressed others online (Blair, Foster, Thompson, & Wuensch, 2005; Brody & Vangelisti, 2016; Markey, 2000). Generally, though, research does document that people provide various types of support online. For instance, a recent meta-analysis of 41 online social support groups revealed that emotional and information support were most common (Rains, Peterson, & Wright, 2015). Additionally, upon examining social support messages provided through Twitter and directed toward fallen Philippine policemen, Bautista & Lin (2015) found that Social Networking Site users provided highly informational and emotional support messages.

Recent research examining this process more closely has highlighted the transactional nature of online supportive communication, such that support providers attend to various cues when engaging in mediated supportive interactions that directly influence whether and why they produce high-quality supportive messages. Feng, Li, and Li (2013) reported that CM support providers produced higher quality supportive messages in response to a distressed other’s online profile when it contained a portrait picture and a name ID compared to profiles that did not contain such cues. This study documented that support providers attend to personal identity cues when providing support online, suggesting that they enhance feelings of closeness and social presence between users in ways that benefit supportive interactions. Li and Feng (2014) also

revealed the role of third party responses to support seeking requests on the quality level of messages providers produce. Results showed that the supportiveness of third party comments was positively associated with participants' perceptions of public opinion toward the support-seeker and readers' liking of the support-seeker, which in turn influenced the quality of participants' support messages. Thus, several cues inherent to CM channels influence the extent to which providers produce more or less sophisticated messages.

Youngvorst and High (2018) also explored the role of various cues on support provisions online, focusing specifically on how cue variations uniquely influence support provisions. In particular, they examined how the *emotional bandwidth*, or number of features used to disclose personal affect (High, Oeldorf-Hirsch, & Bellur, 2014), of a distressed others' profile influenced the support quality participants produced. They found that participants produced significantly higher quality messages when exposed to profiles containing higher levels of emotional bandwidth compared to profiles with lower levels of emotional bandwidth (Youngvorst & High, 2018). More specifically, they reported that negative emotional cues in profile pictures increased VPC in private messages, whereas directness in status updates negatively predicted VPC in private messages. Ultimately, though, participants produced messages with higher levels of VPC when providing support in a private context (e.g., direct messaging) rather than publically (e.g., Facebook wall post).

The relationships between supportive interactants is also an important factor when examining support provision online. Tie strength refers to the intimacy we feel toward others; strong ties are those with whom we maintain intimate and close connections,

whereas weak ties are those with whom we are not particularly close but may still interact with in certain contexts (Granovetter, 1973; Wright, Rains, & Banas, 2010). Although close-ties often provide valuable support, close-ties often lack experience, knowledge, and information about specific problems that challenges their ability to provide appropriate and useful support (see Albrecht, Burleson, & Goldsmith, 1994; Barbee, Derlega, Sherburne, & Grimshaw, 1998; Brashers, Neidig, & Goldsmith, 2004). Weak-tie members, on the other hand, afford various advantages over strong-tie members when social support is needed in regards to problematic, threatening, and sensitive circumstances (Granovetter, 1973; Adelman, Parks, & Albrecht, 1987; Wills & Fegan, 2001). Weak-tie members might not possess these fears, and may also feel more comfortable to provide types of social support even if it is unpleasant, because weak-tie members are often less emotionally attached (Wright, 2000).

This is particularly relevant for online supportive interactions, such as those occurring via online support groups, because they typically exhibit and contain weak-tie relationships (Wright, 2000). Wright and Miller (2010) identified two reasons why providing support to weak-ties is particularly beneficial. First, there is greater *utility* in support provisions due to increased situational similarity (i.e., experiential similarity instead of demographic or interpersonal similarity). For instance, although weak-ties likely constitute the relational makeup of members within online support groups, users are often bound by similar experiences that assist their ability to identify and attend to others' supportive needs. Second, Wright and Miller (2010) note that there is greater *objectivity* in support provisions due to less emotional attachment. Although close-tie members are usually there to offer beneficial emotional comfort and support, weak-tie

members can be there to offer more objective support with less interpersonal risks due to the comparatively more distant relationship with distressed others. As Walther and Boyd (2002) explain, “on-line social support is exchanged among those with similar experiences or concerns, without the multiple concerns and filters that close relationships impose” (p. 159).

Computer-mediated support processing. Generally, research supports the notion that CM modalities benefit people’s processing of supportive messages. For instance, Spottswood, Walther, Holmstrom and Ellison (2013) showed that women rated HPC messages as more effective than LPC messages, and that people providing HPC messages were more liked than those who provided LPC messages. High (2011) also reported that HPC messages were rated as better than MPC and LPC message online.

To explain *why* supportive message processing may occur more effectively online rather than FtF, we turn once again to the Dual-Process Theory of Supportive Message Outcomes. As explained in Chapter 2, the DPT posits that people must have the *ability* and *motivation* to process supportive messages such that they experience positive and beneficial outcomes (e.g., emotional improvement, reappraisal; Bodie & Burleson, 2008). When considered online, CM modalities likely benefit message scrutinization, and thus positive outcomes, because they are theorized to enhance people’s processing capacity through the “reallocation of cognitive resources from environmental scanning and nonverbal management” toward more central processes. (Walther, 2007, p. 2541). As Rains and colleagues explain, “the potential to allocate greater attentional resources in CMC relative to face-to-face interaction may serve to heighten one’s attention to a

stressor and, in turn, motivation to process a support message” (p. 557). Thus, CMC venues enhance a user’s ability *and* motivation to process supportive messages.

Offering support for this idea, Rains and colleagues revealed that participants who received social support via CMC reported the strongest motivation to receive support, engaged in the greatest level of message elaboration, and experienced the most beneficial change in worry, compared to those interacting FtF (Rains, Brunner, Akers, Pavlich, & Tsetsi, 2016). An important component of this study resides in the supportive messages that participants received; supportive message remained constant, such that participants across all conditions received the same supportive message(s). Because the same message was used, and because those in the CMC condition evaluated messages as higher quality than those in the FtF condition, this study suggests that CMC channels, and the reduced social cues therein, enabled participants to elaborate on the supportive messages they receive more than is possible FtF.

Several factors have been identified as impacting supportive message processing online (for a review, see Rains & Wright, 2016). Perceived similarity has been consistently documented as vital for people’s willingness to scrutinize supportive messages. In fact, research shows that perceived similarity impacts perceptions of credibility, which, in turn, shape message processing and evaluation (Wang, Walther, Pingree, & Hawkins, 2008). Another factor this study reports as influencing message processing is that of perceived credibility; higher perceptions of credibility increased people’s evaluation of, and their intention to act on, information they received (Wang et al., 2008).

Computer-mediated support outcomes. Examining the process of online supportive communication necessitates a focus on conversational *outcomes*, as instigating emotional improvement and facilitating cognitive reappraisal is a fundamental goal of VPC supportive communication (Burlison & Goldsmith, 1998). Research exploring supportive communication outcomes perhaps most frequently focuses on outcomes among those participating in online support groups (for a review, see Rains & Wright, 2016). A wealth of studies suggest that participating in online support groups can be beneficial. In two studies, Mo and Coulson (2012, 2013) reported that those participating in online support groups engaged in more *empowering processes*, such as more in-depth meaning-making and information processing, which directly increased their self-efficacy and optimism. Additionally, Rains and Young (2009) reported that participating in computer-mediated support groups “led to increased social support, decreased depression, increased quality of life, and increased self-efficacy to manage one’s health condition” (p. 309).

Beyond support groups, research also documents positive outcomes associated with technologically mediated support more generally. Several studies highlight the importance of *perceived support availability* on predicting positive outcomes from CM support. For instance, perceived support availability online has been positively associated with health-related empowerment (Oh & Lee, 2012), several dimensions of well-being (Ko & Kuo, 2009; Rains & Keating, 2011), as well as increased self-efficacy and lower stress (Feng & Hyun, 2012). Additionally, the number of connections one has on a Social Networking Site is positively linked to well-being (Nabi, Prestine, & So, 2013). Thus,

perceived support availability is an important precursor to experiencing positive and beneficial CM support outcomes.

On the other hand, a wealth of studies document that *receiving* CM support benefits outcomes by enhances one's coping resources and facilitates stress management. Turner et al. (2013) reported that patients with diabetes who received emotional support messages experienced improved glycemic control, and two studies documented the positive association between receiving emotional support messages and lessened breast cancer concerns (Kim et al., 2012; Yoo et al., 2014). Additionally, High and Solomon (2014) reported that people tend to scrutinize the supportive messages they receive more effectively online than FtF; results revealed that both men and women evaluated HPC messages provided by men as more sensitive online than FtF, and women evaluated LPC messages provided by women as lower in quality online than FtF. However, this study simultaneously revealed that FtF supportive interactions may be *longitudinally* best for experiencing beneficial outcomes as their "results offered some evidence that support received in the instant messaging conditions was less effective [over time] than in the face-to-face condition" (Rains & Wright, 2016, p. 192). These results were in-line with other studies exploring the overtime effects of CM support outcomes. For instance, Lewandowski et al. (2011) found that current and former military personal who received support via CM modalities reported less emotional improvement over time than those who received support primarily FtF. Ultimately, research generally supports the notion that receiving and perceiving emotional support online results in positive and beneficial outcomes related to well-being.

Channels, Affordances, and Supportive Communication

Thus far, CMC has been used as an umbrella term to describe any/all computer-mediated modalities. Researchers and scholars alike often treat communication technologies homogeneously by combining fundamentally distinct channels monolithically (see critique by Sundar & Bellur, 2011). This approach, however, disregards the fact that CM channels vary greatly, and that these variations have distinct and significant implications for communication (Fox & McEwan, 2017; Walther, Gay, & Hancock, 2005). Thus, this section begins by focusing on two CM channels in particular, text messaging and Skype. Then the concept of *affordances* is explained in relation to CMC, and six affordances in particular are proposed to offer significant implications for computer-mediated, verbal person-centered supportive conversations.

Channels. A true explication of CMC necessitates an acknowledgement of between-channel differences, as well an understanding that those differences present significant implications for (supportive) communication. For instance, CMC likely occurs very differently in a text-based channel that inhibits the use and transmission of social cues, such as text-messaging, compared to a channel which is computer-mediated, yet mirrors the synchronicity and high bandwidth of FtF contexts, such as the video-conferencing software Skype. Additionally, little research has been done to systematically compare supportive communication between FtF, text-based CMC, and video-/audio-based CMC settings, despite the fact that that many modern channels differ in these regards. Thus, this dissertation focuses on comparing FtF supportive interactions with both a text-based CM channel, specifically text messaging, as well as a video-/audio-based CM channel, specifically Skype.

Text messaging. Text messaging is a function of mobile phones that enables users to communicate with others, and is an important CM venue to study due to its frequent use for communication between friends. In fact, text messaging was recently reported to occur among 73% of cellphone owning adults (Pew Research Center, 2011). Several studies have explored CMC specific to text messaging. In one study, participants reported communicating with their friends via text messaging when they wanted to hide their feelings and/or discuss uncomfortable topics (Pettigrew, 2009). Relatedly, other studies suggest that text messages is a particularly effective CM venue for avoiding awkward or uncomfortable interactions (Kelly et al., 2012), and that they enable people to more freely express themselves (Crosswhite, Rice, & Asay, 2014). In fact, Reid and Reid (2010) reported that “mobile phone users are predisposed to recognise and take advantage of the social functionality of [text messaging] to enrich their personal relationships” (p. 3). Despite the perceived benefits of text messaging, however, some research suggests that they are rarely actualized. For instance, Brody and Peña (2015) documented that discussing negative topics and including negative emotion words while text messages with friends was associated with lower relationship satisfaction. Other studies corroborate these findings, reporting that discussing uncomfortable topics or communicating negativity via text messaging is negatively associated with relational satisfaction (Coyne et al., 2011; Schade et al., 2013).

Research exploring supportive communication via text messaging in particular is limited. Several studies report text messaging as an effective CM venue for instigating healthy behavioral changes regarding disease prevention and management (for a review, see Cole-Lewis & Kershaw, 2010), weight loss maintenance (Gerber, Stolley, Thompson,

Sharp, & Fitzbiggon, 2009), and smoking cessation (Buller, Borland, Bettinghaus, Shane, & Zimmerman, 2014; Obermayer, Riley, Asif, & Jean-Mary, 2004). Yet, little research explores how text messaging can serve as an important venue for communication between established relational partners engaging in day-to-day conversations, such as social support. In two studies, Holtzman and colleagues reported that social support received from close friends via text messaging was associated with significantly lower affect (study 1) and satisfaction with support (study 2) than when receiving support FtF (Holtzman, DeClerck, Turcotte, Lisi, & Woodworth, 2016). More explicit testing, however, is necessary to better understand the process of supportive communication via text-messaging. For instance, how does text messaging uniquely influence supportive conversations of differently quality? Does text messaging present different advantages and disadvantages for support receivers compared to support providers? What fundamental differences exist between text messaging and other communication channels that predict supportive communication experiences, behaviors, and outcomes? Answering these questions remains important to explicating the process of computer-mediated supportive communication.

Skype. Skype is a video-chatting platform that enables users to communicate in physical isolation from one another, yet mimics FtF communication in several ways (e.g., synchronous, high level of social/nonverbal cues). Skype is a frequently utilized communication channel between friends (Buhler, Neustaedter, & Hillman, 2013). In fact, Smith (2015) revealed that over 85% of interviewed college students reported using video chatting software to communicate with their friends, with just under 30% using video calls at least once a week. Geographically separated friends are more likely to use Skype

than geographically close friends (Vitak, 2014), and men (26% of those surveyed) reported participating in video chatting slightly more than women (20%; Pew Research Center, 2010). Ultimately, the “rich” nature of Skype helps explain *why* users turn to video-conference platforms to communicate as well as *what* experiences or outcomes they endure.

Many CMC users explain their use of video calls due to the rich, personal nature of conversations through these media (Smith, 2015). This is in-line with Media Richness Theory (Daft & Lengel, 1986), which argues that equivocal situations, or those that are ambiguous and open to multiple interpretations (e.g., social support), or more effectively accomplished when communicating through rich media due to the increased number of social /nonverbal cues therein. Thus, platforms higher in media richness, such as Skype, may benefit supportive interactions. In one study, elderly residents at a nursing home reported decreased depressive symptoms and loneliness after video-conferencing with a loved one for 5 minutes per week (Tsai, Tsai, Wang, Chang, Chu, 2010). Compared to no videoconferencing interaction, participants who interacted with others via a videoconferencing program “had significantly higher mean emotional and appraisal social support scores at one week and three months after baseline than those in the control group” (p. 947). Taken together, these findings suggest that video-conferencing technologies, such as Skype, may facilitate effective supportive interactions.

Ultimately, both skype and text messaging are modern and frequently used CM venues friends use to communicate with one another. As explained above, however, research reveals several differences between these channels that influence interactions. Beyond acknowledging general differences between these channels, it is important to

identify specifically *what* those differences are and *why* they influence supportive interactions. For instance, Skype affords ephemeral, synchronous conversations that transmit a number of social cues, whereas text messaging allows people to edit messages, has high temporal delays, and transmits virtually no social cues. Importantly, these differences present significant implications for computer-mediated supportive communication. For example, because social cues often enhance supportive outcomes (Bodie & Jones, 2012), CM channels that afford the transmission of social cues may enable support receivers to process messages in ways that improve affect (e.g., emotions) and behavior (e.g., coping). Thus, it is important to first recognize *what* differences exist between communication channels before understanding *why* CM modalities impacts (supportive) communication.

Affordances

It is important to examine the impact of various channels on supportive communication because no two are the same; CMC modalities vary greatly as a function of their affordances. Gibson (1979) originally defined affordances as all “action possibilities” of an object or environment. For instance, a doorknob enables the opening/closing of a door, such that without it the action would not be possible. It is only because of the feature and what it affords that certain behaviors are possible. Affordances, as per Gibson (1979), adhered to a technological determinism approach to media – affordances were equated to design aspects of a technology, suggesting that the technology itself, and its affordances, dictated *how* it should be used. (Norman, 1988). Many scholars, however, argued that people’s needs and/or goals influence the action’s

they take with technology, and, in turn, affordances (Gaver, 1991; Leonardi, 2011). As Hutchby (2014) argued:

Affordances are both functional and relational: functional in that they enable (and also constrain) the engagement in some activity; they shape the conditions of possibility associated with an action. Relational, in that they may differ for one object in different contexts, or between different species. Water surfaces, for example, have the affordance of 'walk-on-ability' for certain types of insect, but they do not for a human, a lion or a crocodile. (p. 87)

Thus, affordances should be approached more *relationally*, such that communication technologies influence, but do not determine, action possibilities, behaviors, or outcomes of CMC.

Upon recognizing major discrepancies in the ways communication researchers discuss and utilize affordance, Evans and colleagues (2016) identified three threshold criteria that clarify the concept of affordances in relation to CMC. First, affordances must not be either the object or a feature of the object. For instance, a smartphone is an object and its camera is a feature, whereas recordability is an affordance (i.e., ability to capture video and images). It is important to recognize a user's agency in technology use. Affordances, then, are neither a product of the CM environment or its users, but exist in the relationship between communication technologies and users (Parchoma, 2014). Ultimately, affordances are dynamic components of communication technologies that emerge *through* interactions between users, objects, and their features (Treem & Leonardi, 2012).

Second, affordances must not be equated with outcomes. For instance, the outcome of an SNS search bar might be locating a photo of a friend, but the affordance is increased searchability and viewability (Evans et al., 2016). It is *because* of the visibility and searchability (i.e., the affordance) within SNSs that makes finding and viewing

content (i.e., the outcome) possible. Importantly, research documents that affordances may be associated with different, and even conflicting, outcomes (Gibbs, Rozaidi, & Eisenberg, 2013; Majchrzak, Faraj, Kane, & Azad, 2013). Outcomes are not predicted by the mere presence of an affordance, but are products of a user's goals; using an SNS search bar may lead to locating a photo for one users, whereas it may enable another user to (re)connect with a friend.

Third, affordances have variability. While features of CM modalities are binary, such that they are or are not present, affordances have *range* because channels can differ in the degree of an affordance. For instance, CM channels can vary in their degree of anonymity, such that some allow users to be completely anonymous (e.g., online support groups) whereas others afford only partial anonymity (e.g., Twitter) or none at all (e.g., Skype). As Scott (1998) argued, "anonymity must be viewed on a continuum from fully anonymous to full identified (p. 387). Several studies reveal that not only do affordances vary, but such variation influences communicative interactions, experiences, and outcomes (Gibbs, Rozaidi, & Eisenberg, 2013; Mcgrenerre & Ho, 2000). Ultimately, affordances can best be understood as a "process concept", specifying the ways things vary (Evans et al., 2016, p. 37; McLeod & Pan, 2005).

Approaching CMC from an affordance perspective is beneficial because it clarifies *why* communication technologies influence communicative experiences and/or practices (Treem & Leonardi, 2012). Additionally, it enables more nuanced and durable theorizing (Ellison & Vitak, 2015); researching Twitter as a whole may become quickly outdated due to functional or design changes in the site, but studying the affordances of Twitter enables findings to transcend one specific channel and broaden to other

communication technologies. An affordance-based approach to CMC enables a more variable-centered understanding of computer-mediated communication, which has been called for by researchers for decades (e.g., Nass & Mason, 1990; Walther, Gay, Hancock, 2005). Various studies document the influence of affordances on CMC outcomes. In one study, Hogan and Quan-Haase (2010) revealed that sociotechnical affordances of SNSs (e.g., private messaging vs. public sharing) shaped receivers' interpretations of and reaction to online disclosures. Another study reported affordances enabling increased social cues was important for uncertainty reduction online (Tanis & Postmes, 2006). Thus, affordances are an important component of CMC that need further study and explication.

Perceived affordances. As explained, it is important to view technological affordances as emerging through the relationship between communication technologies and their users. With this in mind, Norman (1990) identified the importance of a user's *perception* of a communication technology, and its' action possibilities, on predicting behaviors and outcomes. When interacting with communication technologies, users form their own interpretations and perceptions in ways that may align or differ from other users and/or design intentions. Recognizing that scholars rarely addressed individual perceptions in their study of affordances, Hogan (2009) (re)defined affordances as "the perceptual cues that connote aspects of social structure to individuals thereby creating a functional difference for the individual" (p. 27).

Hogan's definition of affordances is a conceptual shift away from technological determinism toward a relational view of users, technologies, and outcomes. A user's perception, then, is an important factor to consider when studying CMC; it is ineffective

to presume perceptions are equivalent across all participants, let alone between researchers and participants. Research documents that people can perceive affordances that are not present (i.e., false affordances) and fail to perceive affordances that are inherent to the object (i.e., hidden affordances; Gaver, 1991). Yet, technological affordances are often assumed either explicitly by researchers or implicitly within study designs, and direct comparisons between communication technologies or evaluations of users' perceptions are rarely assessed (Walther, 2013). As Fox and McEwan (2017) contend, “[s]uch an approach may lead to attributions toward a channel rather than clarifying the mechanisms driving effects” (p. 301). Thus, this project adheres to Hogan’s (2009) conceptualization of affordances by examining how user’s perceptions of communication technologies influence their behaviors and outcomes.

Affordances and Supportive Communication

Few studies have explored the relationship between affordances and supportive communication, which is concerning considering the influence of affordances on CMC *and* the increased use of CM channels to seek, provide, and receive support. To truly explicate computer-mediated supportive communication, it is important to consider differences between channels of communication. For instance, current understanding of supportive communication does not directly translate to technologically mediated contexts due to the various assumptions inherent to FtF interactions – highly synchronous, diminished anonymity, limited audience. With technology, however, these assumptions no longer apply due to differing technological affordances that characterize and shape the nature of CMC (inter)actions (Sundar, 2008). Online chat rooms afford anonymity, such that users can communicate with others without revealing their identity,

whereas many SNSs require users to partially or even fully disclose their identity. Considering the reported positive associations between anonymity and increased self-disclosure (Suler, 2004), support provision (Caplan, 2003), and perceptions of closeness and intimacy (Wright 2000), venues that afford increased anonymity foster (supportive) interactions that are fundamentally different from those FtF or via CMC modalities lower in anonymity. Thus, affordances are not insignificant characteristics of a CMC venue, such as paint on a wall. Rather, technological affordances constitute the action possibilities within CMC modalities and structure normative practices relevant for supportive communication therein (High & Solomon, 2011).

Despite little research examining the influence of affordances on CM supportive interactions, some studies do offer preliminary insights. Various scholars have explored the influence of *anonymity*, or the degree to which an individual's identity is concealed through a given medium (Lea & Spears, 1991), on supportive interactions. FtF contexts are rarely anonymous, because people are able to observe each other's identity throughout an interaction, which, in turn, bind people to social norms that drive their communication therein. Several CMC channels, however, afford anonymity; online chat rooms often allow users to interact with others without revealing their identity (e.g., not required to display a picture or provide their name). Anonymity has several implications for online supportive communication. Initially, anonymity promotes self-disclosure (Hollenbaugh & Everett, 2013; Suler, 2004). Because self-disclosure is a necessary precursor to social support (Chaudoir & Fisher, 2010), FtF support seekers reveal highly personal and potentially embarrassing information to others. Anonymous CMC allows users to avoid risks of disclosing information or requesting support due to decreased face

threat (Caplan, 2003). Thus, users can more easily signal a need for support through self-disclosure online than FtF. Anonymity also helps establish supportive relationships.

Wright (2000) noted that, because people felt less judged and stigmatized within anonymous CMC venues, they were more comfortable revealing information that built intimacy and encouraged supportive communication.

Though not explicitly conceptualized as an affordance in their study, Youngvorst and High (2018) documented how messages provided in a private context (e.g., direct messaging) were significantly higher quality than those produced publically (e.g., Facebook wall post). This points to the importance of *privacy*, a well-documented affordance (boyd & Ellison, 2007; Fox & McEwan, 2017; Treem & Leonardi, 2013), on VPC message production. Other studies have also revealed the importance of privacy on the quality of supportive interactions. Vitak and Ellison (2012) found that SNS users both acknowledge the benefits the site provided for engaging in support (e.g., broadcasting a support seeking message) and recognize the constraints associated with publically engaging in support and the inherent risks therein. In particular, users reported going to great lengths to maintain privacy when engaging in CM supportive interactions, such as changing privacy settings or limiting audience access to posts. Thus, privacy seems important for CM supportive interactions; however, more testing is necessary to explicate the relationship between privacy and VPC supportive communication.

In sum, affordances influence CM supportive interactions. Which *specific* affordance exert influence, however, is rarely explored. Recognizing the influence of affordance in general on CMC is an important first step, but additional theorizing and explicit testing is necessary to identify specific affordances that prove particularly

important for computer-mediated supportive communication. Thus, the remainder of this section identifies and examines the influence of six affordances in particular on computer-mediated verbal person-centered supportive conversations, including bandwidth, presence, synchronicity, conversational control, persistence, and editability.

Bandwidth. Bandwidth refers to the number of social cues potentially transmitted through a channel, such as proxemics (i.e., physical distance), kinesics (i.e., gestures), and paralinguistic cues (i.e., tone of voice; Reeves & Nass, 2000; Rice & Steinfield, 1994). Several channels enable the transmission of a wide array of social cues; consider Facebook, which allows users to incorporate various verbal (e.g., written status updates, wall posts) and nonverbal cues (e.g., sharing pictures, emoji's, gif's) into their interactions with others. Importantly, however, whether or not social cues *are* transmitted depends on the user. As High et al (2014) noted, users do not utilize every feature in a technology nor do they employ them to their maximum potential. Users' behavior is instrumental in determining bandwidth because communicators exert a profound influence on CM interpersonal encounters (see Westerman, Van Der Heide, Klein, & Walther, 2008).

Social cues have long been identified as an important component of supportive communication. For example, Jones and Guerrero (2001) argued that nonverbal immediacy indicates a provider's attentiveness and willingness to help, and their research revealed positive associations between nonverbal immediacy and recipients' perceptions of comforting behaviors (see also Jones, 2004). Additionally, Youngvorst and High (2018) provided preliminary evidence that the nonverbal cues of support *seekers* influence the quality of support they receive. Consequently, bandwidth, and variations

therein, likely influences CM supportive encounters due to differences in the breadth of social cues that can be used and transmitted to others. As Wellman et al. (2003) argued, increased “bandwidth of communication allows more affect (such as emotional support) to be transmitted with less imagination” (“(E-)Citizenship in a Networked Society”, para. 5).

Some studies have supported the notion that variations in bandwidth influence supportive experiences and outcomes (see Feng et al., 2012; Youngvorst & High, 2018). Yet, little research systematically examines how perceived bandwidth of different communication channels exerts unique influence on support provider’s and receiver’s, or on more or less verbal person-centered supportive conversations. For instance, research suggests that *decreased* bandwidth may benefit receivers processing of LPC messages because environments that afford less bandwidth are less intense and emotionally charged (Coyne, Stockdale, Busby, Iverson, & Grant, 2011). Similarly, decreased bandwidth may prove beneficial for support receiver’s processing of HPC messages, due to the decreased cognitive demands inherent to the environment, which, in turn, may enhance their cognitive processing capacity in ways that enable them to more effectively scrutinize the supportive messages they receive in ways that result in positive and beneficial support outcomes (Perry & Werner-Wilson, 2011). As for message production, producing LPC messages may be more difficult for support providers who perceive their communication channel has affording increased bandwidth. Thus, how level of VPC, supportive “role”, and bandwidth interact deserves further research attention.

Social presence. CMC scholars often use the term presence to refer to one’s experience in an interaction and their feeling of being psychologically connected to

others; a sense of “being there” (Ijsselsteijn, de Ridder, Freeman, & Avons, 2000, p. 3959). Similarly, Blascovich (2002) conceptualized presence as “a psychological state in which the individual perceives himself or herself as existing within an environment” (p. 129). Presence has been a fundamental concept to CMC in general, as two of the first CMC theories focused on the influence of this affordances (i.e., Social Presence Theory, Short et al., 1976; Media Richness Theory, Daft et al., 1987). Research often points to various factors that influence perceptions of social presence, such as heuristic cues of the CM environment (e.g., logos, telephone numbers; Sundar, Oeldorf-Hirsch, & Garga, 2008; Vishwanath, 2016), temporal response delays (Bradner, Kellogg, & Erickson, 1999; Culnan & Markus, 1987; Rice & Steinfield, 1994), and social and/or nonverbal cues (Mehrabian, 1969; Sproull & Keisler, 1986; Fox & McEwan, 2017).

Several studies reveal the influence of perceived social presence on CM interactions. In one study, Gunawardena and Zittle (1997) reported that social presence predicted 60% of the variance in students reported satisfaction within a computer-mediated conferencing environment. They also documented the influence of text-based socio-emotional cues (i.e., emojis) on increased perceptions of presence during CM interactions. This is in-line with Walther’s (1992) argument that users recognize the lack of social cues in CM environments and utilize nonverbal surrogates to increase the information and richness of their interactions. Additionally, Oztok and colleagues reported that perceived social presence was particularly beneficial for communicating with weak ties (Oztok, Zingaro, Makos, Brett, & Hewitt, 2015).

Research exploring CM social presence offers important implications for computer-mediated supportive communication. Social presence inherently relates to a

sense of closeness between communicators, which is important for supportive communication in particular because closeness is consistently documented as influence the production and perception of social support (Feeney & Collins, 2001; Hobfoll & Lerman, 1989; Kaul & Lakey, 2003). Thus, CM interactants who perceive decreased social presence may develop dehumanized perceptions of others (Mesch & Beker, 2010), which, in turn, likely inhibits supportive interactions. In line with this thinking, Feng et al. (2013) highlighted the influence of personal identity cues, such as a profile picture and name ID, on the quality level of supportive communication. They found that not only did these cues increase perceptions of social presence, but social presence partially mediated the relationship between identity salience and person-centered message production. Others suggest that social presence influences emotion communication, which is an inherent component of supportive interactions. For instance, Derks, Fischer, and Bos (2008) argued that social presence influences 1) the emotional *content* of messages, 2) the *expression* of emotion, and 3) emotion *recognition*. As high-quality VPC supportive communication requires an in-depth focus on a distressed others' emotional experiences, the ability to explicitly incorporate emotion content in messages, as well as express and recognize emotions, is fundamental to engaging in effective supportive interactions and achieving positive support outcomes (see Burleson, 1985; Burleson & Goldsmith, 1998; Burleson et al., 2009).

To expand upon our understanding of social presence within the context of CM supportive communication, an important next step is to explicate how and in what ways varying levels of social presence differently influence supportive interactants (i.e., providers, receivers) and/or supportive conversations containing greater or lesser levels

of VPC (i.e., LPC, MPC, HPC conversations). For instance, a heightened perception of social presence may benefit support receivers regardless of the quality level of the supportive interactions, because increased feelings of closeness benefit people's perception of support (Hobfoll & Lerman, 1989; Kaul & Lakey, 2003). For message *production*, social presence likely disadvantages LPC support due to the difficulty of expressing negativity toward others with whom we feel close (Derks et al., 2008). Conversely, for MPC and HPC conversation, social presence may enhance people's ability to recognize and attend to the emotional experiences of a distressed other, which, in turn, could result in more effective supportive communication.

Synchronicity. Synchronicity refers to how soon messages occur in succession (Bradner, Kellogg, & Erickson, 1999; Culnan & Markus, 1987; Rice & Steinfield, 1994). For instance, some communication channels enable synchronous communication such that people respond in immediate succession with little delay between messages (e.g., face-to-face communication, instant messaging, video-conference technologies). Conversely, several CM modalities allow interactions to occur asynchronously, granting users more time to formulate a response that meets the needs of the situation and enabling them to send and receive messages over time (e.g., text messaging, online support groups). This affordance fundamentally alters the communicative interactions that occur within and/or between communication channels. While synchronous interactions require people to respond immediately and give interactants little time to formulate a response or attend to the various elements of the situation, asynchronous interactions allow users more time to formulate a response that meets the needs of the situation.

A wealth of research document the influence of (a)synchronicity on communication process, experiences, and outcomes. As per Media Synchronicity Theory for instance (Dennis et al., 2008), communication aimed to simply *convey* information occurs best through less synchronous channels, whereas *convergence* occurs best when interactants are able to synchronously work together and coordinate their patterns of behavior. Additionally, response latency has been documented as negatively associated with a receivers' perception of their partners communication competence (McLaughlin & Cody, 1982). Thus, asynchronous communication violates an implicit norm communicators have to sustain interactions and minimize conversational gaps (Sacks et al., 1978), which both alters the structure of the interaction itself and fundamentally changes the interdependence between communicators.

Regarding supportive communication in particular, synchronicity contributes to the complex nature of the support process. Support providers interacting with others in a synchronous manner must not only quickly process the message(s) they receive, they must then immediately attend to the needs of the seeker; the task becomes even more difficult due to the time constraints of the interaction. Many CM channels, on the other hand, afford users more time to accomplish these same tasks. While the cognitively demanding nature of the task itself is the same, asynchronous channels enable users more time to strategically craft their messages and provide effective support. High (2011) offered support for this idea, reporting that people provided more effective support when interacting through CMC venues as compared to FtF. Research documents that synchronicity equally influences support seeking/processing. Online support groups frequently act in place of offline support networks (Rains & Keating, 2011), and High

and Solomon (2011) identified their asynchronous nature as one of the main contributors to their widespread use and efficacy. Because online support groups usually communicate asynchronously, distressed users are able to come and go as support is needed. This flexibility allows users to view previous conversations that have happened through the group, gaining helpful information for their own problems and participating in conversations as time allows (Danielson & Youngvorst, in press).

Synchronicity likely offers unique benefits and challenges for support providers and receivers, as well as for conversations varying in support quality. It could be argued that synchronicity universally disadvantages support providers, regardless of support quality, due to the decreased time they have to simultaneously manage several cognitively demanding goals within a supportive interaction. Thus, regardless of *what* a support providers communicate, they may benefit from more time to process and subsequently produce sophisticated and emotionally-laden messages. Support receivers, on the other hand, may experience benefits from synchronicity no matter the quality level of their conversation. Taylor (2011) noted that asynchronicity creates a disconnect between interactants due to lacking immediate and interactive, two-way communication. Thus, synchronous channels may create stronger connections between interactants that benefit a receivers processing of messages they receive.

Conversational control. Conversational control regards the extent to which one has control over the mechanics of a conversation, such that they can initiate/end a conversation as they see fit and/or regulate turn-taking (Fox & McEwan, 2017). The importance of conversational control on communication harkens back to Goffman's (1963) discussion of facework, in which he argued that individuals must control their

information (e.g., deciding *what* to say, *when* to say it, and *how* to express oneself) in order to effectively manage social interactions in ways that result in positive impressions and decreased face threat. Expanding upon this notion, Parks (1985, 1994) conducted a comprehensive review to assess factors influencing conversational control; results revealed that conversational control includes concrete factors like regulating one's body along with more abstract factors like managing conversational sequencing and negotiation(s).

Various studies highlight the influence of communication control on conversational experiences and outcomes. In fact, Madell and Muncer (2007) reported that conversational control was the foremost reason why participants reported engaging in CM rather than FtF communication. Participants reported that CM venues afforded them greater conversational control compared to FtF interactions, and they tended to appreciate their power in regulating communication and information flow. In an effort to explain *why* conversational control is appealing to communicators, Feaster (2010) contended that increased perceptions of conversational control enable people to more effectively accomplish the many simultaneous, and often conflicting, demands of a conversation. More specifically, Feaster argued that increased perceptions of conversational control enable people to 1) more effectively manage face-threats, 2) manage conversational sequencing and flow in-line with intentions, 3) recognize to the changing demands of social interactions, 4) adapt communication according to social norms, expectations, or conversational demands, and 5) speed up and/or slow down the rate of information flow within interactions. Offering empirical support for this thinking, Kuo and colleagues found that conversational control significantly explained participants

use of Facebook, as well as behaviors relating to self-presentation therein (Kuo, Tseng, Tseng, & Lin, 2013).

Perceived conversational control presents several implications for supportive interactions. In fact, Walther and Boyd (2002) identified interaction management (e.g., control of the initiation/termination of interactions) as one of the main attractions of CM social support. Although few studies explicitly test the influence of communication control on social support, related research does offer some insight. Witmer and Singer (1998) argued that the extent to which people feel connected to others and satisfied with their CMC experience depends on one's control over their environment. Accordingly, conversational control should be positively related to perceptions of presence (Lombardi & Ditton, 1997). Research shows that the skill with which people engage in CMC predicts perceptions of presence (Wrench & Punyanunt-Carter, 2007), which offers support for a positive association between conversational control and presence. This is important for supportive communication because perceived presence significantly influences supportive interactions (see above); conversational control, then, likely exerts significant influences on supportive interactions as well. For instance, increased perceptions of conversational control likely benefit support providers and receivers engagement in both LPC and HPC supportive interactions due to their increased ability to manage face threats inherent to the interaction and navigate the social and functional demands of supportive interactions. Evidence from one study suggested that communicating through channels that afforded increased communication control enabled people to more effectively manage emotionally-laden conversations (Madell & Muncer, 2007). Because LPC and HPC messages are inherently emotional (Burlinson, 1982),

heightened communication control is likely advantageous for both a providers' production of emotionally intense messages as well as a receivers' processing of VPC messages.

Persistence. Communication is often conceptualized as a fleeting, ephemeral experience, such that it lasts only for a short time. CM venues, however, fundamentally change communication by enabling more permanent, long-lasting messages. Persistence regards the extent to which messages translated through a channel remain accessible and can be reviewed after an interaction has taken place (Fox & McEwan, 2017; Treem & Leonardi, 2013). Although referenced differently in previous scholarship (*reviewability*, Clark & Brennan, 1991; *recordability*, Ellison, Gibbs, & Weber, 2015; Toma, Hancock, & Ellison, 2008), a wealth of research has explored the concept of persistence in relation to CMC and/or its outcomes (Bregman & Haythornthwaite, 2001; boyd, 2011; Donath, Karahalios, & Viegas, 1999; Evans et al., 2016). For instance, Treem and Leonardi (2013) argued that CM venues that enable increased persistence create “robust forms of communication” (p. 157). Additionally, Ellison et al., (2015) suggested that persistence results in increased selectivity in one’s self-presentation and/or (mis)judgement of communication over-time. Ultimately, users tend to both acknowledge and adapt to the persistent nature of many CM venues (Toma et al., 2008).

Several studies have explored how persistence influences CM supportive interactions. Online support groups are often heralded for their ability to retain messages such that support seekers have access to archives of messages that could prove helpful and/or supportive in any number of stressful situations (Walther & Boyd, 2002). Similarly, a study exploring ephemeral social media-based interactions revealed that

Snapchat, a highly ephemeral mobile social platform, was associated with lower levels of social support compared to other, more persistent channels (e.g., text messaging, twitter; Bayer, Ellison, Schoenebeck, & Falk, 2016). Through a series of loosely structured interviews, Bayers and colleagues identified ephemerality as a main reason why Snapchat is an ineffective and/or inappropriate CM venue for engaging in a supportive interaction. In fact, participants explained that the limited duration of messages made it difficult to communicate the type of emotions inherent to social support (e.g., intense, negative, serious). Thus, research suggests that persistent communication likely benefits supportive communication.

Less is known, however, about the influence of persistence on VPC or specific components of the supportive process (e.g., provision, reception). Support providers are likely disadvantaged by persistence regardless of the quality level inherent to the conversations, as persistence may increase the risks involved in providing support. Particularly when providing complex and face-threatening messages, such as those comprising LPC and HPC support, higher perceived persistence likely worsens a providers' ability to produce messages due to the durable nature of the message itself. Conversely, for support receivers, the influence of perceived persistence may function differently for support receivers' may depend on the quality level of the conversation. Increased perceptions of persistence likely disadvantage receivers engaging in LPC conversations, as they can re-visit the unsupportive messages over and over in ways that reiterate and/or reinforce their negativity. Relatedly, support receivers engaging in HPC conversations may benefit from increased perceptions of persistence due to the ability to continually (re-)process the supportive message.

Editability. Editability regards the extent to which users feel they can strategically (re)craft and edit messages before sending them to others (Fox & McEwan, 2017; Rice, 1987; Walther, 1993). As Treem & Leonardi (2013) conceptualized, editability is a function of two aspects of CMC: “communication formed in isolation from others, and asynchronicity” (p. 159). For example, users are less able to edit their reactions and responses when people can view their physical displays and reactions (e.g., video conferencing software); conversely, editability is much easier through channels in which people need not worry about managing their nonverbal cues and can thus focus more strongly on forming messages in ways that effectively convey meaning (e.g., text-based, asynchronous channels). Several communication technologies also enable editability *after* messages have been communicated. For instance, users who post content on Facebook are able to edit messages after they have been originally submitted, often to the extent that the editing goes completely unnoticed by others (Treem & Leonardi, 2013).

The extent to which communication channels enable editability has been found to significantly influence communicative experiences and outcomes therein. Channels that afford editability enable users to plan, edit, and rehearse messages to the extent that they may more effectively convey information. In fact, several studies recognize the importance of editability for improving information content (Dennis et al., 2008; Treem & Leonardi, 2013). Research has also explored editability in relation to deception, revealing that the editable nature of many CM venues enables successful deception due to a deceiver's ability to plan and rehearse messages (Carlson, George, Burgoon, Adkins, & White, 2004). Ultimately, editability seems to benefit users due to their ability to craft

messages in-line with their needs and goals, resulting in more direct and straightforward communication.

Editability presents several implications for supportive communication. For instance, Walther and Boyd (2002) identified the ability to spend time strategically crafting messages as one of the biggest reasons why people turn to CM venues for support. One participant in their study, a 47-year-old male, articulated the benefits of editability when reflecting on his experiences participating in an online support group for loneliness, saying “[o]ur questions and answers are more articulate, more meaningful [...]. It is my belief that the discussion is easier and healthier [...].” (“Analyses”, para. 3). Thus, editability likely proves beneficial for support provider and receivers, regardless of the quality level of the conversation, due to the increased ability to strategically craft messages to accomplish the goals of the interactions. For the support provider, increased editability is likely advantageous to their ability to produce person-centered supportive messages. Support seekers likely also benefit, as they are more able to craft successful support-seeking messages in ways that convey a supportive need to other. Further, support recipients may perceive interactions via editable CM channels as more beneficial than other channels. For example, Walther (2007) reported that increased time spend editing and composing messages was positively correlated with immediacy/affection. Therefore, editability is an important affordances to consider when examining contextual influences on CM supportive interactions.

Hypotheses

Communication channel. As outlined above, various theories have been proposed to explain computer-mediated communication. In particular, initial theories

argued that CM venues were disadvantageous for communication in general, such that the reduced social cues inherent to these environments resulted in *impersonal* interactions (Social Presence Theory, Short et al., 1976; Media Richness Theory, Daft & Lengel, 1986). Later theories, however, suggest that CM venues do not inherently disadvantage communication (Social Information Processing Theory, Walther, 1992), and that they may even promote *more* effective interactions than those occurring FtF (Hyperpersonal Perspective, Walther, 1996). Considering the conflicting nature of these theories, an important first step is to explore which approaches best explain computer-mediated supportive communication.

As several scholars have done in the past, I propose competing hypotheses that each capture different theoretical approaches to CMC (High, 2011; Holtzman et al., 2017; Rains et al., 2017). Per the cues filtered out perspective, for instance, supportive interactions through CM channels that inhibit the transmission of social cues should be less effective than those occurring FtF. Yet, as Media Richness Theory indicates, CM modalities that contain more social cues than others, such as Skype, should be more effective than those that inhibit social cues, such as text messaging. Additionally, whereas Social Information Processing Theory suggests that CM channels can be equally effective venues for supportive communication as are FtF interactions, the hyperpersonal perspective of CMC argues that interactions via CM channels may be more effective than FtF communication. Therefore, I present the following competing hypotheses specifying not only how CM channels generally influence communication, as per seminal CMC theories, but also how CM channels may differently influence support providers', support

receivers', and third-party raters' perceptions and/or outcomes of supportive conversations:

Channel effects on support receivers.

H1 (*Social Presence Theory*): Support receivers who engage in supportive conversations FtF perceive the conversation as higher quality (H1a), and report higher levels of emotional improvement (H1b) and cognitive reappraisal (H1c) compared to those communicating via text messaging or Skype.

H2 (*Media Richness Theory*): Support receivers who engage in supportive conversations via Skype perceive the conversation as higher quality (H2a), and report higher levels of emotional improvement (H2b) and cognitive reappraisal (H2c) compared to those communicating via text messaging.

H3 (*Hyperpersonal Perspective*): Support receivers who engage in supportive conversations via either text messaging or Skype perceive the conversation as higher quality (H3a), and report higher levels of emotional improvement (H3b) and cognitive reappraisal (H3c) compared to those communicating FtF.

Channel effects on support providers.

H4 (*Social Presence Theory*): Support providers who engage in supportive conversations FtF perceive the conversation as higher quality (H4a) and report a greater ease of message production (H4b) compared to those communicating via text messaging or Skype.

H5 (*Media Richness Theory*): Support providers who engage in supportive conversations via Skype perceive the conversation as higher quality (H5a) and report a greater ease of message production (H5b) compared to those communicating via text messaging.

H6 (*Hyperpersonal Perspective*): Support providers who engage in supportive conversations via either text messaging or Skype perceive the conversation as higher quality (H6a) and report a greater ease of message production (H6b) compared to those communicating FtF.

Channel effects on third-party raters.

H7 (*Social Presence Theory*): Third-party raters of FtF supportive conversations perceive the conversation as higher quality compared to conversations occurring via text messaging or Skype.

H8 (*Media Richness Theory*): Third-party raters of supportive conversations occurring via Skype perceive the conversation as higher quality compared to conversations occurring via text messaging.

H9 (*Hyperpersonal Perspective*): Third-party raters of supportive conversations occurring via either text messaging or Skype perceive the conversation as higher quality compared to conversations occurring via text messaging or Skype.

It may be, though, that communication channel differently influences conversational perceptions as a function of the quality level of supportive conversations. For instance, High (2011) reported that third-party observers of supportive communication perceived HPC conversations as more supportive via instant messaging

compared to FtF. Similarly, Media Richness Theory argues that the equivocality of a message dictates whether rich or lean CM channels will be effective (Daft & Lengel, 1984; Daft et al., 1987). Thus, HPC messages, which are highly equivocal in nature, may better benefit from rich channels (e.g., FtF, Skype), whereas LPC messages may be successfully communicated via lean CM channels (e.g., text messaging). Thus, to examine how communication channel and level of VPC may interact to influence conversational perceptions, I propose the following research questions:

RQ1: Do communication channel and level of VPC interact in ways that influence receivers' (RQ1a), providers' (RQ1b), or third-party observers' (RQ1c) conversational perceptions?

Perceived Affordances

As previously explained, it is important to recognize differences between communication channels in order to explicate whether and how they uniquely influence communication therein. Rather than exploring this from a technological deterministic approach, such that technology inherently exerts influence on communication, I argue how users *perceive* communication channels and their action possibilities influences their communicative experiences and outcomes. The first step in the process is to examine what action possibilities users perceive are available to them when communicating through various channels. Research provides preliminary insight into how perceived affordances differ across FtF, texting, and video conferencing modalities. For instance, Fox and McEwan (2017) reported that FtF was perceived as the communication venue highest in affordances related to social cues (e.g., bandwidth, social presence, synchronicity), whereas text messaging was perceived as highest in affordances related to

temporal delays control over communication (e.g., conversational control, persistence, editability). They also found that video conferencing, such as Skype, is typically perceived as affording less social cues than FtF interaction but more than text messaging; similarly, people tend to perceived Skype as affording more interaction control than FtF conversations but less than text messaging. This research indicating that people's perceptions of various affordances differ significantly across FtF, text messaging, and skype-based communication channels. Thus, in-line with previous research, I propose the following hypotheses regarding how perceived affordances differ as a function of the three communication channels of focus to this dissertation, namely FtF, Skype, and text messaging:

- H10: Communication channel exerts a significant main effect on perceived bandwidth, such that participants perceive bandwidth as significantly higher in FtF conversations compared to those occurring via Skype (H10a), and Skype-based conversations are perceived as significantly higher in bandwidth than when communicating via text messaging (H10b).
- H11: Communication channel exerts a significant main effect on perceived social presence, such that participants perceive social presence as significantly higher in FtF conversations compared to those occurring via Skype (H11a), and Skype-based conversations are perceived as significantly higher in social presence than when communicating via text messaging (H11b).
- H12: Communication channel exerts a significant main effect on perceived synchronicity, such that participants perceive synchronicity as

significantly higher in FtF conversations compared to those occurring via Skype (H12a), and Skype-based conversations are perceived as significantly higher in synchronicity than when communicating via text messaging (H12b).

H13: Communication channel exerts a significant main effect on perceived conversational control, such that participants perceive conversational control as significantly higher in text messaging conversations compared to those occurring via Skype (H13a), and Skype-based conversations are perceived as significantly higher in conversational control than when communicating FtF (H13b).

H14: Communication channel exerts a significant main effect on perceived persistence, such that participants perceive persistence as significantly higher in text messaging conversations compared to those occurring via Skype (H13a), and Skype-based conversations are perceived as significantly higher in persistence than when communicating FtF (H13b).

H15: Communication channel exerts a significant main effect on perceived editability, such that participants perceive editability as significantly higher in text messaging conversations compared to those occurring via Skype (H15a), and Skype-based conversations are perceived as significantly higher in editability than when communicating FtF (H15b).

An important question that arises when studying perceived affordances regards what factors influence these perceptions. For instance, support providers and receivers may perceived different action possibilities available to them in FtF, text messaging,

and/or Skype-based interactions as a function of their role within the supportive interaction. Various studies highlight how perception of communication channels can change or become more/less influential (Carlson and Zmud, 1999, D'Urso & Rains, 2008, Ruppel, 2015); however, research often focuses solely on how one's previous experience with a communication channel or satisfaction with their communicative partner influence channel perceptions. I argue that one's role within a supportive interaction also influences their perception(s) of the affordances available to them within various communication channels. For example, due to the risks inherent to providing support (MacGeorge et al., 2011), providers may be more aware of the persistence afforded to them by text messaging and thus perceived this channel as higher in persistence compared to support receivers. Similarly, support providers may perceived FtF and Skype-based conversations as *more* synchronous than receivers, as they are required to simultaneously manage several competing goals within supportive interactions which may, in turn, influence their perceptions of synchronicity. Additionally, because supportive communication often focuses on the support receiver and their emotional experiences, receivers may perceive they have greater control over communication than providers, particularly when communicating through channels that functionally limit control (i.e., FtF and Skype). As this is the first empirical test to examine how different communication channels uniquely influence support providers' and receivers' perceived affordances, I propose the following research question:

RQ2: Do the predictions specified in H10-H15 differ between support receivers or support providers?

Beyond examining how perceived affordances differ as a function of communication channel and/or supportive role, it is also important to explore how differences in perceived affordances uniquely influence outcomes of supportive conversations. For instance, various studies document the importance of social and nonverbal cues on supportive communication (see Jones & Guerrero, 2001; Jones, 2004). Thus, channels that afford increased social cues are likely more beneficial for supportive interactions. Similarly, conversations with low response latencies and temporal delays increase feelings of closeness and connection between communicators (Taylor, 2011), so synchronous channels may better facilitate effective supportive interactions than asynchronous channels. However, the influence of perceived affordances on communication outcomes is likely to differ between support providers and receivers. For example, support receivers are likely to universally benefit from the previously identified six affordances, as increased social cues and conversational control are beneficial for supportive interactions. Conversely, support providers likely benefit from affordances that permit them more control over message construction/production (e.g., editability, conversational control), whereas they are likely disadvantaged by affordances that increase social cues or communication interactivity (e.g., bandwidth, social presence, synchronicity, persistence). Thus, the following hypotheses predict how perceived affordances influence providers' and receivers' supportive communication experiences and/or outcomes:

H16: Perceived bandwidth, social presence, conversational control, synchronicity, persistence, and editability are all positively associated with a support

receiver's perception of support quality (H16a), as well as their reported emotional improvement (H16b) and cognitive reappraisal (H16c).

H17: Perceived bandwidth, social presence, synchronicity, and persistence are negatively associated with a support provider's perception of support quality (H17a) and ease of message production (H17b), whereas perceived conversational control and editability are positively associated with perception of support quality (H17c) and ease of message production (H17d).

Interactions

How level of VPC and perceived affordances interact to influence support providers and receivers conversational perceptions and outcomes is not yet known. As explained above, perceived affordances likely differently influence outcomes as a function of the quality level of CM supportive interactions. Consider the influence of perceived bandwidth on a support receiver's conversational outcomes, which is likely different for LPC compared to HPC conversations; yet, no clear consensus has been reached as to whether perceived bandwidth positively or negatively influences more or less person-centered conversations. Whereas some research suggests that *increased* bandwidth benefits receivers of LPC support because social cues buffer against the negativity of such messages (Dakof & Taylor, 1990; Jones, 2004, 2005), other research indicates that *decreased* bandwidth advantages receivers of LPC messages due to the decreased intensity and emotionally charged nature of interactions limited in social cues (Coyne et al., 2011). Similar, contradicting arguments can be made regarding the influence of perceived bandwidth on HPC support. For instance, *increased* bandwidth

may benefit the efficacy of HPC support due to the combined influence of sophisticated supportive messages and nonverbal cues (Jones & Guerrero, 2001), but it may also be that *decreased* bandwidth benefits receivers of HPC support because reduced social cues enable them to devote greater cognitive resources toward messaging processing in ways that result in positive and beneficial support outcomes (Perry & Werner-Wilson, 2011). Thus, I propose the following research question to assess possible interactions between the six perceived affordances measured in this study and level of VPC:

RQ3: Do perceived affordances and level of VPC interact in ways that influence support receivers (RQ3a) or providers (RQ3b) conversational perceptions and/or outcomes?

Chapter Summary

This chapter reviewed computer-mediated communication in relation to supportive communication. Although wealth of theories have been proposed to explain the process of computer-mediated communication, little research has been conducted that systematically examines how and in what ways various communication channels are fundamentally distinct from one other, and even less has explored the influence of those differences on communicative experiences and/or outcomes. To address this lacuna, *perceived affordances* were identified to explain the relationship between communication modalities and supportive communication. In particular, several hypotheses (see Table 1) and research questions were advanced to empirically test whether and how communication channels, and their perceived affordances, influence support providers' and receivers' perception of supportive interactions (e.g., support quality) or their outcomes (e.g., emotional improvement, conversational effectiveness).

Chapter Four

Chapter four presents the method used to test the hypotheses and research questions regarding computer-mediated, verbal person-centered supportive communication. I utilized an interaction-based experimental design to explore the influence of communication channel, verbal person centeredness, perceived affordances, and supportive role on conversational perceptions and outcomes. This chapter begins with a description of the experimental method used for the study, followed by a detailed operationalization for each variable of interest. A brief summary concludes the chapter.

Research design

A 3 (communication context: face-to-face, Skype, text messaging) x 3 (verbal person centeredness: low VPC, moderate VPC, high VPC) x 2 (role: provider, receiver) between subjects factorial design tested the main and interaction effects of VPC, communication channel, and perceived affordances on provider's and receiver's supportive communication experiences (e.g., perceived support quality, emotional improvement, ease of message production).

Participants

Participants ($N = 492$) were undergraduate students recruited from communication courses at a large Midwestern university, who received extra credit for participating. To be eligible, participants needed to a) sign up to participate with someone with whom they have been friends with for at least 6 months, b) be between the ages of 18-64, and c) possess a cell phone that they could bring to their research session. More women ($n = 324$) than men participated in the study (three participants did not report their sex). The average age was 21 years old (*range*: 18–65; *SD* = 3.21). Most

participants identified as White (61.6%), and others classified themselves as Asian/Asian American (24.8%), African/African American (7.1%), Hispanic/Latinx (4.3%), Pacific Islander (0.2%), or “Other” (2.0%). In total, 246 friend-dyads participated in the study. Female-female dyads constituted the majority of friendships (51.4%), followed by male-female (27.6%) and male-male (19.9%) friendships. The average friendship length was 38 months (*range*: 6–208; *mode*: 6; *SD* = 40.89).

Procedures

Two participants reported to the lab at the same time for their research session. Each session lasted approximately two hours. Upon arriving to the lab, a research assistant informed the participants of the general aim of the study, along with any potential risks/benefits, and elicited informed consent. The participants were then randomly assigned to one of the 18 experimental conditions of this study and were separated into different rooms to complete the pre-interaction survey, which measured several personal (e.g., desired support, use of technology) and relational (e.g., closeness, satisfaction) qualities.

Stress event. Upon completing the pre-interaction survey, the participant designated as the “support receiver” was instructed by a research assistant to identify 10 stressful problems they were experiencing in their life. This both ensured that participants were identifying a range of topics and provided the primary researcher enough time to finish training the support provide (see below). Support receivers were instructed to identify topics that were (1) not relationally specific to the friend with whom they were participating, and (2) happening in their life at the time of their participation. To ensure participants understood the types of topics to identify, they were provided with a list of

example stress events, which included topics ranging from academic/career-related issues and financial problems, to concerns about health/fitness.

For each of the 10 stressful events, participants were asked to rate the seriousness and stressfulness of the event (1 = *a little bit*; 5 = *extremely*), as well as complete measures assessing if they have previously discussed the event with their friend (e.g., *yes-no*), how much they have talked about the event (1 = *a little bit*; 5 = *a great deal*), how many separate times they have talked about the event (1 = *once*; 5 = *constantly*), and when the last time they talked about the event was (1 = *past few days*; 5 = *past few months*). Of the 10 topics, the research assistant selected the event that was rated as most serious and distressing. If several events were rated equally on these dimensions, the research assistant chose whichever event was identified first in the process. The support receiver was then instructed to complete a brief measure about the chosen event that evaluated their attributions and appraisals of the event, as well as their feelings toward the impending supportive conversation with their friend. Although the problems participants identified included a range of topics, the most common issues were school stress, post-graduation uncertainties, or family/relational problems. The seriousness ratings for topics that were discussed ranged from 2 to 5 on a 5-point scale ($M = 4.2$, $SD = 1.19$, $mode = 4$). The stressfulness ratings for topics that were discussed ranged from 2 to 5 on a 5-point scale ($M = 3.9$, $SD = 1.31$, $mode = 4$). On average, most participants had talked with their friend about the topic (68.2%).

VPC training. While the support receiver was working with a research assistant to identify a topic to focus on during the supportive conversation, the primary researcher worked with the “support provider” to prepare them for the conversation. In particular,

the support provider was informed that their friend had identified a stressful situation for which they would like to seek help. They were then told that they had been randomly assigned to provide a specific type of support during the upcoming conversation, either low VPC, moderate VPC, or high VPC. They were instructed that they should engage in the forthcoming supportive conversation by provide whichever specific type of support they were randomly assigned, and that they were not to let their friend know the support they provided had been trained or manipulated.

It is important to note the complexities of manipulating conversations between friends. Relational partners develop expectations regarding how they will communicate in various situations, and this has been reported in supportive interactions (Pierce, Sarason, & Sarason, 1991). Therefore, manipulating a relational partners' provision of support in ways that differ from their normal comforting style may influence the conversation in various ways. For instance, this may influence support receivers' perceptions of their partner or supportive conversation such that their evaluations are a reflection of their partner's unprecedented communication rather than a function of the manipulation itself. Additionally, this could prime the support receivers to the study's purpose and jeopardize the entire experiment. These challenges were taken into account when developing the VPC manipulation procedures and were also explicitly tested through pilot testing (see below).

The training session began with a general explanation of VPC in relation to supportive communication (as per Burleson, 1987). Focus then shifted specifically on the level of VPC the participant was assigned, as they were informed about the conceptualization and make-up of that specific level. Previous research involving VPC

manipulations indicates that MPC is the most common type of support provided in naturally occurring interactions. Therefore, similar to procedures employed by similar studies (High 2011; Jones & Burleson, 2003), participants in the MPC condition were told to think of how they normally provide support. Those in LPC and HPC conditions were informed how to adjust their support to be in-line with either LPC or HPC support as needed.

Upon receiving general instructions regarding their assigned level of support, participants watched a video of a real supportive conversation that mirrored the assigned level of VPC; these videos were obtained from a supportive conversation data set that has been reported elsewhere (see, Jones, 2004; Jones & Guerrero, 2011). Participants were instructed to pay attention to the types of messages the support provider produced in the video, and were provided with a pen and paper on which to take notes while watching the video. After completing the video, the primary researcher engaged the participant in a discussion about what they saw in the video, using that as an opportunity to reinforce the participants understanding of their assigned level of VPC as well as knowledge regarding the specific types of messages they were expected to produce in the forthcoming conversation. This then led to a more in-depth training on the participants assigned level of VPC.

Participants in the LPC condition were trained to provide relatively low-quality support (see Appendix B). LPC messages are originally conceptualized to include various elements, such as condemning, blaming, challenging, or ignoring the feelings of a stressed other. Though messages containing any of these elements fall under the broad category of LPC support, some aspects, such as condemning and blaming, are worse than

other aspects, such as challenging or ignoring (Applegate, 1978; Burleson et al., 2009; Burleson & Samter, 1985). Considering the previously identified challenges of manipulating conversations between friends, participants in the LPC condition were not trained to blame a stressed others for their feelings or the situation, because individuals receiving such messages from relational partners may be more sensitive to their negative nature and perceive the conversation and/or their partner in ways that jeopardize the study. Instead, participants were told to provide messages that are less intense, but still fall under the category of LPC support. This included providing messages that either challenged or minimized their partners feelings (e.g., “Oh, come on. It’s not the end of the world. I’m sure you’ll get over this”), challenged the actions people have (or have not) taken (e.g., “Well, it doesn’t really sound like you’ve done much to improve this situation), or ignored the stressed other by diverting the conversational focus to center on the support provider (e.g., “Guess what happened to me today at lunch?”). 33.3% of dyads ($n = 82$) were randomly assigned to the LPC condition.

Participants in the MPC condition were trained to provide messages that generally acknowledge a stressful situation is happening while never explicitly recognizing the feelings or emotions of the distressed other (see Appendix C). Participants in this condition were trained to provide messages that express sympathy to their friend, yet fail to acknowledge or expand upon the feelings that have resulted from the stressful situation(s) at hand. This included providing messages that distract (e.g., “Let’s catch a movie to take your mind off that”), offering boilerplate condolences (e.g., “I’m sorry to hear that”), providing content-focused prompts (e.g., “What happened then?”) and remarks (e.g., “That really sucks”), or clarifying details of the situation (e.g., “Where did

this happen again?”). 34.2% of dyads ($n = 84$) were randomly assigned to the MPC condition.

Participants in HPC condition were trained to provide the most helpful and comforting messages (see Appendix D). HPC messages are argued to include various elements, such as explicitly recognizing, elaborating upon, and positively reframing a stressed others feelings. Participants were told to provide messages in line with this conceptualization, such that they explicitly acknowledge, elaborate upon, and/or reframe the distressed others negative emotions. This included expressing empathy (e.g., “I totally understand why you’re sad. I feel so bad for you.”), explicitly acknowledging the feeling(s) of their partner (e.g., “It makes sense why you were upset and sad”), expressing acceptance of their partner’s emotions (e.g., “I don’t blame you for feeling that way”), elaborating upon their partners feelings (e.g., “I completely understand why you were mad – he cheated on you!”), and positively reframing their partners emotions (e.g., “I know breakups are stressful and difficult, but just think about how much time you have to focus on *you*”). 32.5% of dyads ($n = 80$) were randomly assigned to the HPC condition.

Once the training was complete, the primary researcher engaged the participant in a role-playing activity regarding academic stress. While the primary research took on the role of the support receiver, the participant was instructed to provide support in-line with their assigned level of VPC; inaccurate provisions of support were corrected, whereas effective messages were praised and encouraged. When the participant demonstrates their ability to provide VPC in line with their assigned level, they were given 5 minutes in which to continue reviewing the support training materials in preparation for the forthcoming conversation. At that point, the primary researcher met with the research

assistant to learn the selected topic to be discussed in the supportive conversation between participants. The primary researcher then re-joined the support provider and informed them of the topic for the impending conversation and engaged them in another role-play activity that focused specifically on the selected topic. Because the topic of this role-play matched that of the upcoming conversation, this acted to better prepare the support provider to enact their assigned level of VPC. As before, the role-play activity was used as a teaching tool through which to encourage support provisions in line with their assigned quality level while simultaneously correcting inaccurate behaviors. Once the support provider consistently demonstrated an ability to provide support in line with their assigned level of VPC, training was completed. As a final reminder, the support provider was instructed to not mention the support training and to engage in the conversation as naturally as possible. In total, training session lasted approximately 20 minutes.

VPC training pilot-testing. In order to ensure that the VPC manipulations were successful, a pilot test was conducted to evaluate the influence of the described manipulation procedures on supportive conversations between friends. More specifically, the first 30 dyads of the study were treated as the pilot sample. Initially, it was important to ensure that the conversations were in-line with their intended manipulation, and that the VPC manipulations remain equivalent across communication modalities. Therefore, three scholar/experts of verbal person-centered supportive communication watched the video-recorded conversations and categorized their level of VPC. This enabled me to ensure the conversations were not only occurring in-line with their manipulated level of VPC, but also that the manipulations remained consistent across communication

modality. Because the pilot test showed that the VPC manipulations were effective and successful, the study continued.

Conversations. Once both support receiver and provider completed their respective pre-interaction tasks, participants were reunited through whichever medium they were randomly assigned. For face-to-face conversations, the participants sat on a couch in a research laboratory and were instructed to engage in a conversation with one another about the topic that was identified by the support receiver. They were informed that the conversation could last a maximum of 10 minutes, but were allowed to conclude earlier if they felt that it had naturally ended ($M = 8.83$ minutes, $SD = 2.18$). A video camera was set up such that conversations were recorded for subsequent review. 33.3% of dyads ($n = 82$) were randomly assigned to the FtF condition.

For Skype conversations, the participants were seated at computers in separate rooms and engaged in a conversation via the video-conferencing software Skype. They were informed that the conversation could last a maximum of 10 minutes, but were allowed to conclude earlier if they feel that it had naturally ended ($M = 8.62$ minutes, $SD = 2.08$). The screen-recording software Screencast-o-matic was used to record the Skype conversations for subsequent review. 32.5% of dyads ($n = 80$) were randomly assigned to the Skype condition.

For text messaging conversations, the participants remained in separate rooms and used their own cell phones to communicate with one another. A research assistant informed each participant that they were to engage in a conversation with one another about the topic that was identified by the support receiver. Consistent with past research and the theoretical foundation of Social Information Processing Theory (High & Caplan,

2009; Tidwell & Walther, 2002; Walther, 1992), it is important to allow CMC interactants more time to communicate than those in FtF conditions due to differences in interaction times (typing vs. talking) between these two contexts. Therefore, because it is necessary to make interaction opportunities equivalent between CMC and FtF conditions, participants in the text messaging condition informed that the conversation could last a maximum of 20 minutes, but were allowed to conclude earlier if they feel that is had naturally ended ($M = 18.41$ minutes, $SD = 4.04$). To maintain a record of the text messaging conversation, participants added the phone number for a research laboratory cell phone such that the conversation was a three-way group text-message between both participants and a research phone. A video camera focusing on the screen of the research phone recorded the text messaging conversation so as to document the timing and process of the interaction. 34.1% of dyads ($n = 84$) were randomly assigned to the text messaging condition.

Once either the maximum amount of time expired or the participants concluded the conversation, participants sat at computers in separate rooms to complete a post-interaction survey. This questionnaire measures several variables, including: manipulation checks, perceptions of the conversation/topic discussed, ego-depletion, and perceptions of the context through which the conversation took place.

Debriefing. Upon completing their participation in the study, participants were reunited and debriefed. Because there were several components involved in this study, included manipulations and deception, participants needed to be debriefed so they understood the true aim of the study. Initially, the support receiver was informed of the VPC training that occurred with the support provider prior to the supportive conversation.

In particular, the support receiver was informed that their friend was trained and instructed to only provide messages of support that were in-line with their randomly assigned level of VPC and were told that the support they received was not a reflection of their friend's supportive communication with them. Upon informing participants of the true aims of the study, they were given an opportunity to delete the video-recording of their supportive interactions. No dyads requested this action. After addressing any remaining concerns, participants were thanked for their participation and dismissed from the study.

Pre-Interaction Measures

Prior to the supportive conversation, participants completed a pre-interaction survey in which they responded to various personal and relational measures relevant for supportive interactions.

Unidimensional relationship closeness scale. Dibble, Levine, and Park's (2011) URCS was used to measure the degree of affective, cognitive, and behavioral mutual dependence between participants within each dyad. Participants completed 12 items (e.g., "My relationships with my friend is important in my life") using five-point Likert scales (1 = *strongly disagree*; 5 = *strongly agree*). Due to the unidimensionality of this measure, a composite relationship closeness variable was created ($M = 3.99$, $SD = 0.68$, $\alpha = .94$).

Relational satisfaction. Three items were created to measure participants' satisfaction with their friendship. Participants rated how satisfied, content, and happy they felt toward their friendship on 5-point Likert scales (1 = *not at all*; 5 = *a lot*). These three items were averaged to form the measure of relational satisfaction ($M = 4.54$, $SD = 0.61$, $\alpha = .91$).

Empathy. Participants completed the 7-item empathy subscale of Davis' (1980, 1983) Interpersonal Reactivity Index (IRI) on 5-point scale (1 = *does not describe me well*; 5 = *describes me very well*;" e.g., I often have tender, concerned feelings for people less fortunate than me). Results revealed acceptable internal reliability ($M = 3.99$, $SD = 0.58$, $\alpha = 0.71$).

Depression, anxiety, and stress scale. Lovibond and Lovibond's (1995) DAAS was used to measure participant's emotional states of depression, anxiety, and stress over the preceding week. The 21-item measure contains three subscales, including *depression* (e.g., "I couldn't seem to experience any positive feelings at all"), *anxiety* (e.g., "I felt I was close to panic"), and *stress* (e.g., "I found it hard to wind down). Each subscale consists of 7 items evaluated on four-point Likert scales (0 = never; 3 = almost always), and variables were created by calculating a summed score of all items within each subscale. Internal reliability for the depression ($M = 3.37$, $SD = 3.10$, *range*: 0-18), anxiety ($M = 3.99$, $SD = 0.58$, *range*: 0-18), and stress ($M = 3.99$, $SD = 0.58$, *range*: 0-21) subscales were all acceptable ($\alpha = .83$, $.75$, & $.79$, respectively).

Preference for online social interaction. Caplan's (2003) preference for online social interaction (POSI) measure was used to assess the extent to which participants preferred technologically-mediated interactions over those occurring FtF. Participants completed 6 items (e.g., "I prefer communicating with people online rather than face-to-face.") using five-point Likert scales (1 = *strongly disagree*; 5 = *strongly agree*). A composite variable was created in which higher scores equate to a stronger preference for online social interactions ($M = 1.92$, $SD = 0.60$, $\alpha = .74$).

Post-Interaction Measures

Following the supportive conversations, participants completed a post-interaction survey in which they responded to measures assessing their perception of the conversation, evaluation of their conversational partner, and several outcomes of supportive communication. Support providers and receivers completed slightly different versions of the post-interaction survey in order to ask questions specific to their respective experiences.

Ego depletion. Both support providers and receivers responded to Ciarocco, Twenge, Muraven, and Tice's (2010) measure, which was used to assess the participant's state self-control immediately following the interaction. Participants responded to a truncated 10-item version of the scale, including items 1, 2, 4, 5, 6, 7, 8, 10, 11, and 18 of the original scale (e.g., "I feel mentally exhausted right now"), and responded using seven-point Likert scales (1 = *not true*; 7 = *very true*). A composite variable was created in which higher scores indicated higher levels of ego depletion following the supportive interaction (receiver: $M = 2.64$, $SD = 1.32$, $\alpha = .92$; provider: $M = 2.56$, $SD = 1.36$, $\alpha = .93$).

Perceived affordances. Fox and McEwan's (2017) Perceived Social Affordances of Communication Channels Scale was used to assess both support providers and receivers perceptions of the affordances available to them through the communication channel they had just used to communicate with their friend. Of the ten affordances measured in scale, five of particular interest were used within this study, including *Bandwidth* (e.g., "The channel through which I just communicated allows me to convey emotion"), *Social Presence* (e.g., "The channel through which I just communicated

makes it seem like the other person is present”), *Conversational Control* (e.g., “The channel through which I just communicated allows me to regulate the flow of communication with others”), *Persistence*, (e.g., “I can retrieve past messages in the channel through which I just communicated”), and *Editability* (e.g., “If I make a mistake when creating a message in the channel through which I just communicated, I can change it before my receiver gets it”). An additional affordance of importance for this study is *Synchronicity*, so 4 items were created to measure participants perceptions of the synchronicity afforded to them by the channel through which they had just communicated (e.g., “When I receive messages through this channel, I can take as much or as little time as I want before I respond”). Results from Confirmatory Factor Analyses examining the unidimensionality of synchronicity items within the affordance scale showed that models for both support receivers ($\chi^2/df = 1.55, p < 0.05$; CFI = 0.99; SRMR = .02, RMSEA = 0.05) and providers ($\chi^2/df = 1.38, p < 0.05$; CFI = 0.98; SRMR = .03, RMSEA = 0.05) exhibited acceptable fit. Each subscale consists of 4 items evaluated on seven-point Likert scales (1 = *strongly disagree*; 7 = *strongly agree*), and composite variables were calculated for each subscale, including bandwidth (receivers: $M = 5.47, SD = 1.37, \alpha = .91$; providers: $M = 5.28, SD = 1.47, \alpha = .91$), social presence (receivers: $M = 5.15, SD = 1.50, \alpha = .91$; providers: $M = 4.88, SD = 1.62, \alpha = .91$), conversational control (receivers: $M = 5.50, SD = 0.84, \alpha = .71$; providers: $M = 5.34, SD = 1.03, \alpha = .70$), persistence (receivers: $M = 4.40, SD = 1.88, \alpha = .89$; providers: $M = 4.28, SD = 1.99, \alpha = .93$), editability (receivers: $M = 3.61, SD = 2.00, \alpha = .92$; providers: $M = 3.76, SD = 2.05, \alpha = .93$), and synchronicity (receivers: $M = 3.70, SD = 1.63, \alpha = .86$; providers: $M = 3.74, SD = 1.82, \alpha = .91$).

Perceived support quality. Both support providers and receivers responded to ten items previously established as effective in assessing people's evaluations of the support quality of supportive conversations (Bodie et al., 2012; High, 2011; Jones & Guerrero, 2001). Similar versions of each question were created so as to measure both support providers and receiver's perceptions of conversational support quality (e.g., provider: "I felt as though I supported my friend"; receiver: "I felt supported by my friend"). Participants responded using five-point Likert scales (1 = *strongly disagree*; 5 = *strongly agree*). A composite variable was created in which higher scores equate to higher perceived quality of support (receivers: $M = 3.94$, $SD = 0.62$, $\alpha = .92$; providers: $M = 3.56$, $SD = 0.78$, $\alpha = .95$).

Conversational realism. Both support providers and receivers responded to five items previously established to measure how realistic participants perceived their supportive conversation to be (High, 2011; High & Solomon, 2014). Participants responded to items (e.g., "Our conversation was realistic" and "Our interaction was similar to others I've had before") using five-point Likert scales (1 = *strongly disagree*; 5 = *strongly agree*). A composite variable was created in which higher scores equate to higher perceived conversational realism (receivers: $M = 3.84$, $SD = 0.70$, $\alpha = .80$; providers: $M = 3.80$, $SD = 0.69$, $\alpha = .81$).

Self-presentational confidence. Both support providers and receivers responded to ten items previously established to measure how comfortable people felt in their communication and impression of self during the supportive conversation (High, 2011). Participants responded to items (e.g., "I felt confident in the way I communicated during the conversation with my friend") using five-point Likert scales (1 = *strongly disagree*; 5 = *strongly agree*).

= *strongly agree*). A composite variable was created in which higher scores equate to higher perceived self-presentational confidence (receivers: $M = 4.01$, $SD = 0.55$, $\alpha = .88$; providers: $M = 3.64$, $SD = 0.64$, $\alpha = .89$).

Ease of message production. Support providers responded to ten items previously established to measure support providers' perceived ease of support message production (High, 2011). Participants responded to items (e.g., "I had no problem producing the messages I was trained to provide") using five-point Likert scales (1 = *strongly disagree*; 5 = *strongly agree*). A composite variable was created in which higher scores equate to higher perceived ease of supportive message production ($M = 3.42$, $SD = 0.68$, $\alpha = .86$).

Provider's conversational appropriateness. Support receivers responded to modified items from Canary and Spitzberg's (1987) interpersonal communication competence scale to assess how they perceived their partner's conversational appropriateness during the supportive conversation. Participants responded to 20-items (e.g., "everything my friend was during our conversation was appropriate") using five-point Likert scales (1 = *strongly disagree*; 5 = *strongly agree*). A composite variable was created in which higher scores signify higher quality support ($M = 4.26$, $SD = 0.50$, $\alpha = .91$).

Provider's conversational sensitivity and authenticity. Support receivers were also asked to rate the sensitivity and authenticity of their partners' communication during their conversation. For *sensitivity*, I included two items that have been previously employed (e.g., "my friend communicated in a sensitive manner" and "my friend seemed sensitive;" High, 2011). Participants responded using five-point Likert scales (1 =

strongly disagree; 5 = *strongly agree*). A composite variable was created in which higher scores signify more sensitive support ($M = 3.92$, $SD = 0.89$, $\alpha = .89$). For *authenticity*, I created two items (e.g., “my friend was very genuine during the conversation” and “What my friend said during the conversation seemed very authentic”) that were measured on five-point Likert scales (1 = *strongly disagree*; 5 = *strongly agree*). A composite variable was created in which higher scores signify more authentic support ($M = 4.13$, $SD = 0.70$, $\alpha = .81$).

Emotional improvement. Support receivers responded to five items previously established to measure the extent to which participants experienced emotional change as a result of their supportive conversation (Jones & Wirtz, 2006). Participants responded to items (e.g., “after having talked with my friend, I feel less stressed or upset”) using six-point Likert scales (1 = *strongly disagree*; 6 = *strongly agree*). A composite variable was created in which higher scores represent greater emotional improvement ($M = 4.44$, $SD = 0.90$, $\alpha = .88$).

Cognitive reappraisal. Support receivers responded to five items previously established to measure the extent to which participants experienced facilitated reappraisal as a result of their supportive conversation (Jones & Wirtz, 2006). Participants responded to items (e.g., “after talking with my friend, I feel that I ought to re-evaluate the events I described”) using six-point Likert scales (1 = *strongly disagree*; 6 = *strongly agree*). A composite variable was created in which higher scores represent a greater degree of conversationally facilitated reappraisal ($M = 4.14$, $SD = 0.80$, $\alpha = .70$).

See Table 2 for a summary of the mean, standard deviation, and Cronbach’s alpha reliability of each measured variables in this study.

Rated Measures

Third-party observations of the supportive conversations were also obtained. Four research assistants were trained by the primary researcher to rate the quality level of the video-recorded supportive conversations. Over the course of several meetings, research assistants were educated about the theory of verbal person centered supportive communication. They were also provided with sample messages for all nine levels of the VPC hierarchy and a coding manual that detailed the characteristics of each level (Appendix E). Raters independently reported their evaluation of the quality level of the video-recorded supportive conversation along nine 7-point semantic differential scales that have been previously verified as fundamental to person-centered social support (i.e., self-centered vs. other-centered, invalidates vs. validates, judges vs. empathizes, disregards vs. acknowledges, and unconcerned vs. concerned, not at all supportive vs. extremely supportive, insensitive vs. sensitive, ineffective vs. effective, ignores emotions vs. emotion-focused, High, 2011; Jones & Guerrero, 2001).

All research assistants, along with the primary researcher, collectively rated approximately 10% of the supportive conversations as practice. This was done to clarify any questions raters had, as well as further reiterate coding decision rules and procedures. Once familiar with the coding process, all raters independently evaluated the same 15% of conversations ($n = 37$). The intraclass correlation coefficients were highly reliable across all 9 ratings: message centeredness ($\rho = 0.93$), validation ($\rho = 0.91$), judging ($\rho = 0.93$), acknowledgment ($\rho = 0.92$), concern ($\rho = 0.94$), emotions ($\rho = 0.93$), supportiveness ($\rho = 0.93$), sensitivity ($\rho = 0.94$), and effectiveness ($\rho = 0.94$). These coefficient values indicate that the third-party raters reliably evaluated supportive

conversations. Because all nine items exhibit strong, positively correlations with each other (see Table 3), a composite variable was created with higher scores signifying higher perceived VPC support quality ($M = 3.91$, $SD = 1.95$).

Chapter Five

This chapter details the statistical results of various preliminary and substantive analyses that were used to evaluate the data and test hypotheses and research questions relevant to this project.

Preliminary Analyses

Preliminary analyses were conducted to examine the relationship between relevant study variables (Table 4). Relational satisfaction and closeness were strongly, positively correlated. The two variables were also positively correlated with perceived conversational control, persistence, and editability, presentational confidence, and perceived support quality, whereas they were negatively correlated with synchronicity. The six affordances exhibited strong correlations with one another; whereas bandwidth, social presence, and synchronicity were all positively correlated, conversational control, persistence, and editability were all negatively correlated. Conversational realism, presentational confidence, and perceived support quality were all positively correlated with a support receivers emotional improvement and cognitive reappraisal. Providers ease of message production was also positively related to these same variables.

Next, I correlated support providers' and receivers' reported variables to examine interdependence between their perceptions of their relationship and other relevant study variables (see Table 5). Support providers' and receivers' relational satisfaction and closeness were both positively correlated with one another. Perceived bandwidth, social presence, and synchronicity were positively correlated among support providers and receivers; conversational control, persistence, and editability were also positively correlated. Similarly, conversational realism, presentational confidence, and support

quality were all positively correlated between support providers and receivers.

Interestingly, a receivers perception of persistence and editability was significantly and positively correlated with a providers perception of support quality, but not vice versa.

It is also important to explore how the variables central to this study differ as a function of the grouping variables, specifically supportive role (i.e., provider, receiver), communication channel (i.e., FtF, text messaging, Skype), and level of VPC (i.e., LPC, MPC, HPC). An independent sample *t* tests was conducted with supportive role as the grouping variable. As shown in Table 2, support receivers perceived significantly higher levels of bandwidth, social presence, conversational control, presentational confidence, and support quality, compared to support providers. To examine the influence of communication channel on study variables, a one-way Analysis of Variance (ANOVA) was conducted. Several significant differences between the three levels of communication channel emerged for both support provider and receiver variables (see Table 6). For instance, both receivers and providers perceived the six affordances as significantly different between FtF and text messaging conditions, as well as between text messaging and skype conditions. Differences between FtF and Skype conditions varied by affordances; support receivers perceived bandwidth, social presence, and persistence and significantly different between FtF and Skype, whereas support providers only perceived bandwidth and social presence as significantly different across these same conditions. As for conversational perceptions, support receivers reported higher levels of cognitive reappraisal in the Skype condition compared to the FtF condition. Support providers, on the other hand, reported differences in their ease of message production between FtF and Skype conditions, as well as between text messaging and Skype

conditions. No significant differences emerged for third-party ratings of support quality across the three communication channel conditions. A similar analysis was conducted with VPC as the grouping variable to examine how the study variables differed as a function of the supportive manipulations (see Table 7). Support receivers reported significant differences in their presentational confidence and support quality between LPC and HPC conditions. Similarly, support providers also reported a significant difference in presentational confidence and support quality between LPC and HPC conditions; they also reported significant differences in those same variables across MPC and HPC conditions.

Since this study focused on established relational partners, it was important to examine how relational quality variables (e.g., satisfaction, closeness) differed across the various conditions in the study. I conducted a 2 (role) x 3 (channel) x 3 (VPC) between-subjects Multiple Analysis of Variance (MANOVA) with relational satisfaction and closeness as outcome measures. All three levels of VPC were included in these analyses. Results revealed no main or interaction effects between the grouping variables on relational satisfaction or closeness.

Finally, it is important to examine whether the experimental design of this study and its manipulations influenced participants' perceptions of realism. I conducted a one-sample *t*-test on receiver, provider, and dyad-level realism scores with 3 set as the test value. Results revealed that support receivers ($M = 3.85$, $SD = .70$, $t(245) = 18.76$, $p < .001$), providers ($M = 3.83$, $SD = .65$, $t(245) = 20.13$, $p < .001$), and the dyadic aggregate ($M = 3.84$, $SD = .68$, $t(492) = 27.33$, $p < .001$) realism scores were all significantly above the midpoint of the scale. This indicates that participants perceived their supportive

conversations as realistic. I also conducted a 2 (role) x 3 (channel) x 3 (VPC) between-subjects ANOVA to evaluate provider, receiver, and dyad-level realism. Results revealed no main or interaction effects between the grouping variables on relational satisfaction or closeness. This indicates that participants, regardless of their assigned condition, reported their conversations as relatively realistic.

Substantive Analyses

The remaining analyses focused on the hypotheses and research questions that were specified in Chapter 3. For Hypotheses 1-9, an ANOVA was employed to examine the influence of communication channel on provider and receiver conversational perception/outcome variables. RQ1 was examined through either a univariate ANOVA (RQ1a-b) or MANOVA (RQ1c) analyses. Hypotheses 10-15, as well as RQ 2, were also tested with an ANOVA to examine the influence of communication channel on perceived affordances. Hypotheses 16 and 17 were analyzed using a linear regression model in order to examine how perceived affordances explain variation in support providers' and receivers' variables. Finally, RQ 3 was examined using a linear regression model to analyze the interaction between affordances and level of VPC on providers' and receivers' conversational outcomes. All analyses were conducted through the Statistical Package for the Social Sciences (SPSS).

Hypotheses 1-3 proposed competing predictions regarding which CMC theory best describes the communicative experience and outcomes reported by support receivers. More specifically, H1 predicted that support receivers who engage in supportive conversations via FtF will report higher levels of support quality (H1a), emotional improvement (H1b) and cognitive reappraisal (H1c) compared to

conversations occurring via either text messaging or Skype. Several planned comparison analyses were conducted to test these hypotheses. To construct an orthogonal test, the FtF conditions was assigned a contrast coefficient of +2 to reflect the predictions specified in Hypothesis 1, whereas the text messaging and Skype conditions were assigned a contrast coefficient of -1 each (see Table 8). The contrast test was not significant for either receivers' perceived support quality ($t(243) = -1.13$) or emotional improvement ($t(243) = -1.28$). The contrast test for receivers' cognitive reappraisal was significant, $t(243) = -2.29$, $p < .05$. Contrary to hypothesis H1c, however, post-hoc analyses revealed that participants communicating FtF reported significantly *lower* cognitive reappraisal ($M = 3.98$, $SD = .78$) compared to those in the Skype ($M = 4.27$, $SD = .80$) conditions. The text messaging ($M = 4.18$, $SD = .79$) condition did not significantly differ from either of the other two conditions. Thus, H1a, H1b, and H1c were not supported.

H2 predicted that support receivers who engaged in supportive conversations via Skype will report higher levels of support quality (H2a), emotional improvement (H2b) and cognitive reappraisal (H2c) compared to conversations occurring via text messaging. A second contrast test was constructed to test these hypotheses, with the FtF condition assigned a contrast coefficient of 0, the Skype condition assigned +1, and the text-messaging condition receiving -1 (see table 8). The contrast test was not significant for any of the three outcome variables, namely a receivers' perceived support quality ($t(243) = .27$), emotional improvement ($t(243) = .61$), or cognitive reappraisal ($t(243) = .70$). Thus, H2a, H2b, and H2c were not supported.

H3 predicted that support receivers who engaged in supportive conversations via either text messaging or Skype will report higher levels of support quality (H3a),

emotional improvement (H3b) and cognitive reappraisal (H3c) compared to those communicating FtF. A third contrast analysis was constructed; FtF was assigned a contrast coefficient of -2, and the text messaging and Skype conditions both received a contrast coefficient of +1. Whereas the contrast test was not significant for receivers' perceived support quality or emotional improvement, it was for cognitive reappraisal. Post-hoc analyses showed that those in the Skype condition reported significantly greater cognitive reappraisal than those in the FtF condition; there were no differences between the text messaging condition and either of the other two conditions. Thus, H3a and H3b were not supported, whereas H3c was supported for cognitive reappraisal.

Hypotheses 4-6 proposed competing predictions regarding which CMC theory best describes the communicative experience and outcomes reported by support providers. H4 predicted that support providers who engage in supportive conversations FtF will report higher levels of support quality (H4a) and ease of message production (H4b) compared to conversations occurring via either text messaging or Skype. Identical contrast tests were constructed to those used to test H1, but the dependent variables were changed to those relevant for support providers (e.g., perceived support quality, ease of message production; see table 8). Results showed that none of the contrast test for providers' perceived support quality ($t(243) = 1.30$) or ease of message production were significant ($t(243) = .56$). Thus, neither H4a or H4b were supported.

H5 predicted that support providers who engage in supportive conversations via Skype would report higher levels of support quality (H5a) and ease of message production (H5b) compared to conversations occurring text messaging. The contrasts test for providers' perceived support quality was not significant, whereas it was significant

for ease of message production, $t(243) = 3.93, p < .001$. Contradictory to what was hypothesized, however, post-hoc analyses revealed that those in the Skype condition reported significantly lower ease of message production ($M = 3.20, SD = .72$) compared to those in the text messaging condition ($M = 3.60, SD = .62$). Although not hypothesized, post-hoc analyses also revealed a significant difference between Skype and FtF ($M = 3.45, SD = .65$; pairwise comparison $p < .05$); FtF and text messaging did not significantly differ. Thus, neither H5a or H5b were supported.

H6 predicted that support receivers who engaged in supportive conversations via either text messaging or Skype would report higher levels of support quality (H6a) and ease of message production (H6b) compared to those communicating FtF. Again, these hypotheses were analyzed using contrast analyses (see Table 8). Results showed that neither the contrast test for providers' perceived support quality ($t(243) = -1.30$) nor ease of message production ($t(243) = -.56$) were significant. Thus, H6a and H6b were not supported.

Hypotheses 7-9 proposed competing predictions regarding which CMC theory best describes third-party perceptions of supportive interactions. H7 predicted that third-party raters of FtF supportive conversations will perceive the conversation as higher quality compared to conversations occurring via text messaging or Skype. Three contrasts analyses were constructed in-line with the different theoretical approaches to CMC (see Table 8). None of the contrasts test were significant, however. Thus, H7-9 were not supported.

RQ1 questioned how communication channel and level of VPC might interact in ways that influence receivers' (RQ1a), providers' (RQ1b), or third-party observers'

conversational perceptions. To answer these questions, several 3 (communication channel) x 3 (level of VPC) MANOVA models were created with variables relevant for either support receivers, providers, or third-party raters. For RQ1a, a 3 x 3 MANOVA was constructed with receivers' perceived support quality, emotional improvement, and cognitive reappraisal as the dependent variables. Whereas the multivariate effect was not significant for communication channel ($F(6, 472) = .99, ns$), it was significant for level of VPC, $F(6, 470) = 2.35, p < .05$, partial $\eta^2 = .03$. Univariate tests showed that there was a significant difference across the level of VPC on support receiver's perception of support quality, $F(2, 237) = 4.37, p < .01$, partial $\eta^2 = .04$. Post-hoc analyses revealed a significant difference in support receivers' perceptions of support quality between LPC ($M = 3.79, SD = .79$) and HPC ($M = 4.08, SD = .51$) conversations. The interaction between communication channel and level of VPC was not significant, $F(12, 622) = 1.00, ns$.

RQ1b posited how communication channel and level of VPC may interact to influence support providers' perception of supportive conversations. A 3 x 3 MANOVA model was constructed with providers' perceived support quality and ease of message production as the dependent variables. The multivariate effects were significant for both communication channel ($F(4, 472) = 3.87, p < .01$, partial $\eta^2 = .03$) and level of VPC ($F(4, 472) = 8.74, p < .001$, partial $\eta^2 = .07$). Univariate tests showed there was a significant difference across communication channels on support provider's ease of message production, $F(2, 237) = 7.68, p < .001$, partial $\eta^2 = .06$. Univariate tests also showed there was a significant difference across the levels of VPC on support provider's perception of support quality, $F(2, 237) = 15.52, p < .001$, partial $\eta^2 = .12$. Post-hoc analyses revealed a significant difference in support providers ease of message production between Skype (M

= 3.20, $SD = .72$) and both FtF ($M = 3.45$, $SD = .65$) and text messaging ($M = 3.60$, $SD = .62$). FtF and text messaging conditions did not significantly differ. Post-hoc analyses also revealed a significant difference in support providers perception of support quality between HPC conversations ($M = 3.91$, $SD = .59$) compared to both LPC ($M = 3.28$, $SD = .89$) and MPC conversations ($M = 3.49$, $SD = .69$). LPC and MPC conversations did not significantly differ from one another. The interact between communication channel and level of VPC was not significant, however, $F(8, 472) = 39$, *ns*.

RQ1c regarded the interaction between communication channel and VPC on third-party observations of supportive conversations. A 3x3 univariate ANOVA model was constructed with third-party ratings of support quality as the dependent variable. The main effect for communication channel was not significant, $F(2, 243) = 1.78$, *ns*. Conversely, though, the main effect for level of VPC was significant ($F(2, 243) = 206.43$, $p < .001$, partial $\eta^2 = .31$), as was the interaction effect between communication channel and level of VPC ($F(2, 243) = 12.06$, $p < .001$, partial $\eta^2 = .10$). Post-hoc analyses were conducted to unpack the interaction between communication channel and level of VPC on third-party perceptions of support quality. Results showed that raters observing LPC conversations perceived Skype-based conversations as significantly higher in support quality ($M = 2.01$, $SD = .98$) compared to conversations occurring FtF ($M = 1.56$, $SD = .54$) or via text messaging ($M = 1.57$, $SD = .55$). For MPC conversations, third-party raters perceived text-messaging conversations as significantly higher in support quality ($M = 4.18$, $SD = .64$) compared to conversations occurring FtF ($M = 3.82$, $SD = .64$) or via Skype ($M = 3.92$, $SD = .63$). Finally, for HPC conversations, observing skype-based conversations resulted in significantly lower third-party perceptions of support quality (M

= 5.83, $SD = .59$) compared to both FtF ($M = 6.23$, $SD = .39$) or text-messaging ($M = 6.26$, $SD = .35$) conversations.

Hypotheses 10-15 proposed several predictions regarding the effect of communication channel on perceived affordances. To examine these predictions, a one-way ANOVA was constructed with communication channel as the grouping variable and the six perceived affordances as the dependent variables. H10 predicted that bandwidth would be perceived as significantly higher in FtF conversations compared to those occurring via Skype (H10a), and that Skype-based conversations would be perceived as significantly higher in bandwidth than when communicating via text messaging (H10b). Results revealed a significant main effect of communication channel on perceived bandwidth, $F(2, 489) = 140.43$, $p < .001$. Post-hoc analyses revealed that perceived bandwidth varied significantly across all three communication channels; FtF conversations were perceived as higher in bandwidth ($M = 6.21$, $SD = 1.05$) compared to Skype-based conversations ($M = 5.73$, $SD = 1.08$), and skype conversation were perceived as higher in bandwidth than those occurring via text messaging ($M = 4.21$, $SD = 1.26$). Thus, both H10a and H10b were supported.

H11 predicted that social presence would be perceived as significantly higher in FtF conversations compared to those occurring via Skype (H11a), and that Skype-based conversations are perceived as significantly higher in social presence than when communicating via text messaging (H11b). Results revealed a significant main effect of communication channel on perceived bandwidth, $F(2, 489) = 219.27$, $p < .001$. Post hoc analyses revealed that perceived social presence varied significantly across all three communication channels; FtF conversations were perceived as higher in social presence

($M = 6.26$, $SD = .91$) compared to Skype-based conversations ($M = 5.16$, $SD = 1.26$), and skype conversation were perceived as higher in social presence than those occurring via text messaging ($M = 3.65$, $SD = 1.22$). Thus, both H11a and H11b were supported.

H12 predicted that synchronicity would be perceived as significantly higher in FtF conversations compared to those occurring via Skype (H12a), and that Skype-based conversations would be perceived as significantly higher in synchronicity than when communicating via text messaging (H12b). Results revealed a significant main effect of communication channel on perceived synchronicity, $F(2, 489) = 208.99$, $p < .001$. Post hoc analyses revealed that FtF ($M = 4.60$, $SD = 1.46$) and Skype-based conversations ($M = 4.52$, $SD = 1.46$) were perceived as significantly higher in synchronicity compared to text-messaging conversations ($M = 2.10$, $SD = .77$); FtF and Skype-based conversations did not significantly differ. Therefore, H12a was not supported, whereas H12b was supported.

H13 predicted that conversational control would be perceived as significantly higher in text-messaging conversations compared to those occurring via Skype (H13a), and that Skype-based conversations are perceived as significantly higher in conversational control than when communicating FtF (H13b). Results revealed a significant main effect of communication channel on perceived conversational control, $F(2, 489) = 34.79$, $p < .001$. Post-hoc analyses revealed that perceived conversational control varied significantly across all three communication channels; text messaging conversations were perceived as higher in conversational control ($M = 5.86$, $SD = .70$) compared to Skype-based conversations ($M = 5.30$, $SD = .93$), and Skype conversation

were perceived as higher in conversational control than those occurring FtF ($M = 5.08$, $SD = .99$). Thus, both H13a and H13b were supported.

H14 predicted that persistence would be perceived as significantly higher in text-messaging conversations compared to those occurring via Skype (H14a), and that Skype-based conversations are perceived as significantly higher in persistence than when communicating FtF (H14b). Results revealed a significant main effect of communication channel on perceived persistence, $F(2, 489) = 270.36$, $p < .001$. Post-hoc analyses revealed that perceived persistence varied significantly across all three communication channels; text messaging conversations were perceived as higher in persistence ($M = 6.26$, $SD = .63$) compared to Skype-based conversations ($M = 3.58$, $SD = 1.56$), and skype conversation were perceived as higher in persistence than those occurring FtF ($M = 3.11$, $SD = 1.61$). Thus, both H14a and H14b were supported.

H15 predicted that editability would be perceived as significantly higher in text-messaging conversations compared to those occurring via Skype (H15a), and that Skype-based conversations are perceived as significantly higher in editability than when communicating FtF (H15b). Results revealed a significant main effect of communication channel on perceived editability, $F(2, 489) = 333.32$, $p < .001$. Post hoc analyses revealed that FtF ($M = 2.67$, $SD = 1.54$) and Skype-based conversations ($M = 2.49$, $SD = 1.38$) were perceived as significantly lower in editability compared to text-messaging conversations ($M = 5.81$, $SD = .99$); FtF and Skype-based conversations did not significantly differ. Therefore, H15a was supported whereas H15b was not supported.

RQ2 asked whether the predictions specified in Hypotheses 10-15 differ between support providers and support receivers. To examine this, a 3 (communication channel) x

2 (supportive role) MANOVA model was created with the six perceived affordances as the dependent variables. The multivariate effects were significant for both communication channel ($F(12, 962) = 75.41, p < .001, \text{partial } \eta^2 = .49$) and supportive role ($F(6, 481) = 2.53, p < .05, \text{partial } \eta^2 = .03$) on perceived affordances. Univariate tests showed there was a significant difference between support providers' and receivers' perceptions of social presence ($F(1, 486) = 6.63, p < .01, \text{partial } \eta^2 = .01$) and conversational control ($F(1, 486) = 3.89, p < .05, \text{partial } \eta^2 = .01$); support receivers perceive social presence ($M = 5.15, SD = 1.50$) and conversational control ($M = 5.50, SD = .84$) as significantly higher than support providers (social presence: $M = 4.88, SD = 1.62$; conversational control: $M = 5.34, SD = 1.03$). These effects, however, were influenced by a significant interaction between communication channel and supportive role, $F(12, 962) = 2.05, p < .05, \text{partial } \eta^2 = .03$. Several pairwise comparisons were conducted to investigate differences between support receivers' and providers' perceived affordances across the three communication channel. Results showed that support receivers communicating via text messaging perceived social presence as significantly higher ($M = 3.91, SD = 1.19$) than support providers ($M = 3.40, SD = 1.20$; pairwise comparison $p < .001$). Additionally, support receivers communicating FtF perceived conversational control as significantly higher ($M = 5.24, SD = .90$) than support providers ($M = 4.91, SD = 1.06$; pairwise comparison $p < .01$). Finally, support receivers communicating via Skype perceived persistence as significantly higher ($M = 3.81, SD = 1.48$) than support providers ($M = 3.35, SD = 1.61$; pairwise comparison $p < .05$). Thus, several differences emerged regarding how support providers and receivers perceive affordances as a function of communication channel.

Hypotheses 16 and 17 specified how the perceived affordances predicted conversational outcomes for both support receivers and providers. Because perceived affordances are a continuous variable, regression analyses were conducted to examine how affordances predicted conversational experiences. In particular, H16 argued that perceived bandwidth, social presence, conversational control, synchronicity, persistence, and editability were all positively associated with a support receiver perception of support quality (H16a), as well as their reported emotional improvement (H16b) and cognitive reappraisal (H16c). Three regression models were created, with the three variables of interest as the dependent variable in each regression model. As shown in Table 9, results revealed that perceived social presence ($\beta = .24, p < .05$) and persistence ($\beta = .30, p < .01$) significantly predicted a support receivers perceived support quality. Perceived social presence ($\beta = .22, p < .05$), synchronicity ($\beta = .31, p < .01$), persistence ($\beta = .28, p < .01$), and editability ($\beta = .24, p < .01$) also significantly in predicted support receivers' emotional improvement. Finally, social presence ($\beta = .22, p < .05$) and persistence ($\beta = .36, p < .001$) significantly predicted support receiver's cognitive reappraisal. Thus, H16a-c were partially supported.

H17 predicted that perceived bandwidth, social presence, synchronicity, and persistence would be negatively associated with support providers' perceptions of support quality (H17a) and ease of message production (H17b), whereas perceived conversational control and editability would be positively associated with perceptions of support quality (H17c) and ease of message production (H17d). Similarly to the procedure described above, two regression models were created and used to analyze the data. As shown in Table 9, results revealed that perceived social presence ($\beta = .31, p < .001$) significantly

predicted a support providers perceived support quality. Additionally, bandwidth ($\beta = .25, p < .01$) and editability ($\beta = .53, p < .001$) significantly predicted ease of message production. Thus, H17a and H17d received partial support, whereas H17b and H17c were not supported.

RQ3 questioned how perceived affordances and VPC may interact in ways that influence support receivers' (RQ3a) and providers' (RQ3b) conversational perceptions and/or outcomes. Regression analyses were conducted to analyze how perceived affordances and level of VPC interaction to influence conversational perceptions/outcomes. VPC is an ordinal variable. Because interaction terms needed to be created for inclusion in the regression model, all variables were mean-centered and the mean-centered variable was used to create the interaction terms. Hierarchical regression analyses were used to examine if the interaction variables accounted for significant variation in the dependent variables after accounting for possible main effects. Bandwidth, social presence, synchronicity, conversational control, persistence, editability, and VPC were all included as predictor variables in the first step of the regression model using the forced-entry selection method, and all interaction terms were included in the second step of the regression models using the stepwise selection method.

RQ3a focused specifically on whether and how VPC and perceived affordance interact to influence support receivers conversational perceptions and outcomes. A regression model was constructed with the predictor variables specified above and receivers' self-presentational confidence as the dependent variable. The best-fitting model contained 10 variables – the seven predictors and three interaction terms – and produced an $R^2 = .21, F(10, 235) = 7.56, p < .001$ (see Table 10). Results revealed a

significant interaction between perceived bandwidth and persistence ($\beta = -.28, p < .001$). As shown in Figure 1, persistence moderates the relationship between perceived bandwidth and self-presentational confidence, such that at low levels of persistence the association between bandwidth and self-presentational confidence is far stronger ($r = .52$) than at high levels of persistence ($r = .20$). There was also a significant interaction between synchronicity and editability ($\beta = -.28, p < .001$). Finally, a significant interaction between bandwidth and VPC emerged ($\beta = -.12, p < .001$). As shown in Figure 2, VPC moderated the relationship between perceived bandwidth and self-presentational confidence such that the association between bandwidth and self-presentational confidence becomes weaker as VPC increases (LPC: $r = .43$; MPC: $r = .26$; HPC: $r = .19$).

To explore this question in regards to a support receivers' perceived support quality, a similar regression model was constructed to the one described above, but included support quality as the dependent variable. The best-fitting model contained 9 variables – the seven predictors and two interaction terms – and produced an $R^2 = .17$, $F(9, 236) = 6.48, p < .001$ (see table 11). Results revealed a significant interaction between perceived bandwidth and persistence ($\beta = -.21, p < .001$). As shown in Figure 3, at low level of persistence the association between bandwidth and self-presentational confidence is moderate ($r = .43$), whereas the relationship becomes very weak at high levels of persistence ($r = .11$). There was also a significant interaction between social presence and persistence ($\beta = .26, p < .01$), such that the association between perceived social presence and support quality is stronger at lower levels of persistence ($r = .29$) compared to higher levels ($r = .19$).

Similarly, a regression model was constructed with the predictor variables specified above and a receivers' emotional improvement as the dependent variable. The best-fitting regression model had 8 predictors – the seven predictors and one interaction term - and produced $R^2 = .13$, $F(8, 237) = 5.33$, $p < .001$ (see Table 12). Results revealed a significant interaction between perceived bandwidth and persistence ($\beta = -.21$, $p < .01$). As shown in Figure 4, persistence moderated the relationship between perceived bandwidth and self-presentational confidence, such that at low level of persistence the association between bandwidth and self-presentational confidence is far stronger ($r = .43$) than at high levels of persistence ($r = .11$).

Finally, a regression model was constructed with the predictor variables specified above and a receivers' facilitated reappraisal as the dependent variable. The best fitting regression model had 10 predictors – the seven predictors and one interaction term - and produced $R^2 = .08$, $F(10, 235) = 3.09$, $p < .001$ (see Table 13). Results revealed a significant interaction between bandwidth and VPC ($\beta = -.12$, $p < .01$). As shown in Figure 5, the relationship between bandwidth and cognitive reappraisal nearly vanishes at higher levels of VPC (MPC: $r = .08$; HPC: $r = .07$) compared to LPC support ($r = .20$).

RQ3b examined if and how VPC and perceived affordance interacted to influence support providers' conversational perceptions and outcomes. Three regression models were constructed with the predictor variables specified above and each of the three outcome variables of interest (i.e., self-presentational confidence, perceived support quality, ease of message production) as the dependent variable in each model. The best-fitting multiple regression model for all three of the dependent variables included only the 7 predictor variables and no interaction variables. The regression model for self-

presentational confidence produced an adjusted $R^2 = .22$, $F(7, 238) = 10.82$, $p < .001$. The regression model for perceived support quality produced an adjusted $R^2 = .24$, $F(7, 238) = 12.17$, $p < .001$. Finally, the regression model for ease of message production produced an adjusted $R^2 = .13$, $F(7, 238) = 6.15$, $p < .001$. Thus, no interactions were statistically significant between affordances and VPC for any of the support provider conversational perception variables.

Chapter Six

The purpose of this project was to acquire a more nuanced and ecologically valid understanding how established relational partners, particularly friends, engage in supportive communication via different communication modalities. An affordance-based framework was used to explore whether and how different communication modalities, and their perceived action possibilities, shape the communicative experiences and outcomes reported by support receivers' and providers' following a one-on-one supportive conversations with a friend. This chapter reviews the core findings of the project (for a summary of study hypotheses and outcomes, see Table 1), and several implications for computer-mediated, verbal person-centered supportive communication are discussed.

Competing Theories, Competing Predictions

A goal of this dissertation was to explore which theory of CMC best explains the process of computer-mediated verbal person-centered supportive communication. VPC regards the level to which an individual acknowledges, elaborates, and legitimizes the feelings of a distressed other (Burlleson, 1994; Bodie et al., 2011). Although VPC is primarily explored in the context of FtF communication, some research suggests that the context of communication influences the effects of VPC messages. In fact, Burlleson (2009) identified context as one of the strongest moderators on how support recipients receive and process VPC messages. The current project acknowledges the influence of context of VPC supportive interactions and moves toward a theoretically-based conceptualization of computer-mediated verbal person-centered support.

The first set of hypotheses for this project examined Social Presence Theory, Media Richness Theory, Social Information Processing Theory, and the hyperpersonal perspective of CMC in relation to verbal person-centered supportive conversations between friends via FtF, text messaging, or Skype (Hypotheses 1-9). Social Presence Theory identifies FtF communication as the gold standard, suggesting that supportive interactions through any CM modality, regardless of their support quality, should result in less positive experiences and outcomes than communicating FtF. Media Richness Theory, on the other hand, suggests that channels which allow for the transmission of more social cues should be more effective for communicating complex content, such as VPC support, compared to channels allowing for less social cue transmission. As per Social Information Processing Theory, FtF and CM communication contexts should be similarly effective for supportive interactions. Finally, the hyperpersonal perspective argues that CMC should *more* effectively enable supportive interactions than FtF contexts. To examine which theory most effectively explains CM supportive interactions, supportive communication was analyzed from three different perspectives, including 1) the support receiver, 2) the support provider, and 3) a third-party observer's perception of the supportive conversation. Walther (2009) called for more clearly explicated boundary conditions for CMC theories developed prior to the development of modern communication technologies. This study embraces this challenge and provides a more sophisticated understanding of whether and how CMC theories apply to computer-mediated supportive communication.

Regarding the support receiver, no significant differences emerged in their perception of support quality or reported emotional improvement across the three

communication modalities explored in this study, namely FtF, text messaging, and Skype. This offers support for Social Information Processing Theory, which asserts that CM and non-CM channels should result in similar conversational outcomes. Support receivers *did* report higher levels of cognitive reappraisal when communicating via Skype compared to FtF, which offers some support for the hyperpersonal perspective of CMC. Taken together, this suggests that no single CMC theory universally explains a support receiver's experiences when engaging in computer-mediated supportive conversations with friends. Rather, some theories may more or less explain CM users' communicative experiences depending on the specific processes/outcome being examined. For instance, particularly among established relational partners, retrospective reports of *perceived* support quality may be influenced by the nature of the relationship itself (e.g., positive, friendly) rather than accurately reflective of the conversation's support quality. Offering some support for this argument, Rini et al. (2006) highlighted the positive association between relational satisfaction and perceptions of support effectiveness. This suggests that, when established relational partners engage in supportive interactions, perceptions of support function more as a reflection of the relationship between communicators than other factors, such as communication channel. Thus, Social Information Processing Theory may be an appropriate theoretical lens through which to understand support receivers conversational perceptions of supportive conversations with friends.

Cognitive reappraisal, however, may more easily occur via CM modalities due to a receiver's increased cognitive processing capacity. Past research identifies that CM venues enable increased message scrutinization due to the "reallocation of cognitive resources from environmental scanning and nonverbal management" toward more central

processes. (Walther, 2007, p. 2541). As Rains and colleagues explain, “the potential to allocate greater attentional resources in CMC relative to face-to-face interaction may serve to heighten one’s attention to a stressor and, in turn, motivation to process a support message” (p. 557). This study offers support for these claims, as receivers interacting via Skype reported significantly higher cognitive reappraisal than those communicating FtF. This also suggests that the hyperpersonal perspective of CMC may best explain cognitive-based processes of CM supportive communication between friends. Ultimately, Social Information Processing Theory may accurately represent conversational perceptions, whereas hyperpersonal communication may accurately represent cognitive processes of CM supportive communication among friends.

For support providers, no significant differences emerged in their perception of support quality across FtF, text messaging, or Skype. Similar to support receivers, certain communication channels do not benefit a support provider’s perception of a conversation’s support quality. This also offers support for Social Information Processing Theory. The fundamental argument of SIP Theory is that communicators adjust to modalities lacking in social cues by exchanging more intimate written and/or verbal information. Thus, these findings suggest that supportive communicators interacting via CM channels incorporate more intimate content in their exchange in order to supplement the lacking nonverbal/social cues. Specifically whether and/or how support providers make-up for these lacking cues are important questions that warrant further research.

Regarding ease of message production, providers communicating FtF reported a greater ease of message production than those communicating via Skype. This is in line with Social Presence Theory, which argues that FtF interactions are the gold-standard for

communication. This finding is surprising considering the functional similarities between video-conferencing software and face-to-face communication. Because there was no difference in message production ease between FtF and text messaging channels, these results indicate that CM video/audio-based modalities present unique disadvantages for VPC support providers in particular. One explanation may lie in the main difference between FtF and Skype-based conversations: Communicators are not in the *physical* presence of one another. It may be that synchronously providing supportive messages becomes more difficult when removed from the physical context of the supportive environment. Supportive communication scholars frequently identify the importance of cultivating a supportive environment to facilitate effective VPC supportive interactions (Burlison & Goldsmith, 1998; Jones & Guerrero, 2001; MacGeorge et al., 2011).

Perhaps the physical separation between communicators that occurs when interacting via Skype creates a rift in the supportive climate that disadvantages support providers and their ease of message production. Again, however, how and/or why physical separation increases the difficulty of producing VPC messages deserves further research attention.

Finally, regarding third-party observers' ratings of conversational supportiveness, no significant differences emerged across FtF, text messaging, or Skype. This adds additional support to a Social Information Processing Theory approach to CM supportive interactions and is particularly noteworthy because the question is approached from a unique perspective that is often left unexplored: an unbiased, third-party. Evaluating support receiver's or provider's retrospective perceptions of supportive interactions is biased due to their direct involvement in the interaction. Third-party observers, though, can offer their unbiased perspectives as a measure of the supportive quality of an

interaction. In fact, Bodie and colleagues identified that one's perspective (e.g., provider, receiver, third-party) shapes their evaluation of enacted support (Bodie, Jones, Vickery, Hatcher, & Cannava, 2014). As ratings of support quality did not significantly differ across the three communication channels, this study suggests that Social Information Processing Theory best explains CM conversations between friends. This finding, in turn, adds further support to the core tenet of Social Information Processing Theory, which holds that CM communicators adjust to lacking cues through more intimate exchanges.

Although no one theory universally explains computer-mediated, verbal person-centered supportive communication, results from Hypotheses 1-9 provide the most support for Social Information Processing Theory. In fact, support receivers, providers, and third-party observers each reported equivalent levels of perceived support quality across the three communication channels. This indicates that, at least regarding perceptions of support quality following supportive conversations with friends, the decreased social cues of CM channels do not inherently advantage or disadvantage supportive communicators. Rather, users are able to supplement communication via lean channels with more rich and intimate information that results in equivalent conversational outcomes both between CM modalities as well as across CM and non-CM communication channel. Regarding other outcome variables, such as a receiver's reported cognitive reappraisal, results suggest a different story. For instance, Skype resulted in significantly higher levels of cognitive reappraisal compared to other channels, suggesting hyperpersonal communication. Taken together, this suggests that different theoretical perspectives of CMC may be more or less appropriate depending on the conversational outcomes being evaluated.

I also examined whether and how communication channel and level of VPC interact in ways that influence receivers', providers', or third-party observers' conversational perceptions (Research Question 1). Previous research indicates that communication channel differently influences conversational outcomes as a function of VPC. For instance, High (2011) reported that third-party observers of supportive communication perceived HPC conversations as more supportive via instant messaging compared to FtF. Similarly, Media Richness Theory argues that the equivocality of a message dictates whether rich or lean CM channels will be effective (Daft & Lengel, 1984; Daft et al., 1987). Thus, HPC messages, which are highly equivocal in nature, may better benefit from rich channels (e.g., FtF, Skype), whereas LPC messages may be successfully communicated via lean CM channels (e.g., text messaging). Results showed that the interaction between communication channel and VPC was not significant for support providers or receivers, whereas there was a significant interaction for third-party observations. More specifically, third-party observers reported LPC conversations via Skype as significantly higher in support quality than FtF or text-messaging channels. Interestingly, results are the opposite for HPC conversations; third-party observers reported HPC conversations via Skype as significantly lower in support quality compared to other FtF or text-messaging channels. Thus, in the eyes of third-party observers, video-/audio-based channels appear to present unique advantages for LPC supportive conversations while simultaneously disadvantaging HPC interactions. It may be that the physical separation between communicators proves particularly beneficial for third-party ratings of LPC support, such that the distance cushions the negativity inherent to low-quality support. Conversely, synchronously communicating HPC support in contexts

devoid of another's physical presence seem to decrease third-party evaluations of high-quality support. Taken together, these results add further complexity to current understanding of CM VPC support in particular; not only do CMC theories differently explain communicators experiences as a function of communication channel or ones' role within a supportive interaction, but the quality-level of a supportive interaction is an essential factor to consider when explicating processes and outcomes of computer-mediated supportive communication.

Perceived Affordances and Communication

Affordances are the action possibilities of an object or environment (Gibson, 1979). For instance, text messaging enables users more time to construct and/or respond to messages compared to video-/audio-based channels (e.g., FtF, Skype); synchronicity, then, is higher for communication via text messaging compared to Skype. Fully explicating CMC necessitates an understanding of affordances because they structure normative practices of CM interactions (High & Solomon, 2011). This project focused specifically on *perceived* affordances, because technological affordances should be conceptualized as emerging through the relationship between communication technologies and their users. As per Hogan (2009), affordances are “the perceptual cues that connote aspects of social structure to individuals thereby creating a functional difference for the individual” (p. 27). In other words, affordances are a function of the relationship between users and communication technologies, and this project is one of the first empirical tests of perceived affordances in the context of several communication technologies.

Although some CMC researchers identify FtF communication as the gold standard (see Turkle, 2015), an affordance-based approach suggests that no channel is inherently better than the other. Rather, each channel possesses distinct characteristics that positively and/or negatively impact communication therein. As Fox and McEwan (2017) argue, “[i]t may also help overcome long-held biases against certain channels, such as assuming that ‘lean’ media like texting are inherently [...] insufficient for conveying emotion” (p. 313). Accordingly, a set of hypotheses for this project was devoted to examine what affordances users perceive are available when communicating through various communication channels (Hypotheses 10-15). In particular, perceptions of six distinct affordances were evaluated, namely bandwidth, social presence, synchronicity, conversational control, persistence, and editability. In support with what was hypothesized, affordances related to the transmission of information (e.g., bandwidth, social presence, and synchronicity) were perceived as significantly higher for FtF than for text messaging. Additionally, both bandwidth and social presence were significantly different across the three channels; FtF was perceived as highest, followed by Skype and text messaging. Also in-line with what was hypothesized, affordances related to interaction control and message permanence (e.g., conversational control, editability, persistence) were perceived as significantly higher when communicating via text messaging compared to FtF. Further, conversational control and persistence significantly differed across the three communication channels; text messaging was perceived as highest, followed by Skype, and finally FtF communication.

Evaluating how users perceive affordances differently across distinct communication channels presents important insight regarding FtF and CM

communication. Initially, these findings identify concrete, variable-centered differences between communication modalities that are rooted in user experiences. Scholars have been calling for a variable-centered understanding of computer-mediated communication for decades (e.g., Nass & Mason, 1990; Walther, Gay, Hancock, 2005), and this study is one of the first to take on this challenge. Results of my project suggest that FtF interactions were perceived as 1) containing a greater number of social cue transmissions, 2) facilitating a greater sense of social presence between communicators, and 3) including decreased response latencies compared to more lean channels. Conversely, text messaging was perceived as 1) enabling greater conversational control, 2) higher in message permanence, and 3) allowing for increased message editability compared to richer channels.

This work also helps distinguish FtF communication from CM video-/audio-based channels. Functionally, communicating either FtF or via Skype should be similar: communication occurs synchronously, exchanges contain a high level of social and nonverbal cues, messages are ephemeral. Experientially, however, results from this project identify key differences. For instance, results showed that FtF communication tends to be perceived as both significantly higher in bandwidth and social presence and significantly lower in conversational control and persistence compared to Skype-based interactions. Therefore, despite the functional similarities between FtF and Skype-based interactions, they differ significantly in various ways. This presents important implications for communicators. For example, interactants who value the exchange of social and/or nonverbal cues may benefit from communicating FtF, whereas those who prefer control over an interaction should communicate via Skype. Ultimately, FtF and

Skype-based interactions appear to be distinct in several important ways that shape communicators' perceptions of affordances therein.

A key contribution of these findings regards the examination of synchronicity as a meaningful affordance for communicators. Upon conceptualizing the Perceived Social Affordances of Communication Channels Scale, Fox and McEwan (2017) reported that synchronicity failed to emerge as a unique affordance, and cautioned researchers against measuring synchronicity in-relation to other technological affordances. They also solicited further conceptualization of synchronicity by evaluating whether and how it functions as a distinct affordance of importance for communicators. As shown in this study, results from Confirmatory Factor Analyses examining the unidimensionality of synchronicity items within the affordance scale showed that models for both support receivers. This adds empirical support for the importance of synchronicity as a unique and meaningful affordance. Additionally, this project further conceptualizes synchronicity by examining it both in relation to other affordances and across several communication channels.

Considering the results reported here in relation to findings from similar research offers further insight into the importance of *perceived* affordances. For instance, Fox & McEwan (2017) reported significant differences in perceived editability between FtF and Skype channels; this study, however, reported no significant difference between these two channels. This difference alone highlights the importance of examining affordances as a function of user perceptions rather than a technologically-inherent feature. Further, it underscores a need for future research to examine what factors influence the perception of affordances. Research indicates that the different interaction goals people have

influence their perceived affordances (Leonardi, 2011). Yet, how specific communicative factors influence perceived affordances remains relatively unexplored.

Perceived Affordances and a Supportive Communicators' Role. As explained, an important question that arises when studying perceived affordances regards what factors influence these perceptions. Several studies show that people's perceptions of channels vary (Carlson and Zmud, 1999, D'Urso & Rains, 2008, Ruppel, 2015), yet research identifying how and in what ways specific factors predict perceived affordances is limited. To address this lacuna, the present study examined the influence of a communicators' *role* within a conversation on their perceived affordances. Applied to the context of supportive communication, this study examined whether support providers and receivers perceive different action possibilities available to them in FtF, text messaging, and/or Skype-based interactions as a function of their role within the supportive interaction (Research Question 2).

Results highlighted several significant differences between support providers' and receivers' perceived affordances; support receiver's perceived social presence and conversational control as significantly higher than providers. More specifically, support receivers communicating via text messaging perceived social presence as significantly higher than provider's, whereas receivers communicating FtF perceived conversational control as significantly higher than providers. Additionally, support receivers communicating via Skype perceived higher levels of persistence compared to support providers. Taken together, these results offer preliminary insight into the influence of a supportive communicators' role within a conversation on the action possibilities they perceive available to them in the context of various communication modalities. For

instance, effective supportive interactions necessitate that support receiver's both seek support from others (Barbee & Cunningham, 1995) and scrutinize supportive messages (Bodie & Burleson, 2008). Support providers, on the other hand, are often driven by the motivations to identify a distressed others' supportive need (Verhofstadt et al., 2008) and construct/produce complex supportive messages (Burleson, 1982, 1983, 1985). Thus, supportive communicators have different conversational goals as a function of their role within a supportive interaction, and these differences may explain discrepancies between support receivers' and providers' perceptions of affordances.

Consider, for instance, the significant difference between receivers' and providers' perceived social presence when communicating via text messaging. Although text-based channels are often assumed to universally diminish feelings of closeness and connectedness between interactants (Turkle, 2015), this study indicates that one's role within a supportive conversation predicts the extent to which they perceive others as socially present. One possible explanation comes from examining the nature of supportive communication itself. Support receivers are inherently at the mercy of providers, such that they are relying on others to help them through times of difficulty and stress. Thus, a receiver's perceived social presence may be less influenced by the lack of social cues when communicating via text messaging *because* of the interdependent nature of the interaction, such that depending on another person naturally increases their salience. Conversely, a support providers' perceived social presence may be more strongly shaped by the decreased social cues of text messaging due to their role; perhaps the cognitive demands of constructing/producing sophisticated supportive

messages decrease a providers' awareness of another's social presence, particularly in contexts of diminished social cues.

Overall, this set of findings emphasize the importance of examining *perceived* affordances, as perceptions differed both across channels and between communicators. Additionally, this work suggests that ones' role within a supportive interaction influences their perceptions of affordances, which is a step toward understanding what factors influence these perceptions. However, future research is necessary to better clarify *why* support receivers and providers form different perceptions of affordances. For instance, I posited that a receivers' and providers' underlying conversational goals influence perceived affordances, but empirical support for these claims is needed. Ultimately, further research must continue to identify whether and how factors inherent to supportive communication influence perceptions of affordances.

Perceived Affordances and Supportive Communication Outcomes

Another goal of this project was to examine whether and how perceived affordances influence the outcomes support receivers' and providers' experience upon engaging in verbal person-centered supportive conversations with friends. Despite little research examining the influence of affordances on supportive conversations or their outcomes, various studies do offer preliminary insight (see Caplan, 2003; Wright, 2000; Youngvorst & High, 2017). Thus, affordances influence CM supportive interactions; yet, which *specific* affordance exert influence is rarely explored. The current study addressed this question by examining whether and how six distinct affordances, namely bandwidth, social presence, synchronicity, conversational control, persistence, and editability, predict the communicative experiences and outcomes of computer-mediated verbal person

centered supportive communicators (Hypotheses 16 & 17). Results help further conceptualize the concept of perceived affordances in relation to VPC supportive communication by examining the impact of such perceptions on support receivers' and providers' communicative experiences and conversational outcomes.

Support Receivers. Regarding support receivers, hypotheses predicted that all six affordances would be positively associated with perceived support quality, emotional improvement, and cognitive reappraisal. Results revealed partial support for these predictions. For instance, both perceived social presence and persistence significantly and positively predicted a receivers' perceived support quality, as well as their level of emotional improvement and cognitive reappraisal. Taken together, these results suggest that the salience of support providers and the durability of supportive messages both benefit support receivers' perceptions of and experiences from VPC supportive interactions. In recent years, a surge of research has explored the influence of CMC on the well-being of communicators (see Best, Manktelow, & Taylor, 2014; Burke & Kraut, 2016; Schiffrin, Edelman, Falkenstern, & Steward, 2010; Valkenburg & Peter, 2007). This study contributes to that agenda by identifying specific communicative factors influencing receiver's supportive experiences. In particular, the salience of helpers seems particularly important for support receivers perceptions of supportive interactions. This offers empirical support for the notion that the general presence of a support providers is a fundamental element of the comforting process above and beyond verbal expressions of concern (Dakof & Taylor, 1992; Gottlieb, 1994; Rogers, 1995), such that increased feelings of closeness benefit people's perception of support (Hobfoll & Lerman, 1989; Kaul & Lakey, 2003).

Additionally, message persistence also emerged as a significant predictor of support receivers' conversational experiences. Receiving support is a complicated process due to the various, and often competing goals inherent to supportive interactions, and the complexity explodes when message exchanges are fleeting and impossible to re-visit once they have been expressed. In fact, Bayers et al. (2016) identified the ephemeral nature of certain CM modalities (e.g., Snapchat) as a reason why they serve as ineffective venues for support; participants identified ephemerality as significantly disadvantageous for supportive interactions because the limited duration of messages made it difficult to communicate social support. The benefits of message persistence become apparent when considering the importance of message scrutinization for a receivers' supportive experience(s). In particular, the Dual-Process Theory of Supportive Message Outcomes (Bodie & Burleson, 2008) argues that supportive messages which are more closely scrutinized (i.e. processed) are evaluated as more important and helpful than messages that receive less scrutiny (Bodie, Burleson, & Jones, 2012). Thus, messages perceived as more persistent than others are likely scrutinized in more depth simply due to the durable nature of the message itself. Accordingly, support receivers are likely to benefit from messages that are more long-lasting than others as a function of increased message processing/scrutinization. However, further research is necessary to examine whether and how specific processes of message scrutinization occur differently as a function of perceived persistence.

Interestingly, this study found that synchronicity and editability were significant predictors of a receivers' emotional improvement, but not perceived support quality or cognitive reappraisal. More specifically, results revealed that increased perceptions of

synchronicity and editability positively predicted a receiver's emotional improvement. This suggests that perceived synchronicity and editability are particularly influential on a receivers' emotional improvement, above and beyond other supportive communication outcomes. This also identifies specific features of supportive conversations that benefit receivers' emotional state. In particular, these findings suggest that supportive conversations in which there is decreased response latency and increased control of message construction are particularly beneficial for a support receivers' emotional improvement. One possible explanation may be that receivers who have greater control over an interaction are better able to navigate the supportive conversation in ways that result in emotional improvement. Additionally, conversations with low response latency enable support recipients to receive messages more quickly after support seeking requests, which could benefit emotional improvement. Ultimately, support receivers are not just perceptive of the affordances available when engaging in supportive communication, but these perceptions fundamentally shape their communicative experiences.

Support Providers. Regarding support providers, hypotheses predicted that perceived bandwidth, social presence, synchronicity, and persistence would be negatively associated with perceived support quality and ease of message production, whereas conversational control and editability are positively associated with these same outcome variables. Contrary to what was hypothesized, however, neither synchronicity, conversational control, nor persistence emerged as significant predictors of either perceived support quality or ease of message production. Although perceived bandwidth and social presence did emerge as significant predictors of support quality and ease of

message production, respectively, the association was positive and thus also contrary to what was predicted. Finally, in line with what was hypothesized, editability positively predicted a providers' ease of message production. Taken together, this suggests that perceived social presence is important for providers perception of support quality, whereas their ease of producing VPC messages increases as a function of perceived editability and bandwidth.

An important implication that arises from these findings regards the universal importance of social presence on supportive communication. The current study showed that both support receivers' and providers' perceived social presence predicted their perceptions of support quality. This offers support for the general premise of Social Presence Theory, which argues that a communicator's salience influences communicative interactions/outcomes. Scholars have been calling for a more clear conceptualization of social presence and its influence on communication for decades (Biocca et al., 2003; Cui et al., 2013; Lombard & Ditton, 1997). This study embraces this challenge by emphasizing the importance of a communicator's perception on the relationship between social presence and communicative outcomes. Extensive research often employs a technological deterministic approach when studying social presence, such that certain modalities are assumed to foster more or less presence than others (Holtzman et al., 2017; Sprecher & Hampton, 2016) and evaluations of users' perceptions are rarely assessed (Walther, 2013). This study advances the conceptualization of social presence in relation to supportive communication, identifying the influence of user perception on support outcomes. Further research is necessary, however, to fully explicate social presence both as a distinct concept and in relation to (CM) communicative processes.

As for a provider's production of VPC messages, the perceived ability to convey/express emotions (i.e., bandwidth) and strategically create/craft/edit messages (i.e., editability) both positively associated with message production ease. These findings underscore the nature of verbal person-centered supportive interactions for support providers. Initially, VPC support is emotionally-laden in nature, such that messages often focus on a distressed other's thoughts, feelings, and emotions. Thus, perceiving a channel as enabling the transmission of emotional content should be tied to the ease with which one can produce VPC messages. Similarly, producing VPC messages is frequently identified to complex and cognitively demanding (see MacGeorge et al., 2011). Thus, channels which enable communicators to more strategically craft messages should also more easily enable VPC message production. Ultimately, these results identify the unique challenges support providers face when constructing VPC messages, such that channels which enable increased bandwidth and editability benefit the production of VPC messages.

Affordances and Verbal Person Centeredness

A final goal of this project was to explore whether and how perceived affordances and level of VPC interact in ways that influence support providers and receivers conversational perceptions and outcomes. It may be that the influence of perceived affordances functions differently as a result of the quality level of CM supportive interactions. For example, persistence may differently influence outcomes of LPC compared to HPC support, such that persistent LPC messages may produce lower perceptions of support quality, whereas persistent HPC messages may heightens perceived support quality. Thus, this study examined how the six affordances of interest

may differently influence support providers' and receivers' conversational perceptions at different levels of VPC (Research Question 3).

Initially, no significant interactions between perceived affordances and VPC emerged for either support providers' perceived support quality nor their reported ease of message production. This suggests that the influence of affordances on providers supportive communication outcomes occur universally rather than as a function of VPC. For instance, regardless of the quality level of a supportive interaction, providers perceptions of social presence positively associated with perceived support quality. Additionally, higher perceptions of bandwidth and editability seem to benefit support providers at all levels of VPC. Ultimately, perceived affordances seem to universally influence support provision, regardless of the type of support being provided.

For support receivers, however, several significant interactions emerged between perceived affordances and VPC in ways that impacted support outcomes. In particular, VPC influenced the relationship between perceived bandwidth and both self-presentational confidence and cognitive reappraisal, such that the association decreased as level of VPC increased. Thus, perceived bandwidth appears particularly important for support receivers confidence during supportive interactions and cognitive reappraisal resulting from the interaction. Further, this indicates that the ability to transmit social cues within a supportive conversation is particularly important for LPC interactions. Low person-centered messages are inherently negative, such that they directly deny and/or minimize the feelings of a distressed other (Burlleson, 1982). In fact, LPC messages are consistently documented as less effective support than more VPC messages (Burlleson, 2003). Yet, the present study indicates that the negativity of LPC messages may be

mitigated when interacting through channels perceived as enabling the conveyance of a wealth of social/nonverbal cues. As VPC increases, however, the importance of perceived bandwidth falls away, which emphasizes the primacy of VPC on comforting processes. Prior research shows that VPC messages predict comforting above and beyond nonverbal cues (see Jones & Guerrero, 2001; Jones, 2004). These findings contribute to research exploring nonverbal cues and supportive communication, suggesting that nonverbal cues are less important for comforting at higher levels of VPC.

Additionally, several significant interactions between bandwidth and persistence arose for receivers' self-presentational confidence, perceived support quality, and emotional improvement, such that the relationship between bandwidth and conversational perceptions/outcomes gets smaller as perceived persistence increases. These results indicate ways in which perceived affordances can interact with other affordances to influence supportive interactions. For instance, the ability to transmit social cues seems particularly beneficial when messages are also ephemeral. In fact, receivers benefited from increased perceptions of bandwidth only when messages were short-lasting. This suggests that the ability to transmit social and/or emotional content is less important when communicating via channels in which messages can be re-visited after they have been exchanged. Ultimately, perceived affordances differently influence conversational perceptions/outcomes at different levels of VPC.

Taken together, this study helps identify explanatory mechanisms underlying outcomes of varied channel use in the context of supportive communication. In particular, support providers and receivers perceived affordances not only influenced supportive communication outcomes, but, at times, did so as a function of the quality-level of the

conversation. Ultimately, measuring perceived affordances via a vis communication channels explicates a more nuanced understanding of computer-mediated verbal person-centered supportive communication.

Limitations and Future Directions

Although this project includes several strengths, limitations exist as well. For instance, although this study employed third-party observations of supportive conversations, raters were not kept blind to the communication channel of the supportive conversation they were judging. Thus, raters' observations may have been skewed. The video-recorded supportive conversations obtained through this study are in the process of being transcribed, and these data will be re-coded once transcripts are available to enhance the validity of third-party observations.

Another limitation of this study was that support providers were trained to provide VPC supportive messages, which may have inherently worsened their perceptions of support quality due to the unnatural nature of the interaction. Whereas support receivers were unaware to the conversational manipulations, providers may have perceived the interaction more negatively simply due to the VPC manipulations rather than for interaction-specific reasons. Similarly, the VPC training employed in this study may have also biased providers' perceived affordances. For instance, providers perceived conversational control may be lower in this study compared to others samples because of the study manipulations. Further research is necessary to better understand support providers conversational perceptions and perceived affordance in the context of natural, non-manipulated supportive interactions.

Further research is necessary to explore the nature of video-based interactions compared to FtF. Several findings reported in this study demonstrated significant differences in conversational perceptions between FtF and Skype-based channels, which is surprising given their functional similarities. Research documents the use of Skype to maintain relationships and interact with established relationship partners, particularly for relationships occurring over long-distances (Hampton, Rawlings, Treger, & Sprecher, 2018). Thus, it remains important to more fully explicate the process of communicating via video-/audio-based channels, and how/why they are different than FtF interactions.

Conclusion

This project provided an in-depth examination of computer-mediated, verbal person-centered supportive communication. In particular, how communication context influences support provider's and receiver's experiences when engaging in VPC supportive communication was explored. Considerable support was offered for a Social Information Processing Theory account to computer-mediated, verbal person-centered supportive interactions between friends. In particular, support providers, receivers, and third-party raters all reported similar perceptions of support quality of conversations across all three channels measured in this study, namely FtF, text messaging, and Skype. The results of this study help explicate which CMC theory best explains the communicative experiences of online supportive communicators. Additionally, this research underscored the importance of *perceived* affordances when studying supportive communication, as several key findings emerged. Initially, support receivers and providers perceived different affordances available to them as a function of their role within a supportive interaction. Further, these perceptions fundamentally shaped the

communicative experience and outcomes reported by supportive interactions. Ultimately, this project sheds light on the intersection between computer-mediated communication and supportive communication, explaining how and why VPC supportive communication operates differently as a function of communication channel. Work must continue to be done in this area to ensure our understanding of fundamental relational processes develop in hand with technological advancements.

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Appendix A

*Verbal Person-Centered Hierarchy***Division I. Denial of Individual Perspective (Low person-centeredness)****1. Speaker condemns the feelings of the other.**

"You probably failed because you did not study hard enough. You probably just blew the test off, so it's really your own fault and nobody else's."

2. Speaker challenges the legitimacy of the other's feelings.

"You're probably just not trying hard enough--that's why you failed. You really don't have any right to be so upset if you didn't study as hard as you should have."

3. Speaker ignores the feelings being experienced by the other (frequently includes statements telling the other to "forget" about the situation or how the other should feel about the situation.

"Just forget about the test. There are other, more important things in this world than some tests in some class. So forget about the test and think about something else."

Division II. Implicit Recognition of Individual Perspective (Moderate person-centeredness)**4. Speaker attempts to divert the other's attention from the distressful situation and the feelings arising from that situation.**

"You don't have the lowest score, so at least you did better than some people. Let's go out and throw the Frisbee around while the sun is still shining."

5. Speaker acknowledges the other's feelings, but does not attempt to help the other understand why those feelings are being experienced or how to cope with them.

"I'm sorry you didn't do well on the test. I'm sorry you feel so bad about it. Do you want to talk about the test?"

6. Speaker provides a nonfeeling-centered explanation of the situation intended to reduce the other's distressed emotional state (often includes references to mitigating circumstances).

"That test was *really* hard and not too many people did well on it. Maybe the questions just hit one of the parts you didn't understand. Or maybe you just studied the wrong thing. These things happen, but remember, that your grade doesn't depend on just one test score."

Division III. Explicit Recognition and Elaboration of Individual Perspectivity (High person-centeredness)

7. Speaker explicitly recognizes and acknowledges the others feelings, but provides only truncated explanations of these feelings (often coupled with attempts to remedy the situation).

"Gee, I know you're upset about not doing better on the test. I know you're probably feeling pretty frustrated right now. But the important thing right now is to try to look forward and not backward. Study hard for the next test and try not to be too upset about how you did on this exam."

8. Speaker provides an elaborated acknowledgment and explanation of the other's feelings.

"Well, I know you're upset about this. It's really frustrating and upsetting when you work hard for something and it doesn't pay off. It can really make you feel discouraged. But usually you do pretty well. Everybody has bad days sometimes. You're human and probably just had a bad day. I've failed some test before too and I know how frustrating it can be. I think, I understand how you're feeling."

9. Speaker helps the other gain a perspective on his/her feelings and attempts to help the other see these feelings in relation to a broader context or the feelings of the other.

"I understand how frustrating it is to study for a test and then do pretty bad on it. It makes you angry and hurt and takes away a lot of self-confidence. Sometimes you wonder if it's even worth trying. But it doesn't mean you're dumb or anything like that. And maybe you've learned what kind of questions the teacher asks so that you can do better on futures tests. Or maybe you know now how the teachers wants you to think about the material. So, although it's probably hard to look at it this way, maybe you've learned something really important that can help you in the future."

Appendix B

Low Person-Centered Training Sheet

Notes:

Tips:**Example Messages:**

<ul style="list-style-type: none"> • Get a sense of the situation by asking one or two content-based questions to start the conversation. 	<ul style="list-style-type: none"> • When/Where did this happen? • Ok... Then what? • Can you tell me a bit more?
<ul style="list-style-type: none"> • Assess the problem and ask whether the situation is maybe not such a big deal. 	<ul style="list-style-type: none"> • Is it really that big of a deal? • Maybe it's not the end of the world.
<ul style="list-style-type: none"> • Distract your friend by diverting the conversation to other topics so they get some relief. Suggest doing something! 	<ul style="list-style-type: none"> • That reminds me of ... (unrelated topic) • Let's get your mind off this and go grab a drink.
<ul style="list-style-type: none"> • Let your friend know that maybe moving on might help with the problem and actually help him/her feel better! 	<ul style="list-style-type: none"> • Don't worry about that – it's no biggy. • Shit happens! • You just gotta move on.
<ul style="list-style-type: none"> • Let your friend know that dwelling on the problem may not help. 	<ul style="list-style-type: none"> • Sometimes things happen and there's nothing we can do about it. • Nothing you can do about it now. • What's worrying going to do about it?

Appendix C

Moderate Person-Centered Training Sheet

Notes:	
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Tips:**Example Messages:**

<ul style="list-style-type: none"> • Get a sense of the situation by asking one or two content-based questions to start the conversation. 	<ul style="list-style-type: none"> • When/Where did this happen? • Ok... Then what? • Can you tell me a bit more?
<ul style="list-style-type: none"> • Provide non-specific acknowledgements of what your friend says. 	<ul style="list-style-type: none"> • That sucks! • I completely understand.
<ul style="list-style-type: none"> • Offer general condolences to your friend about his/her problem(s). 	<ul style="list-style-type: none"> • I'm sorry. • I'm sorry that happened.
<ul style="list-style-type: none"> • Ask non-feeling centered questions to clarify the details of what your friend says. 	<ul style="list-style-type: none"> • What happened then? • And who was all there...?
<ul style="list-style-type: none"> • Express concern while keeping yourself calm and detached. 	<ul style="list-style-type: none"> • That sounds pretty bad. • That's tough.
<ul style="list-style-type: none"> • Hint to an idealistic future that's right around the corner. 	<ul style="list-style-type: none"> • I'm sure everything will work out. • It'll all be OK in the end!
<ul style="list-style-type: none"> • Relate to your friend by briefly sharing a similar experience that you have had. 	<ul style="list-style-type: none"> • Yea, I get that – school sucks sometimes. Last year was really difficult for me, so I understand.
<ul style="list-style-type: none"> • Offer advice to your friend that may solve the problem. 	<ul style="list-style-type: none"> • I know that TA's can help on homework a lot – have you tried talking with the TA's or tutors for your classes?

Appendix D

High Person-Centered Training Sheet

Notes:

Tips:**Example Messages**

<ul style="list-style-type: none"> • Get a sense of the situation by asking one or two content-based questions to start the conversation. 	<ul style="list-style-type: none"> • When/Where did this happen? • Ok... Then what? • Can you tell me a bit more?
<ul style="list-style-type: none"> • Validate your friend's emotions. 	<ul style="list-style-type: none"> • I'm so sorry, that must have made you so mad/sad/hurt/frustrated/angry!
<ul style="list-style-type: none"> • Accept your friend's emotions and express empathy for them. 	<ul style="list-style-type: none"> • I completely understand why you're sad/mad/upset. I feel so bad for you!
<ul style="list-style-type: none"> • Ask them how they feel, and then elaborate upon those feelings. 	<ul style="list-style-type: none"> • How does that make you feel? • So you're mad because you studied hard and still did poorly on the test?
<ul style="list-style-type: none"> • Make your friend feel like a good person. 	<ul style="list-style-type: none"> • Yeah, I get that can be stressful. But you're so smart and you're going to have no trouble at all managing your classes!
<ul style="list-style-type: none"> • Help them understand why this experience may be good in the long run. 	<ul style="list-style-type: none"> • I understand why you're upset about failing the test, but you're bound to study way better and ace the next one! • I know that dealing with money can be stressful – but just think, you're really learning how to manage your money which is going to help you SO much once you graduate and enter the “real world.”

Appendix E

VPC Coding Manual

Verbal person-centeredness (VPC) = the extent to which a message “reflects an awareness of and adaptation to the affective, subjective, and relational aspects of communication contexts.” Most work rates VPC at the level of the message; however, we’re concerned with the degree to which a conversation exhibits more or less of a certain level of VPC. There may be some variation in messages, but we’re focusing on the level of VPC within the conversation as a whole.

3 main levels:

- Low person-centered (LPC) messages condemn or deny people’s feelings. This also includes ignoring emotions and a problem or challenging their legitimacy.
 - LPC messages should be rated 1 – 2 (maybe 3) on the scales below
- Medium person-centered (MPC) messages acknowledge emotions but don’t allow people to elaborate on or better understand their feelings. MPC comfort also includes reframing a stressor, often by trying to divert people’s attention.
 - MPC messages should be rated 3 – 5 on the scales below
- High person-centered (HPC) messages explicitly acknowledge, elaborate, or explore others’ feelings. These messages help people understand their emotions and a problem by helping people gain perspective on how these things fit in a larger context.
 - HPC messages should be rated 6 – 7 (maybe 5) on the scales below

<u>LPC</u>	<u>MPC</u>	<u>HPC</u>
Change convo to focus on provider’s own problems	Acknowledge/paraphrase problem & emotions	Focuses on emotions & validates them
Blame the person	Propose an explanation that doesn’t blame the person	Empathetic & accepting when emotions are discussed
Claim the situation was meant to happen	Suggest a diversion to get the person’s mind off the problem	Reassure person that he/she is a good person; bolster self-esteem
Ignore feelings	Only moderately involving; the support provider is still calm & detached	Explain feelings in a broader context in a sensitive manner
“It’s not the end of the world. I’m sure you’ll get over this.” “Shake it off. Shit happens”	“I’m sorry to hear ____/you’re feeling ____.” “It’s too bad that happened.” “Why don’t you take a break and _____”	“I completely understand why you feel that way. I’d feel the exact same way.” “You seem like a smart person. Hopefully this won’t happen again.”

We're going to rate these VPC messages/conversations on several factors.

- Who they're **centered** on. Whereas LPC messages are often self-centered, HPC messages are totally centered on the other person. MPC messages are mixed. Support providers talking about their own problems is LPC support, unless it's done in a very sensitive and effective manner (maybe to let the person know others have gone through the same thing and were ok). If this is done effectively, then it may be more HPC comfort.
- **Validation.** This concerns whether people confirm or substantiate others' problems or emotions. LPC messages ignore people's problems and emotions and treat them as if they're not a big deal. HPC messages make it seem like a problem or emotions are important and worthy of discussion.
- **Judging.** This dimension focuses on how a support provider makes a receiver feel for feeling a certain way. LPC messages judge another person, challenge the legitimacy of emotions, or make people feel dumb for feeling a certain way. HPC messages let people know it's normal, natural, or OK to feel a certain way. MPC messages mention emotions but don't provide any sort of judgment.
- **Acknowledgement.** Similar to validation. This dimension concerns the degree to which support providers admit that people's problems are real, true, or important. Whereas HPC messages highlight people's problems/emotions and their importance, LPC messages encourage people to ignore their problems/emotions and consider them to be minor issues. MPC messages slightly recognize problems/emotions, but don't make a big deal out of them.
- **Concern.** This dimension notes how concerned, worried, or bothered a support provider is over a receiver. LPC messages are not overly concerned about other people, their problems, or their emotions. LPC messages may even shift the conversational focus to a support provider's own problems. MPC messages demonstrate a concern for others, but they don't allow other people to elaborate or explore their problems/emotions. HPC messages are totally focused on the other person. They show a great deal of concern for other people and their problems.
- **Emotions.** This variable concerns the emotional content of the conversations. LPC messages ignore, or rarely focus on emotions. MPC messages should at least paraphrase emotions, but they won't dwell on feelings. HPC messages often focus on emotions and do so in a sensitive manner.
- **VPC.** I just want to know what level of VPC you think the support providers' messages are. 1 = very LPC messages or bad support. 7 = very high quality and effective HPC support.

Our goal is to rate how person-centered, sensitive, and supportive you think these conversations are. Social support involves communication (both verbal and nonverbal) that is intended to make a distressed individual feel cared for by others. Further, social support includes verbal messages that are intended to alleviate or lessen the emotional

distress of others. Supportive or comforting statements can also agree with a person's feelings, statements, or thoughts; provide information or resources to help a person deal with a problem; offer to do things to help; bolster a person's self-esteem; or supply positive evidence to 'back up' a distressed person's statements or feelings. Social support may even involve disagreeing when a person expresses negative opinions or feelings about him or herself. Again, look at the conversation as a whole. The more HPC messages you see, the higher the level of HPC in the conversation. Focus on the specific messages above as guidelines, but base the coding off of the overall tenor of the conversation.

Use the following scales to make these judgments.

Self-centered	1	2	3	4	5	6	7	Other-centered
Invalidates	1	2	3	4	5	6	7	Validates
Judges	1	2	3	4	5	6	7	Empathizes
Disregards	1	2	3	4	5	6	7	Acknowledges
Unconcerned	1	2	3	4	5	6	7	Concerned
Ignores emotions	1	2	3	4	5	6	7	Emotion-focused
Very LPC	1	2	3	4	5	6	7	Very HPC
Not at all supportive or neutral	1	2	3	4	5	6	7	Extremely supportive
Insensitive	1	2	3	4	5	6	7	Sensitive
Ineffective	1	2	3	4	5	6	7	Effective

Table 1

Summary of Hypotheses and Outcomes

Hypothesis	Prediction(s)	Outcome
H1	Support receivers who engage in supportive conversations FtF perceive the conversation as higher quality (H1a), and report higher levels of emotional improvement (H1b) and cognitive reappraisal (H1c) compared to those communicating via text messaging or Skype.	H1a: Not supported
		H1b: Not supported
		H1c: Not supported
H2	Support receivers who engage in supportive conversations via Skype perceive the conversation as higher quality (H2a), and report higher levels of emotional improvement (H2b) and cognitive reappraisal (H2c) compared to those communicating via text messaging.	H2a: Not supported
		H2b: Not supported
		H2c: Not supported
H3	Support receivers who engage in supportive conversations via either text messaging or Skype perceive the conversation as higher quality (H3a), and report higher levels of emotional improvement (H3b) and cognitive reappraisal (H3c) compared to those communicating FtF.	H3a: Not supported
		H3b: Not supported
		H3c: Supported
H4	Support providers who engage in supportive conversations FtF perceive the conversation as higher quality (H4a) and report a greater ease of message production (H4b) compared to those communicating via text messaging or Skype.	H4a: Not supported
		H4b: Not supported
H5	Support providers who engage in supportive conversations via Skype perceive the conversation as higher quality (H5a) and report a greater ease of message production (H5b) compared to those communicating via text messaging.	H5a: Not supported
		H5b: Not supported
H6	Support providers who engage in supportive conversations via either text messaging or Skype perceive the conversation as higher quality (H6a) and report a greater ease of message production (H6b) compared to those communicating FtF.	H6a: Not supported
		H6b: Not supported
H7	Third-party raters of FtF supportive conversations perceive the conversation as higher quality compared to conversations occurring via text messaging or Skype.	Not supported

H8	Third-party raters of supportive conversations occurring via Skype perceive the conversation as higher quality compared to conversations occurring via text messaging.	Not supported
H9	Third-party raters of supportive conversations occurring via either text messaging or Skype perceive the conversation as higher quality compared to conversations occurring via text messaging or Skype.	Not supported
H10	Communication channel exerts a significant main effect on perceived bandwidth, such that participants perceive bandwidth as significantly higher in FtF conversations compared to those occurring via Skype (H10a), and Skype-based conversations are perceived as significantly higher in bandwidth than when communicating via text messaging (H10b).	H10a: Supported
		H10b: Supported
H11	Communication channel exerts a significant main effect on perceived social presence, such that participants perceive social presence as significantly higher in FtF conversations compared to those occurring via Skype (H11a), and Skype-based conversations are perceived as significantly higher in social presence than when communicating via text messaging (H11b).	H11a: Supported
		H11b: Supported
H12	Communication channel exerts a significant main effect on perceived synchronicity, such that participants perceive synchronicity as significantly higher in FtF conversations compared to those occurring via Skype (H12a), and Skype-based conversations are perceived as significantly higher in synchronicity than when communicating via text messaging (H12b).	H12a: Not Supported
		H12b: Supported
H13	Communication channel exerts a significant main effect on perceived conversational control, such that participants perceive conversational control as significantly higher in text messaging conversations compared to those occurring via Skype (H13a), and Skype-based conversations are perceived as significantly higher in conversational control than when communicating FtF (H13b).	H13a: Supported
		H13b: Supported

H14	Communication channel exerts a significant main effect on perceived persistence, such that participants perceive persistence as significantly higher in text messaging conversations compared to those occurring via Skype (H13a), and Skype-based conversations are perceived as significantly higher in persistence than when communicating FtF (H13b).	H14a: Supported
		H14b: Supported
H15	Communication channel exerts a significant main effect on perceived editability, such that participants perceive editability as significantly higher in text messaging conversations compared to those occurring via Skype (H15a), and Skype-based conversations are perceived as significantly higher in editability than when communicating FtF (H15b).	H15a: Supported
		H15b: Not supported
H16	Perceived bandwidth, social presence, conversational control, synchronicity, persistence, and editability are all positively associated with a support receiver's perception of support quality (H16a), as well as their reported emotional improvement (H16b) and cognitive reappraisal (H16c).	H16a: Partially supported
		H16b: Partially supported
		H16c: Partially supported
H17	Perceived bandwidth, social presence, synchronicity, and persistence are negatively associated with a support provider's perception of support quality (H17a) and ease of message production (H17b), whereas perceived conversational control and editability are positively associated with perception of support quality (H17c) and ease of message production (H17d).	H17a: Partially supported
		H17b: Not supported
		H17c: Not supported
		H17d: Partially supported

Table 2

Means, Standard Deviations and Reliabilities for Study Variables

	Support Receivers			Support Providers			<i>t</i>
	Mean	SD	α	Mean	SD	α	
Relational Satisfaction	4.47	.63	.91	4.55	.62	.92	<i>ns.</i>
Relational Closeness	3.96	.67	.93	3.99	.71	.95	<i>ns.</i>
Bandwidth	5.47	1.37	.91	5.28	1.47	.91	1.97*
Social Presence	5.15	1.50	.91	4.88	1.62	.91	2.80**
Synchronicity	3.70	1.63	.86	3.74	1.82	.91	<i>ns.</i>
Conversational Control	5.50	.84	.71	5.34	1.03	.70	1.96*
Persistence	4.40	1.88	.89	4.28	1.99	.93	<i>ns.</i>
Editability	3.61	2.00	.92	3.76	2.05	.93	<i>ns.</i>
Conversational Realism	3.84	.70	.80	3.84	.65	.81	<i>ns.</i>
Presentation Confidence	4.01	.55	.88	3.64	.64	.89	7.89***
Support Quality	3.94	.62	.92	3.56	.78	.95	7.36***
Emotional Improvement	4.44	.90	.88	---	---	---	N/A
Cognitive Reappraisal	4.14	.80	.70	---	---	---	N/A
Message Production Ease	---	---	---	3.42	.68	.86	N/A

Note: $N = 246$. Mean statistically significant difference between mothers and fathers;

* $p < .05$; ** $p < .01$; *** $p < .001$. Reliability is measure by Cronbach's alpha.

Table 3

Correlation among Variables Rated by Third Party Observers

Variable	V1	V2	V3	V4	V5	V6	V7	V8	V9
V1: Self/Other Centeredness	---								
V2: Validation	0.97**	---							
V3: Judgement	0.98**	0.97**	---						
V4: Acknowledgement	0.97**	0.98**	0.97**	---					
V5: Concern	0.97**	0.97**	0.96**	0.97**	---				
V6: Emotion-Focused	0.96**	0.98**	0.96**	0.97**	0.98**	---			
V7: Supportiveness	0.97**	0.98**	0.97**	0.98**	0.98**	0.98**	---		
V8: Sensitivity	0.97**	0.98**	0.97**	0.98**	0.98**	0.98**	0.98**	---	
V9: Effectiveness	0.98**	0.98**	0.98**	0.98**	0.98**	0.98**	0.98**	0.97**	---

Note. $N = 246$ dyads. ** $p < .01$

Table 4

Correlation among Study Variables

Variable	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16
V1: Relationship Duration	--															
V2: Convo. Length	.09*	--														
V3: Relational Satisfaction	.10*	.08	--													
V4: Relational Closeness	.24**	.10*	0.55**	--												
V5: Bandwidth	-.06	-.50**	.03	.01	--											
V6: Social Presence	-.04	-.54**	-.06	-.08	.79**	--										
V7: Synch.	-.07	-.59**	-.10*	-.10*	.45**	.46**	--									
V8: Convo. Control	.04	.30**	.13**	.15**	.03	-.09	-.49**	--								

V9: Persistence	.04	.63**	.06	.11*	-.54**	-.58**	.80**	.37**	--							
V10: Editability	.09*	.66**	.10*	.13**	-.53**	-.59**	-.81**	.38**	.80**	--						
V11: Convo. Realism	.05	.06	.10*	.03	.17**	.19**	-.02	.10*	.02	.02	--					
V12: Present. Confidence	.07	.01	.11*	.17**	.27**	.26**	-.10*	.20**	.04	.05	.50**	--				
V13: Perceived Support Quality	.03	.08	.07	.08	.17**	.18**	-.14**	.18**	.13**	.12**	.55**	.76**	--			
V14: Emotional Improve.	.05	.01	.10	.24**	.20**	.19**	.04	.11	.05	.06	.46**	.60**	.78**	--		
V15: Cognitive Reapp.	.01	.03	.01	.13*	.04	.08	-.05	.07	.14*	.07	.35**	.52**	.65**	.71**	--	
V16: Message Production Ease	.04	.14*	.14*	.08	.09	.03	-.21**	.21**	.18**	.26**	.48**	.49**	.54**	--	--	--

Note. $N = 492$. * $p < .05$; ** $p < .01$. Synch = Synchronicity; Reapp = Reappraisal. Emotional Improvement and Cognitive Reappraisal were only measured for support receivers, and Message Production Ease was only measured for support providers; Thus, these variables were not correlated.

Table 5

Correlations Between Support Provider and Receiver Study Variables

Variable	P: Rel Sat	P: Rel Close	P: Band	P: Soc Pres	P: Synch	P: Convo Control	P: Persist	P: Edit	P: Realism	P: Pres Conf	P: Supp Qual
R: Rel Sat	.22**	.25**	-.06	-.02	-.10	-.01	.02	-.01	-.10	-.03	-.06
R: Rel Close	.24**	.53**	-.10	-.13**	-.06	.02	.09	.11	-.07	.04	-.02
R: Band	.03	.05	.45**	.50**	.55**	-.27**	-.57**	-.56	.04	.12	.05
R: Soc Pres	-.03	-.05	.43**	.55**	.48**	-.25**	-.50**	-.50	.03	.11	.06
R: Synch	-.07	-.03	.39**	.39**	.55**	-.21**	-.57**	-.57	-.01	-.08	-.12
R: Convo Control	.07	.12	-.08	-.18**	-.19**	.14**	.32**	.19**	.01	.04	.08
R: Persist	.05	.06	-.44**	-.51**	-.59**	.29**	.62**	.61**	.04	.06	.14*
R: Edit	.08	.09	-.36**	-.45**	-.62**	.31**	.61**	.65**	.09	.11	.19**
R: Realism	-.01	.02	.16*	.13*	.03	.03	-.08	-.02	.16*	.19**	.18**
R: Pres Conf	.06	.14*	.08	.13	.04	.01	-.08	-.01	.10	.25**	.27**

R: Supp Qual	.04	.10	.06	.06	-.05	.06	.03	.07	.17**	.35**	.38**
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Note. $N = 246$. * $p < .05$; ** $p < .01$. Receiver variables are listed vertically and are denoted R; Provider variables are listed horizontally and are denoted P. Rel Sat = Relational Satisfaction; Rel Close = Relational Closeness; Band = Bandwidth; Soc Pres = Social Presence; Synch = Synchronicity; Convo Control = Conversational Control; Persist = Persistence; Edit = Editability; Realism = Perceived Conversational Realism.

Table 6

Conversational Perceptions by Communication Channel

Variable	<i>F</i>	FtF vs. text messaging	FtF vs. Skype	Text messaging vs. Skype
rBandwidth	87.22	2.05***	.46*	-1.58***
rSocial Presence	98.390	2.44***	1.14***	-1.30***
rSynchronicity	88.150	2.19***	-.06	2.26***
rConversational Control	12.20	-.60***	-.16	.44**
rPersistence	124.66	-3.10***	-.70**	2.4***
rEditability	157.93	-3.05***	.21	3.26***
rRealism	.43	.10	.07	-.03
rPresentational Confidence	.59	.12	.04	-.07
rSupport Quality	.52	-.08	-.11	-.03
rEmotional Improvement	1.61	-.11	-.20	-.09
rCognitive Reappraisal	5.86	-.28	-.36**	-.09
pBandwidth	57.79	1.95***	.51*	-1.44***
pSocial Presence	125.10	2.78***	1.06***	-1.72***
pSynchronicity	123.30	2.82***	.23	-2.59***
pConversational Control	23.14	-.98***	-.29	.68***
pPersistence	148.82	-3.21***	-.24	2.97***
pEditability	174.98	-3.24***	.14	3.38***
pRealism	.71	-.03	.10	.13
pPresentational Confidence	.99	.07	.16	.09
pSupport Quality	2.89	-.05	.20	.25
pMessage Production Ease	6.91	-.15	.25*	.41***
Rated Support Quality	2.66	-.18	-.13	.05

Note. Support receiver variables are denoted with a lowercase r, whereas support provider variables are denoted with a lowercase p. df for all *F*-tests = (2, 243). Values for the cells comparing levels of VPC are mean differences. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 7

Conversational Perceptions by VPC

Variable	<i>F</i>	LPC vs. MPC	LPC vs. HPC	MPC vs. HPC
rBandwidth	.32	-.13	-.16	-.03
rSocial Presence	.35	-.20	-.10	.10
rSynchronicity	1.18	-.19	.20	-.20
rConversational Control	.78	.10	.06	-.16
rPersistence	.45	.15	-.13	-.30
rEditability	.48	-.01	-.27	-.26
rRealism	.64	-.10	-.11	-.01
rPresentational Confidence	3.54	-.10	-.23*	-.12
rSupport Quality	4.53	-.15	-.29*	-.14
rEmotional Improvement	.97	-.13	-.19	-.06
rCognitive Reappraisal	1.12	-.18	-.11	.07
pBandwidth	.15	-.03	.09	.12
pSocial Presence	.08	-.08	.01	.09
pSynchronicity	.02	.04	.06	.02
pConversational Control	.35	-.11	.01	.16
pPersistence	.03	.07	.05	-.03
pEditability	.18	.15	-.03	-.18
pRealism	2.75	.02	-.19	-.22
pPresentational Confidence	7.48	-.03	-.34**	-.31**
pSupport Quality	15.41	-.20	-.63***	-.43***
pMessage Production Ease	.62	-.01	-.10	-.10
Rated Support Quality	200.31	-2.25***	-4.38***	-2.14***

Note. Support receiver variables are denoted with a lowercase r, whereas support provider variables are denoted with a lowercase p. df for all *F*-tests = (2, 243). Values for the cells comparing levels of VPC are mean differences. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 8

Planned Comparisons of Communication Channel for Receiver, Provider, and Third-Party Rater Conversational Perceptions

	FtF	Text Messaging	Skype	<i>t</i>
FtF vs. Skype & Text Messaging	+2	-1	-1	
H1a: R_Perceived Support Quality				-1.13
H1b: R_Emotional Improvement				-1.28
H1c: R_Cognitive Reappraisal				-2.29*
H4a: P_Perceived Support Quality				1.30
H4b: P_Ease of Message Production				.56
H7: Rater_Perceived Support Quality				-.80
Skype vs. Text Messaging	0	-1	+1	
H2a: R_Perceived Support Quality				.27
H2b: R_Emotional Improvement				.61
H2c: R_Cognitive Reappraisal				.70
H5a: P_Perceived Support Quality				-.86
H5b: P_Ease of Message Production				-3.93***
H8: Rater_Perceived Support Quality				-.40
Skype & Text Messaging vs. FtF	-2	+1	+1	
H3a: R_Perceived Support Quality				1.13
H3b: R_Emotional Improvement				1.28
H3c: R_Cognitive Reappraisal				2.29*
H6a: P_Perceived Support Quality				-1.30

H6b: P_Ease of Message Production	-.56
H9: Rater_Perceived Support Quality	.80

Note. Receiver variables are denoted with an “R”, provider variables are denoted with a “P”, and third-party rater variables are denoted “Rater”. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 9

Standardized Regression Coefficients and R² for support providers' and receivers'

Conversational Perceptions/Outcomes onto Perceived Affordances

	Support Receivers			Support Providers	
	Perceived Support Quality	Emotional Improvement	Cognitive Reappraisal	Perceived Support Quality	Ease of Message Production
Bandwidth	.19 [†]	.16	.01	.13	.25**
Social Presence	.24*	.22*	.22*	.31***	.10
Synchronicity	.16	.31**	.17	-.23 [†]	.05
Conversational Control	.05	.09	.04	-.01	.03
Persistence	.30**	.28**	.36***	.01	-.04
Editability	.17	.24**	.03	.23 [†]	.52***
Adj. R ²	.10***	.10***	.04*	.14***	.13***

Note. Values are standardized Beta weights. Adj. R² = Adjusted R-squared of the regression model. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. [†] $p < 0.10$.

Table 10

Hierarchical Regression of Support Receivers' Self-Presentational Confidence onto their own Perceived Affordances, VPC, and Interactions.

	Model 1			Model 2			Model 3			Model 4		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β
VPC	.10	.04	.14*	.09	.04	.14**	.09	.04	.19**	.10	.04	.15**
Bandwidth	.10	.04	.25*	.16	.04	.41***	.19	.04	.47***	.19	.04	.47***
Social Presence	.07	.04	.19	.06	.04	.16	.05	.04	.15	.05	.04	.13
Synchronicity	-.01	.04	-.04	-.01	.04	-.04	.02	.04	.06	.02	.04	.05
Conversational Control	.04	.04	.07	.03	.04	.04	.04	.04	.06	.04	.04	.05
Persistence	.04	.03	.13	.09	.03	.31**	.10	.03	.34***	.10	.03	.34***
Editability	.01	.03	.03	-.01	.03	-.01	.02	.03	.08	.02	.03	.06
Bandwidth x Persistence				-.07	.02	-.26***	-.07	.02	-.30***	-.07	.02	-.28***
Synchronicity x Editability							.04	.01	.18**	.04	.01	.18**
Bandwidth x VPC										-.06	.03	-.12*
(Constant)	3.98	.03		3.89	.04		3.96	.05		3.97	.05	

<i>F</i>	6.42***	7.66***	7.86***	7.56***
Adjusted R ²	.13	.18	.20	.21
Change in Adjusted R ²		.05***	.03**	.01*

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 11

Hierarchical Regression of Support Receivers' Perceived Support Quality onto their own Perceived Affordances, VPC, and Interactions.

	Model 1			Model 2			Model 3		
	B	SE	β	B	SE	β	B	SE	β
VPC	.13	.05	.17**	.12	.05	.16**	.12	.05	.16**
Bandwidth	.08	.05	.17	.13	.05	.30**	.19	.05	.42***
Social Presence	.09	.04	.22*	.08	.04	.20*	.04	.04	.10
Synchronicity	.06	.04	.17	.06	.04	.17	.07	.04	.17
Conversational Control	.04	.05	.05	.02	.05	.03	.02	.05	.03
Persistence	.10	.04	.30**	.15	.04	.44***	.14	.04	.43***
Editability	.05	.03	.16	.04	.03	.13	.05	.03	.17
Bandwidth x Persistence				-.06	.02	-.21	-.12	.03	-.42***
Social Presence x Persistence							.06	.02	.26**

(Constant)	3.91	.04	3.82	.03	3.84	.05
<i>F</i>		5.74***		6.25***		6.48***
Adjusted R ²		.12		.15		.17
Change in Adjusted R ²				.03***		.02**

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 12

Hierarchical Regression of Support Receivers' Emotional Improvement onto their own Perceived Affordances, VPC, and Interactions.

	Model 1			Model 2		
	B	SE	β	B	SE	β
VPC	.07	.07	.07	.07	.07	.06
Bandwidth	.10	.07	.15	.18	.08	.28**
Social Presence	.13	.06	.22*	.12	.06	.20*
Synchronicity	.17	.06	.31**	.17	.06	.31***
Conversational Control	.10	.07	.09	.08	.07	.07
Persistence	.13	.05	.28**	.20	.06	.42***
Editability	.11	.05	.23*	.09	.05	.21*
Bandwidth x Persistence				-.09	.03	-.21**
(Constant)	4.42	.06		4.28	.07	
<i>F</i>	4.79***			5.33***		
Adjusted R ²	.10			.13		
Change in Adjusted R ²				.03**		

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 13

Hierarchical Regression of Support Receivers' Cognitive Reappraisal onto their own Perceived Affordances, VPC, and Interactions.

	Model 1			Model 2			Model 3			Model 4		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β
VPC	.05	.06	.05	.05	.06	.05	.04	.06	.05	.05	.06	.05
Bandwidth	-.01	.07	-.01	.01	.06	.02	.01	.06	.01	.01	.06	.02
Social Presence	.12	.06	.22*	.11	.06	.21*	.13	.06	.24*	.12	.06	.23*
Synchronicity	.08	.06	.17	.12	.06	.25*	.16	.06	.32**	.15	.06	.31**
Conversational Control	.04	.07	.04	.06	.07	.06	.04	.07	.04	.03	.07	.03
Persistence	.15	.05	.36***	.16	.05	.37***	.22	.06	.53***	.23	.06	.53***
Editability	.01	.05	.02	.04	.05	.10	.01	.05	.02	.01	.05	.01
Synchronicity x Editability				.04	.02	.15*	.08	.03	.27***	.08	.03	.28***
Persistence x Editability							.06	.03	.21*	.06	.03	.21*
Bandwidth x VPC										-.09	.04	-.12*
(Constant)	4.12	.05		4.23	.07		4.16	.08		4.17	.08	
<i>F</i>	2.37*			2.71**			2.96***			3.09***		

Adjusted R ²	.04	.05	.07	.08
Change in Adjusted R ²		.02*	.02*	.02*

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 1

Scatterplot Demonstrating the Interaction Between a Support Receivers' Perceived Bandwidth and Persistence on their Self-Presentational Confidence

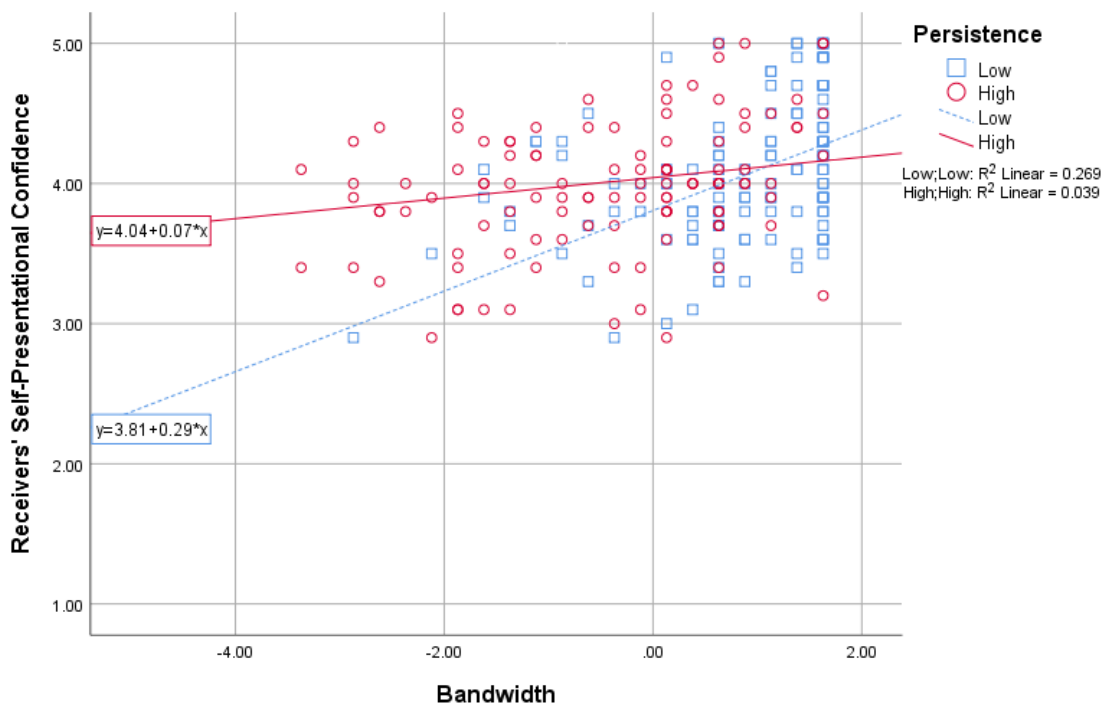


Figure 2

Scatterplot Demonstrating the Interaction Between a Support Receivers' Perceived Bandwidth and Verbal Person Centeredness on their Self-Presentational Confidence

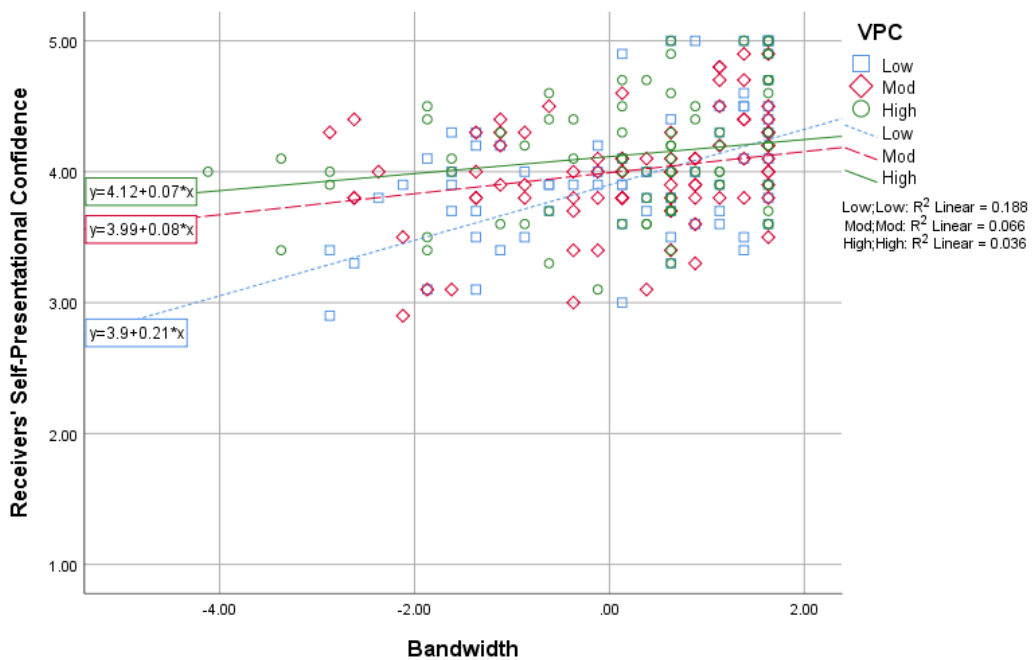


Figure 3

Scatterplot Demonstrating the Interaction Between a Support Receivers' Perceived Bandwidth and Persistence on their Perceived Support Quality

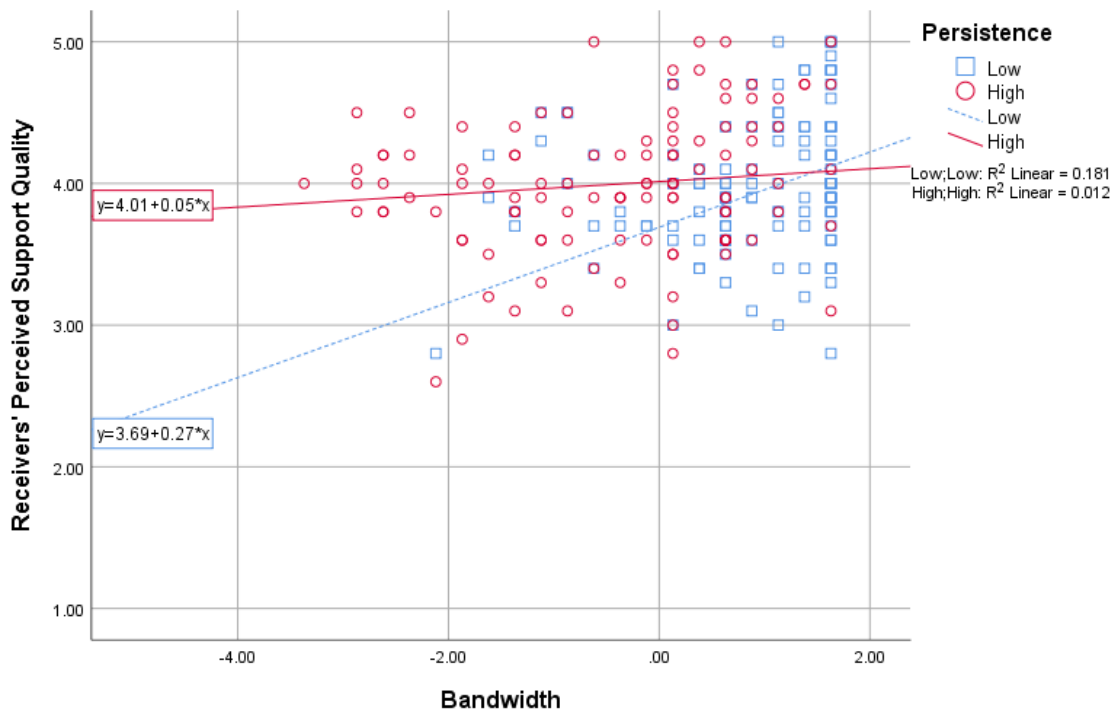


Figure 4

Scatterplot Demonstrating the Interaction Between a Support Receivers' Perceived Social Presence and Persistence on their Perceived Support Quality

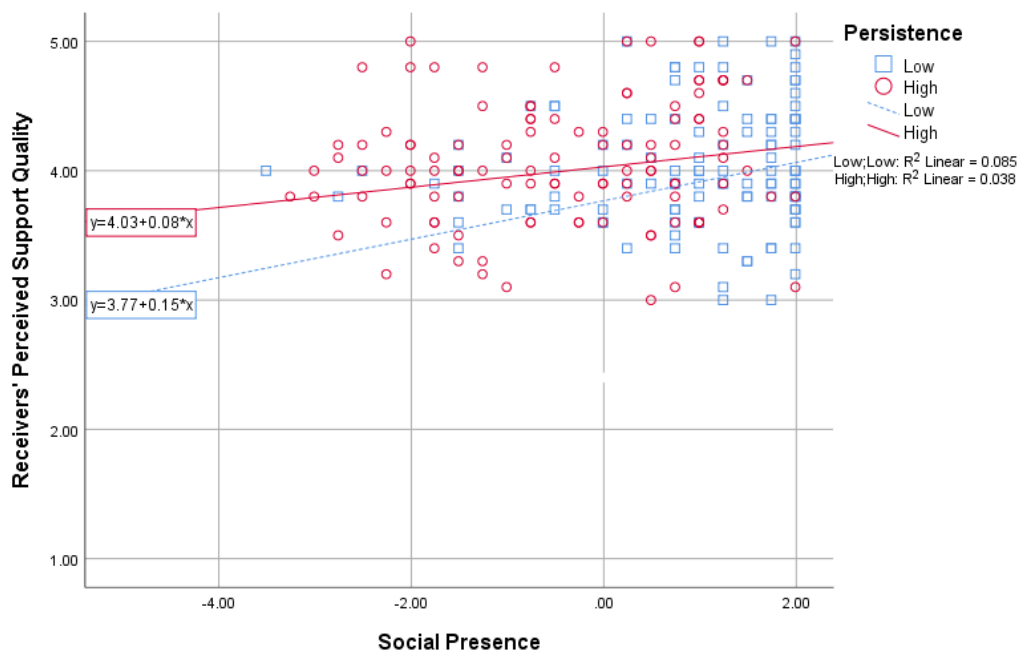


Figure 5

Scatterplot Demonstrating the Interaction Between a Support Receivers' Perceived Bandwidth and Persistence on their Emotional Improvement

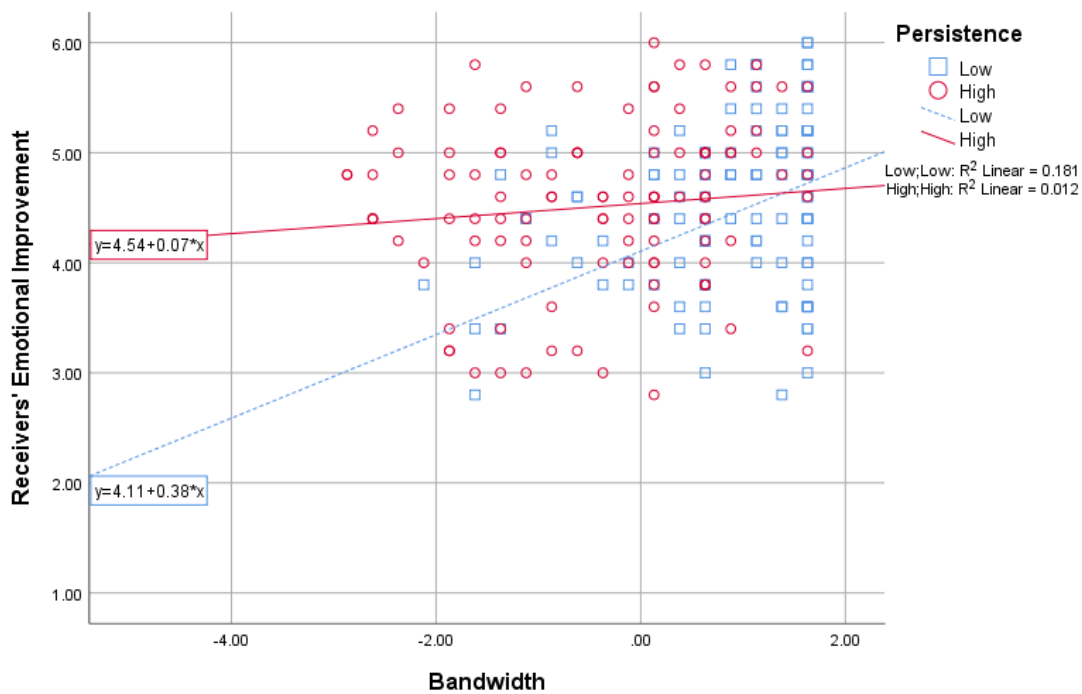


Figure 6

Scatterplot Demonstrating the Interaction Between a Support Receivers' Perceived Bandwidth and Verbal Person Centeredness on their Cognitive Reappraisal

