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Kim, Chelsea

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Social Support as Social Exchange:
Exchange Structure and Social Solidarity in Online Support Groups

By

CHELSEA KIM
DISSERTATION

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Approved:

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Bo Feng

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Wang Liao

_____
Hao-Chuan Wang

Committee in Charge

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Past six years have been humbling and enlightening. From the work of the preceding scholars, I became to know that the existence of close others is crucial to people's well-being: data show that people live longer and healthier (physically and mentally) when they keep family and friends close. I, myself, have observed the power of social relationships throughout my six-year-long empirical research.

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ABSTRACT

Adopting the framework of social exchange in researching supportive communication, this work proposes the concept of support exchange. This dissertation defines support exchange and discusses how support exchange is similar to and different from instrumental exchange, which has been the main topic the previous social exchange research. Based on the discussion, the propositions on the relationship between exchange structure and social solidarity in support exchange are established. The propositions were tested through a controlled small-group lab experiment with a 2 (exchange structure: direct reciprocal exchange vs. generalized exchange) x 2 (support type: emotional vs. informational support) design. 285 participants embedded in 95 triads interacted in an online support group following the instructions. Findings from the experiment and the linguistic analysis of the interaction data show that direct reciprocal support exchange generates stronger social solidarity, perceived supportiveness, and commitment to the online group than generalized support exchange does. Limitations and implications of the findings are discussed.

CHAPTER 1. Overview of the Research of Social Support

Substantial research has demonstrated that having social support from others during difficult times can enhance people's physical and mental well-being (for review, see MacGeorge, Feng, & Burleson, 2011). For example, quality social support can enable people to live healthy and longer life (Cohen & Wills, 1985; Lakey & Orehek, 2011). More specifically, good social support can reduce psychological maladjustment, reduce psychological distress, and attenuate the reactivity of the hypothalamic-pituitary-adrenal (HPA) axis (Cohen & Wills, 1985; Hennessy, Kaiser, & Sachser, 2009; Holahan & Moos, 1981; Lepore, 1992).

With the development of communication technology such as social media, individuals became able to access social support more easily during hard times. Individuals can not only connect with their existing social ties more easily (Kim & Lee, 2011; Nabi, Prestin, & So, 2013) but also seek support from a broader social network bounded by online support groups (Barak, Boniel-Nissim, & Suler, 2008; Flickinger et al., 2017; Mesch, 2007). This chapter starts with the review of the research of social support from the psychological, sociological, and communication perspectives. Then, I review the extant research of supportive communication, conducted in the general social interaction context and in the specific context of online social interaction. After the review, I identify the limitations of the current literature on online supportive communication and report the current project that aims to address some of the limitations with existing literature.

1.1. Definitions of and Perspectives in Studying Social Support

Due to its importance in health and well-being of individuals, social support has been defined and researched from diverse perspectives. Social support has been defined as *information* "leading the subject to believe that [they are] cared for and loved…esteemed and valued…[and]

belongs to a network of communication and mutual obligation" (Cobb, 1976, p. 300). Similarly, social support has also been defined as a *process* where two individuals exchange resources that are "perceived by the provider or the recipient to be intended to enhance the well-being of the recipient" (Shumaker & Brownell, 1984, p. 11). Some scholars came up with the definitions specific to different contents of social support, such as emotional, informational, and instrumental support (Cooke et al., 1988; House, Umberson, & Landis, 1988).

Before social support gained attention from the communication scholars, its importance on individuals' well-being had been well-established by the researchers viewing social support from the psychological and sociological perspectives. Researchers taking the psychological perspective viewed social support as individuals' perception of available support (Cohen & Wills, 1985; Kessler, 1992). Based on the appraisal theory, which views stress as arising from individuals' appraisal of the situation instead of from the events themselves (Lazarus & Folkman, 1984), these scholars established that individuals' perception of the available support in time of need positively affects physical and mental health (Gruenewald & Seeman, 2010; Uchino, 2009). With the focus on individuals' cognitive and emotional process, scholars adopting this perspective emphasized individuals' *perception* of care, value, or positive regard over the actual supportive behaviors that produce such perceptions. For example, they measured social support by asking to what extent individuals believe that they have support source available in time of need (e.g., Multidimensional Scale of Perceived Social Support: Zimet, Dahlem, Zimet, & Farley, 1988).

On the other hand, researchers with the sociological perspective have viewed social support as an implied outcome of social integration. These researchers established that being a part of a social network predicts physical and psychological well-being of individuals. They

suggested social support as the mechanism explaining the positive association between social integration and well-being, assuming that social network accompanies social support and that being a part of the network means receiving social support (e.g., Hlebec, Mrzel, & Kogovšek, 2009; Lee, Chung, & Park, 2018; Uehara, 1990). In this body of literature, researchers measured social support by asking to what extent individuals belong to different social groups, such as family, church, and communities (Berkman et al., 2004; Ikeda & Kawachi, 2010).

Even though the research on social support from the psychological and sociological perspectives contributed to our understanding of the value of social support, it is limited in some respects. Instead of directly examining social support as a communication process, it focused on the antecedent (i.e., social network) or outcome (i.e., perceived support) of social support. Since it does not focus on the process of social support per se, the research taking the psychological or sociological perspective does not allow in-depth understanding of how social support is exchanged or how different forms and types of social support lead to different outcomes. To address these limitations, communication scholars have applied the communication perspective to study social support.

1.2. Supportive Communication

The research of social support from the communication perspective is the research of supportive communication, which widely has been 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). However, considering that supportive communication involves both seeking and provision of support (MacGeorge et al., 2011), it can be defined as 'verbal and nonverbal behavior produced with the intention of *seeking assistance or providing assistance* to

others perceived as needing that aid.' This definition emphasizes the interactional nature of supportive communication instead of viewing supportive communication as one-way giving of support. In other words, the communication perspective on social support focuses on the process of giving and receiving support through the exchange of messages. This perspective assumes a direct connection between the communication behaviors and individuals' well-being. This distinguishes the communication perspective from the psychological or the sociological perspective, which views well-being as an outcome of the perception of available source of such communication (psychological) or as an outcome of the membership in groups where such communication can happen (sociological). The communication perspective also views social support as "an intentional responses to targets' perceived needs" (MacGeorge et al., 2011, p. 323), which distinguishes it from the psychological or sociological perspective that implies social support as naturally occurring in social relationships.

With the focus on the direct connection between the communication behaviors and individuals' well-being, supportive communication researchers have examined how some types of supportive communication are more effective than others. In doing this, they have primarily focused on the effectiveness of the supportive communication episodes happening in dyads, between a support seeker and a support provider (Feng & Burleson, 2008; Feng, 2009; Goldsmith & MacGeorge, 2000; MacGeorge et al., 2002). A supportive communication episode is comprised of the process where an individual seeks support and a helper provides support through the exchange of messages (Barbee & Cunningham, 1995). Communication scholars have examined how different factors, such as seeker, provider, and message characteristics, lead to different outcomes in different phases in a supportive communication episode including support seeking, support provision, target reaction, and helper response (for reviews, see

MacGeorge et al., 2007; MacGeorge et al., 2011). This body of literature informs us on what makes some types and forms of supportive communication episodes more effective than others.

1.2.1. Different Types of Support and Their Effectiveness

In examining effective supportive communication, the typology of support by Cutrona and Russell (1990) has served as an important framework. Cutrona and Russell (1990) distinguished different types of social support based on the contents of support. According to the typology, there are five types of support: emotional support, informational support, esteem support, network support, and tangible support.

Emotional support is defined as "specific lines of communicative behavior enacted by one party with the intent of helping another cope effectively with emotional distress" (Burleson, 2003, p. 552). It should be noted that there is lack of consensus in definitions of different types of support; while the definition of emotional support provided above focuses on the support giver's intent, some have defined different types of support focusing on their actual content (e.g., hug) (House, 1981). One trait of effective emotional support is person-centeredness of the supportive message (High & Dillard, 2012). Person-centeredness is the degree to which a message reflects "an awareness of and adaptation to the affective, subjective, and relational aspects of communication contexts" (Burleson, 1982, p. 305). Through rigorous lab experiments, person-centeredness is found to be positively affecting the perceived and actual effectiveness of the emotional support messages. Messages with high person-centeredness are perceived to be more helpful (Burleson, 2008; Rack et al., 2008; Servaty-Seib & Burleson, 2007), effective (Kunkel & Burleson, 1999; Bodie, Burleson, & Jones, 2012), and sensitive (Burleson et al., 2006; Burleson & Mortenson, 2003; Jones & Burleson, 2003). Not only are they perceived to be higher in quality, but they also lead to better support outcome in terms of improving affect

(Bodie et al., 2012; Jones & Burleson, 2003). The positive effects of the person-centeredness of

supportive messages on the perceived and actual support effectiveness are primarily due to the

cognitive reappraisal experienced by support receivers. Once they receive emotional support,

support receivers reappraise the problematic situation in more positive ways, and thus,

experience transition in their emotional states (Burleson & Goldsmith, 1998; Jones & Wirtz,

2006). Messages with high person-centeredness facilitate this process by encouraging the support

receivers to "reflect on, talk about, and understand" their feelings (MacGeorge et al., 2011, p.

334).

Informational support is the provision of relevant information intended to help a person

cope with problems or difficulties (Burleson, 1982; Cutrona & Russell, 1990). In examining

effective informational support, communication scholars have particularly focused on advice,

defined as the "messages that make recommendations about what to do, think, or feel in response

to a problematic situation" (MacGeorge et al., 2011, p. 335). Depending on the advice content,

the outcome may vary. For example, including politeness, response efficacy, feasibility, absence

of limitation, and confirmation in advice positively predicted the perceived effectiveness of the

advice (MacGeorge et al., 2004; Feng & MacGeorge, 2010). Advice response theory (Feng &

MacGeorge, 2010) emphasizes the importance of these content characteristics over source

characteristics, such as expertise, liking, and trust, in affecting the advice outcome. The sequence

of the contents affects the advice outcome as well. According to the integrated model of advice

giving (Feng, 2009), advice constructed in the sequence of emotional support, problem inquiry

and analysis, advice giving is evaluated more positively compared to the advice constructed in

other sequences. This line of work shows that effective advice not only serves the function of

informational support but also addresses the support receivers' emotional need.

Esteem support, defined as the support "focused on enhancing how others feel about themselves and their attributes, abilities, and accomplishments" (Holmstrom, 2012, p. 78), has gained attention from the communication researchers relatively recently. Esteem support increases recipients' self-esteem after experiencing esteem-threatening situations such as job loss (Holmstrom, 2012). Holmstrom and Burleson (2011) proposed the cognitive-emotional theory of esteem support messages (CETESM), which posits that effective esteem support is support that modifies the support receivers' attributions and appraisals about the self-esteem threatening events. According to the theory and the following empirical tests, esteem support messages that are more emotion-focused and inductive (vs. assertive) are perceived to be more helpful (Holmstrom & Burleson, 2011; Holmstrom, Russell, & Clare, 2013). Also, some contents of esteem support (e.g., minimization, caring expressions, and praise) were perceived as more helpful than other contents of esteem support (Holmstrom, 2012).

Network support, also known as social integration, is a type of support making individuals feel they are "a part of a group whose members have common interests and concerns" (Cutrona & Russell, 1990, p. 322). The positive effects of network support are well-studied, such as facilitating the success of newly founded businesses (Brüderl & Preisendörfer, 1998) and helping the treatment of alcoholic patients (Litt, Kadden, Kabela-Cormier, and Petry, 2007). Tangible support is the provision of concrete instrumental resources such as financial assistance and physical help with tasks. The exchange of tangible support has been studied in diverse contexts such as patients with different types of disease (Hirschman & Bourjolly, 2005; Woloshin et al., 1997) and older adults (Coffman, 2008; Friedman & King, 1994). However, we have relatively limited understanding on how some types of the network or tangible support are

more effective than others, compared to the understanding we have on effective emotional, informational, and esteem support.

1.3. Online Supportive Communication

Growth of the Internet has affected how people give and receive social support in significant ways (Mesch, 2007). It not only facilitated more frequent supportive communication with existing social connections but also enabled supportive communication with a large network of strangers sharing a hardship. Indeed, much of social support these days happens online, including in Social Network Sites (SNSs), online forums on specific topics (e.g., https://www.dailystrength.org/), and subcommunities organized by areas of interest under larger websites (e.g., subreddits in Reddit, Facebook groups) (Pew Research Center, 2015).

1.3.1. Characteristics of Online Supportive Communication

Some characteristics of online supportive communication make it more advantageous than the supportive communication happening in face-to-face. First, individuals can be anonymous and less visible. In most of the platforms where online supportive communication happens, users can remain anonymous to some extent, either by using pseudonyms or being completely anonymous. Even on the platforms where individuals use their real names (e.g., Facebook groups), individuals can remain invisible, thus can express themselves more openly (Suler, 2004). The online disinhibition effect (Suler, 2004) enables individuals to seek and provide support more easily online, as individuals are less hesitant to engage in self-disclosure online, especially when the problem is about sensitive topics (Rains & Young, 2009; Walther & Boyd, 2002). Some interfaces adopt the social identification strategies that deemphasize users' individual differences and promotes the sense of membership, which can encourage participants' contribution (Walther & Jang, 2012).

Second, supportive communication can happen asynchronously online. Unlike in face-to-face settings where support seeking and giving happen in real time, in online, support receivers and givers can choose to engage in the communication whenever they want to. This characteristic also invites the online disinhibition effect, as individuals do not have to worry about an immediate reaction from others during seeking and providing support. In the situations where supportive communication happens in a group of people, the freedom to leave and reenter the group may facilitate individuals' voluntary engagement with groups by reducing negative emotions that group communication process often stimulates, such as anxiety and nervousness (Barak, Boniel-Nissim, & Suler, 2008).

Third, individuals can engage in supportive communication within a large social network. In off-line, supportive communication often happens in a dyad, and even when happening in a support group, the group size is limited to 10-15 due to the limitations of face-to-face communication. In contrast, the number of the participants in the supportive communication is unlimited online. With the mass-personal characteristics, online platforms allow individuals to seek support from the unspecified mass audience, and anyone in the group can be a potential support provider (Turner, Grube, & Meyers, 2001). Unlike in off-line where most of social support comes from strong ties, in online, individuals can access social support from a larger number of weak ties (Colineau & Paris, 2010). Even though people may feel less close to the weak ties, these heterogeneous weak ties can be beneficial in providing new information and diverse point of view (Adelman, Parks, & Albrecht, 1987; Granovetter, 1973). With the advantages, online supportive communication has gained much attention from the scholars. In the next section, I review the extant research on online supportive communication.

1.3.2. Existing Research on Online Supportive Communication

1.3.2.1. Describing Online Support Contents

First, some studies described the contents of the supportive messages online. Most of these studies were conducted in the context of health-related support groups on Twitter and Reddit on diverse topics such as eating disorder (Eichhorn, 2008), weight loss (Turner-McGrievy & Tate, 2013), cancer (Myrick, Holton, Himelboim, & Love, 2016), HIV (Coursaris & Liu, 2009; Mo & Coulson, 2008), pregnancy (Hether et al., 2016), Parkinson's disease (Attard & Coulson, 2012), and quitting cannabis use (Sowles et al., 2017). Many of these studies are exploratory and low in external validity, as they focus on describing the contents of the support in relation to the specific context examined. One trend that is generally observed across the diverse contexts is that informational support, followed by emotional support, is the most frequently exchanged type of support in online support groups (Eichhorn, 2008; Turner-McGrievy & Tate, 2013; Myrick et al., 2016; Coursaris & Liu, 2009; Mo & Coulson, 2008; Hether et al., 2016; Coulson, 2005; Coulson, Buchanan, & Aubeeluck, 2007).

Considering that seeking support from the unspecified large audience online is different from seeking support from family or close friends in face-to-face, some studies described the support seeking strategies used by support seekers in online support groups. For example, Buehler (2017) identified several strategies (e.g., redirecting attention to others, projecting optimism) people used to seek emotional support while avoiding violating group norms on Facebook. Sharing experiences and directly requesting for information were also identified as the support seeking strategies used in online support groups (Eichhorn, 2008).

1.3.2.2. Outcomes of Online Supportive Communication

Engaging in online supportive communication has positive effects on individuals' physical and psychological well-being (Rains & Young, 2009). A large body of research has

examined the effects of using social technology in general, such as Facebook use or number of friends on SNS, on perceived social support (e.g., Nabi et al., 2013; Seo, Kim, & Yang, 2016; Kim & Lee, 2011; Oh, Ozkaya, & LaRose, 2014). This line of research points to the positive effect of using social technology on individuals' perceived support. However, this body of literature is not in the scope of the dissertation considering that the current dissertation focuses on the communication process with the specific purpose of seeking and providing support instead of the perceived support as a result of general social interaction.

Through pre- and post- interaction surveys, some studies found the causal effect of engaging in online supportive communication on individuals' coping. Rain & Young (2009), in their meta-analysis of 28 intervention studies, concluded that participation in online support groups contributed to the increased social support and self-efficacy to manage one's health condition. Also, an intervention study (Turner et al., 2013) found that receiving more emotional support on e-mail from the healthcare providers enhanced health outcomes in diabetes patients.

Incorporating text analysis in the research enabled researchers to understand specific types of supportive communication that are more beneficial than others. In specific, reappraising one's emotion and cognition while seeking and providing support online positively affected individuals' psychological well-being (Han et al., 2008; Han et al., 2011; Shaw, Han, Hawkins, McTavish, & Gustafson, 2009). During an intervention program where breast cancer patients participated in a support group, individuals' insightful disclosure, measured through LIWC, improved emotional well-being and reduced negative mood (Shaw et al., 2009). Similarly, expressing positive emotion in online breast cancer support group increased psychological benefits (Han et al., 2008; Han et al., 2011).

1.3.2.3. Effective Online Supportive Communication

Some studies examined the properties of the effective online supportive communication. First, previous interaction history among other users affects the quality of the supportive messages provided in online support groups. Unlike in supportive communication happening in face-to-face, individuals often can see previous interaction history among other members in online platforms. When writing a comment on a support seeking post, support providers can read and be affected by the preceding posts and comments. For example, support providers wrote more supportive comments when previous comments on the post were more supportive (Li & Feng, 2015). Also, appreciative replies from the support recipient to previous supportive comments solicited more supportive responses (Li, Feng, & Wingate, 2018).

Second, social context cues in the support seeking posts affects the likelihood of receiving support and the quality of the support. In online, individuals use the social context cues available on the platform, such as the information in user profiles and the bandwagon cues, to form impression on others (Walther, 2011). This impression formed on the support seeker can affect the quality of the support one provides. Support providers wrote support messages higher in person-centeredness, politeness, and self-disclosure when the support seeking posts included more personal cues (e.g., portrait in the profile picture, first name in the username) (Li, Feng, Li & Tan, 2015; Feng, Li, & Li, 2016). Also, support providers provided support higher in person-centeredness when the support seeker's profiles were more negatively valenced (Youngvorst & High, 2018). Not only the social context cues the support seekers use to present themselves, such as profile picture and username, but also the cues indicating the other users' reaction to the support seeking posts affect the support provision behaviors. For example, individuals were more likely to forward and contribute to the support threads when the bandwagon cues, such as the

number of views, replies, and shares, indicated a greater popularity of the thread (Kim & Sundar, 2011).

1.3.3. Online Support Groups

An important phenomenon related to online supportive communication is *online support groups*. While some types of online supportive communication happen dyadically through direct messaging, the rise of social media facilitated supportive communication in groups. Supportive communication can happen in groups in diverse types of online platforms, such as Facebook Timeline and Twitter where one uploads a support seeking post and multiple friends comment. However, online support group is a specific type of social space that is formed and maintained with a specific purpose of helping members recover from a distressful situation. Online support groups are voluntary collectivities whose members seek and provide social support on a topic of shared interest (Sproull, 2004). In online support groups, individuals who often do not know each other join virtual communities to "transmit and obtain information, provide and receive emotional support, socialize and form interpersonal relationships, and experience comradeship with others sharing a similar distress" (Barak et al., 2008, p. 1868). They are distinguished from therapy groups, in that they do not involve targeted professional manipulation or trained professional leaders and that members can join or leave at any time (Barak et al., 2008).

Online support groups are important phenomena considering their prevalence and positive impact on individuals. Since their emergence in the 1990s, online support groups have grown into a mass social phenomenon, existing on almost all possible topics such as cancer, dyslexia, divorce, and caregiving (Fox, 2012). Support groups can help individuals' coping by allowing emotional comfort from others sharing feeling and experience, opportunities to become both a helper and a receiver, and downward comparison with other members in worse situations

than their own (Cohen et al., 2000). They can be especially helpful for those who are socially disadvantaged. People who lack social support in off-line or socially disadvantaged were benefited to a greater extent by the online support groups than those who have abundant social support from family and friends (Rains & Keating, 2011; van Ingen & Wright, 2016; DeAndrea, 2015).

The findings from the studies of the supportive communication between dyads can be transferred to the supportive communication happening in support groups, as supportive interaction between a dyad can be embedded in support groups. For example, in a support group for the caregivers of cancer patients, a member may provide informational support to another member who seeks support. However, online support groups require attention from the communication researchers as a separate research topic, as dyadic supportive communication and supportive communication in support groups differ in their components as well as the mechanisms guiding their effectiveness. For example, in a support group, where one is placed in the network of members predicted the quality of the support one gets and the diversity of the source of support (Pan et al., 2017). Also, the pattern of from whom one receives support from and to whom one gives support to predicted the perceived support (Uehara, 1990). Such characteristics of support groups as network characteristics and exchange structure are not in the scope of examination when studying dyadic supportive communication. The frameworks from the fields of organizational communication and social network can be especially helpful, considering the theoretical perspectives developed in the fields to study the interactions happening in groups.

1.4. Limitations with the Current Research on Online Supportive Communication

Even though online supportive communication has been researched from diverse perspectives, the current research is limited in several respects. First, most of the studies have the predictors and outcomes operating on the level of individual support episodes between a dyad. They focused on answering how information available to a support giver at the time of the support provision affects the quality of the specific supportive message (Li & Feng, 2015; Li, Feng, & Wingate, 2018; Feng, Li, & Li, 2013; Li, Feng, Li & Tan, 2015; Youngvorst & High, 2018). However, social support rarely is a one-time event where one either gives or receives support. Instead, it often happens in a group through a complex and dynamic process where individuals act as both givers and receivers over time (Uehara, 1990). In online support groups, supportive communication happens among large groups of people within a longer timeframe (Barak et al., 2008). This emphasizes the need to examine group processes and relevant outcomes during supportive communication.

Second, while some studies examined how some group characteristics predict support outcomes, these studies are limited in illuminating the causality between the factors and outcomes. For example, some studies examined how network structure and individuals' location in a support group affect perceived and received support in the group within a timeframe (e.g., Pan et al., 2017; Uehara, 1990). However, due to the difficulty of and ethical problems of manipulating large-scale networks (e.g., Kramer, Guillory, & Hancock, 2014), these studies are limited to being descriptive. They suggest correlations between the network characteristics and outcomes but do not allow us to understand specific process of giving and receiving support that cause such outcomes.

Third, extant research of online supportive communication has mostly focused on the individual-level outcomes such as the perceived support and cognitive and behavioral change of

the support receivers, or the episode-level outcomes such as message quality. While this body of research answers the question of what makes an individual feel more supported and what makes a communication episode effective, effective online support group is more than the sum of effective supportive communication episodes. Certain properties of the group, such as individuals' commitment, participation, and the sense of bonding among the group members, are more directly relevant to the success of online support groups (Kraut et al., 2012). A few studies have examined participation and commitment as the outcome (e.g., Robinson & Tian, 2009; Yang et al., 2017), but considering the sparse literature, our understanding of the factors affecting such outcomes is limited.

In sum, the current research on online supportive communication is predominated by the traditional approach to studying supportive communication, which focuses on the elements of a communication episode such as source, recipient, and message characteristics. A few studies adopting the social network approach allowed the examination of the support group members' behaviors throughout a longer timeframe, but they are limited in establishing causality. Lastly, the extant research has overlooked the outcomes that are directly related to the effectiveness of the online support groups.

To address these limitations, this project examines social support happening in small-sized groups. Studying supportive communication in small-sized groups not only allows us to examine effective supportive communication happening in support groups (vs. dyads) but also enables us to employ experimental designs. My dissertation examines the outcomes of several rounds of giving and receiving support in an online support group, instead of the outcomes of one-shot support giving. Furthermore, I adopt the experimental design manipulating the giving and receiving behaviors to examine the causal effect of the supportive interaction on the

outcomes. Also, in examining effective support groups, I incorporate the group-level outcomes as both mediator and outcome. In specific, I examine how some types of online support groups are higher in social solidarity among the members, and in turn, make individuals feel stronger perceived support and commitment to the group.

CHAPTER 2. Support Exchange in Online Support Groups

In this chapter, I propose social exchange theories as a useful framework that can be used in the research of online support groups to address the limitations of the current research identified in the previous chapter. I propose that in online support groups, social exchange of support, or *support exchange*, happens. I define support exchange and discuss its characteristics in comparison to instrumental exchange, which has been the focus of previous social exchange research. Then, based on the extant social exchange theories on exchange structure and social solidarity, I make propositions on how exchange structure affects social solidarity in support groups.

2.1. Introducing Support Exchange as Social Exchange of Support

In online support groups, people engage in social exchange of support, or *support exchange*. I define support exchange as the process where individuals give and receive social support while being embedded in a relationship or a group and their supportive behaviors being dependent on the supportive behaviors of others. This concept comes from applying social exchange theories, which view human social interaction as an exchange involving costs and benefits and one's actions as contingent on rewarding reactions from others (Blau, 2017; Emerson, 1976; Ekeh, 1974; Homans, 1958). Support exchange is distinguished from the social support process researched by previous social support scholars. As overviewed in Chapter 1, previous research has focused on one-shot communicative acts, with individual supportive communication episodes and the elements in the episodes as the main subjects of research. However, in online support groups, people engage in reciprocal and mutual supportive communication comprised of multiple supportive communication episodes throughout their membership. Over a period of time, individuals participate both as support seekers and receivers.

Instead of viewing online support groups as the place where a series of one-shot supportive communication episodes occur, I view online support groups as the place where individuals often engage in support exchange, with their support giving behaviors dependent on each other.

2.2. Social Exchange, Instrumental Exchange, and Support Exchange
2.2.1. Characterizing Support Exchange in Relation to Instrumental Exchange

I conceptualize support exchange as a type of social exchange. Previous research of social exchange is dominated by the research of instrumental exchange[1], which is a type of social exchange that is different from support exchange. Since most of the social exchange theories were developed based on the research of instrumental exchange, the transferability of the theories to support exchange needs to be carefully assessed after comparing the nature of support exchange and instrumental exchange. In this section, I outline the characteristics of support exchange in relation to instrumental exchange.

First, both support exchange and instrumental exchange involve *sociality*. Sociality is a characteristic of the interaction where individuals perceive the exchange partner as a social actor so their interaction behaviors reflect their impression on the exchange partner and on their relationship with the partner. In the exchange involving sociality, a giving behavior conveys other meaning, such as goodwill, than merely transferring a value. For example, exchange in a stock market between two computer programs does not involve sociality. However, exchange between two long-term business partners will involve sociality, as they will inevitably build impression on each other and reflect the impression to their exchange behaviors.

Second, in support exchange, the amount of the value exchanged is less comparable than in instrumental exchange. Instrumental values, such as money and points, are quantifiable, so

exchange partners can directly compare the amounts they and others received. However, supportive messages are less comparable in their value compared to money or points. It is difficult to measure or compare the objective amount of supportiveness, since supportiveness is largely dependent on how individuals perceive the support, often independent of the message or behavior per se (Cutrona, Cohen, & Igram, 1990; Heller & Lakey, 1985).

Third, support exchange involves empathy, while instrumental exchange typically does not. Empathy, which is knowing, feeling, and responding compassionately to what another person is feeling, is an integral process in human communication (Levenson & Ruef, 1992). Empathy is a key psychological process in supportive message production. Support providers need to understand the support seeker's problematic situations and properly address the support seeker's emotional needs. Empathy positively predicted the ability to facilitate other's reappraisal of the problematic situations and the ability to discern high quality support from low quality support (Jones, Bodie, & Hughes, 2016). However, exchange of instrumental values does not require empathy. Giving money or points does not require in-depth understanding of the others' situations, unless it is preceded by the detection of the receiver's emotional needs, which would be considered as social support (i.e., instrumental support). In instrumental exchange, the giving behavior is an independent action of the giver, rarely involving the knowing or feeling of the other's feeling.

Fourth, unlike in instrumental exchange, the resource receiver's stressor in supportive interactions involving tangible support is salient. In support exchange, a support provider can either detect the support receiver's need without active support seeking from the support receiver or provide support following the active support seeking of the support seeker. In both cases, the support provider understands that the potential support receiver is experiencing a stressful

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situation. This characteristic distinguishes tangible support from instrumental exchange. The two types of exchange might be confusing at first look as they both involve the exchange of instrumental goods, but unlike instrumental exchange, tangible support involves the process of the support giver detecting the support receiver's hardship.

2.2.1. Two types of Support in Support Exchange

Within support exchange, there are different types of support varying on the two of the characteristics outlined above, comparability of the exchanged values and empathy. Two of the most widely studied and commonly exchanged types of social support in both online and off-line contexts are informational support and emotional support (Cutrona et al., 2007; Wang et al., 2012). Detailed review of the two types of support is included in Chapter 1. I claim that, even though both types of support exchange are lower in comparability of exchange value and higher in empathy than instrumental exchange, the difference appears larger for emotional support exchange than for informational support exchange. In other words, emotional support exchange is lower in comparability and higher in empathy than informational support exchange, which makes informational support exchange resemble instrumental exchange more than emotional support exchange does.

First, informational support is more comparable in its value than emotional support. Information is quantifiable (Kolmogorov, 1965; van Rooy, 2003), as is evident from many empirical studies of the effect of amount of information, or information quantity, on voter decision making (Tóth & Chytilek, 2018), consumer choice (Patton, 1981), and judgment accuracy and confidence (Tsai, Klayman, & Hastie, 2008). Suppose there are two friends, A from Seoul and B from Chicago. The two friends are planning trips to each other's hometown and giving each other some travel tips. If A gives a detailed list of restaurant recommendations in

multiple neighborhoods in Seoul to only receive the name of a restaurant in Chicago from B, A will think after the exchange that they gave *more* information to B than what B gave to A. The comparability of the amount of informational support may accompany the quid-pro-quo mentality, where the unbalance between the amounts of information given and received may create a sense of discomfort. In contrast, emotional support exchanged is hard to be compared in amount. What is comparable is receivers' perception, such as perceived support (e.g., Barak & Bloch, 2006; High & Young, 2018) and emotion enhancement (e.g., Bodie et al., 2012; Jones, 2004), but the amount of emotional support included in a supportive message, by itself, is hard to be quantified or compared. For example, a three-word message saying "I love you" from a sister might be larger in its perceived value than a long casually empathizing message from an acquaintance.

Second, exchanging emotional support requires more empathy than exchanging informational support. Exchanging support involves seeking and receiving support. Regardless of support type, support seeking often involves disclosure of one's problematic situations, but the type of self-disclosure may differ between emotional support and informational support seeking. For example, individuals were more likely to use self-disclosure to elicit emotional support and to ask questions to elicit informational support (Wang, Kraut, & Levine, 2015). Furthermore, providing emotional and informational support involves different cognitive and emotional mechanisms. Providing emotional support requires understanding the emotional need of the support seeker and feeling what the support seeker feels (Jones et al., 2006). Even though informational support accompanied by emotional support is more effective (Feng, 2009), generating action-focused informational support often only requires the cognitive access of information without going through the emotional process.

Table 2.1 has the summary of the characteristics of the different types of exchange. The table also characterizes three other types of support, esteem support, network support, and tangible support, that have received less attention in the previous research than emotional and informational support.

2.3. Applying Social Exchange Theories on Exchange Structure and Social Solidarity to Support Exchange

This project is not the first to apply the framework of social exchange to the research of social support. Previous research sought to apply the social exchange perspective to the research of social support, acknowledging that social support is embedded in an exchange relationship or an exchange network: "Social support is more often characterized now as social exchange rather than as a one-way provision of care or assistance" (Uehara, 1990, p.522). However, most of the previous studies merely used social exchange as a metaphor to make a point that social support involves giving and receiving, or costs and benefits. For example, Brown et al. (2014) devised a scale for social exchange happening in online self-help support groups by measuring the extent to which individuals engage in giving and receiving behaviors. Yan et al. (2016) adopted the social exchange framework to identify the perception of costs and benefits of individuals in sharing knowledge in online health communities.

Going further from just viewing supportive behaviors as the outcome of weighing cost and benefit, we can examine collectivistic outcomes of the supportive behaviors, such as social solidarity, using the theories established by the social exchange scholars in researching online support groups. Due to their wide applicability, social exchange theories constitute one of the major theoretical perspectives on social interaction and social structure. Scholars have developed

theories on diverse topics such status, power, commitment, emotion, and social solidarity in exchange structures (for review, see Cook et al., 2013). A line of research particularly relevant to the research of online support groups is the research of exchange structure and social solidarity (Ekeh, 1974; Kuwabara, 2011; Lawler et al., 2008; Molm et al., 2007; Willer et al., 2012).

2.3.1. Extant social exchange theories on exchange structure and social solidarity

Social solidarity is "the integrative bonds that develop between persons, and between persons and the social units to which they belong" (Molm et al., 2007, p.207). Some scholars have used the terms 'ties' (Lawler et al., 2008) in indicating the similar concept. Willer et al. (2012) defines solidarity as "a positive perception of the group and its members as structurally interdependent, united, and cohesive" (p.126). The underlying agreement among the many definitions and conceptualizations of solidarity is that it is a connection, tie, or bond formed between an individual and an external entity and that the external entity can be both the group and the other individuals in the group.

There are two types of social solidarity: person-to-person and person-to-group solidarity. Person-to-person solidarity, or interpersonal ties, is the integrative bond formed between individuals. Friendship is an example of the relationships maintained through person-to-person solidarity. Person-to-group solidarity is the bond individuals build to a social unit, based on some common ties such as their mission, values, or identity. Different groups differ in the degree to which they are based on the attachment among the members (i.e., person-to-person solidarity) or on the individuals' direct attachment to the group (i.e., person-to-group solidarity) (Prentice, Miller, & Lightdale, 1994). Lawler et al. (2008) makes a similar claim that person-to-person and person-to-unit ties should be distinguished. Despite how these scholars have emphasized the

importance of distinguishing the two types of social solidarity, theories on exchange structure and social solidarity to be introduced in the following propose the effect of exchange structure on social solidarity in general, without distinguishing between the two types.

Levi-Strauss (1969) and Ekeh (1974) proposed that the two exchange structures, direct reciprocal exchange and generalized exchange, generate different levels of social solidarity. Direct reciprocal exchange is an exchange characterized by reciprocity between two individuals, where A gives to B and receives back directly from B. Generalized exchange is an exchange characterized by reciprocity that involves all members in the group, where A gives to B but receives back from a third actor, C. Levi-Strauss (1969), in his anthropological analysis of kinship across different cultures, proposed that people exhibit the two different forms of exchange in their social lives. For example, a marriage practice observed in multiple cultures, where if a man from tribe X marries a woman from tribe Y, then a Y man must always be able to marry an X woman, is a form of direct reciprocal exchange. On the other hand, the matrilateral cross-cousin marriage practiced by some tribes, where a man could only marry the mother's brother's daughter, is a form of generalized exchange.

Building upon Levi-Strauss' anthropological work, Ekeh (1974) elaborated that direct reciprocal exchange and generalized exchange are fundamentally different in terms of the level of social solidarity they generate. According to Ekeh (1974), while direct reciprocal exchange is based on the quid-pro-quo mentality, generalized exchange is relatively devoid of such emotional tension. Thus, a group following the exchange structure of generalized reciprocity has a stronger social solidarity among the members compared to a group following the exchange structure of direct reciprocity.

Theorizing of exchange structure and social solidarity has continued to develop over the past four decades or so. Molm et al. (2007), in her theory of reciprocity in social exchange, identified two dimensions along which exchange structures vary. The first dimension is whether the benefits are reciprocated directly or indirectly. Along this dimension, exchange structures differ in terms of whether the exchange is dyadic between two parties or collective among three or more parties. For example, A and B give to each other in direct reciprocity, as in the case of the two friends giving each other rides at different points in time. In contrast, A gives to B and B gives to C in indirect reciprocity, as in the case of scholars providing manuscript peer-review service to their academic community. The second dimension is whether the benefits can flow unilaterally or only bilaterally. Along this dimension, exchange structures differ in terms of whether the timing of reciprocity can be delayed and whether each actor's giving depends on the joint actions of self and other. For example, when A gives to B based on the agreement that B also gives to A, the exchange happens bilaterally, as in *Craigslist* where people agree upon the product and price to be exchanged before the actual transaction takes place. However, when A gives to B without expecting immediately receiving from B, exchange happens unilaterally, as in *Freecycle* where members give away the items to the members who are in need (Willer et al., 2012). Placed on the two dimensions, direct reciprocal exchange is direct and unilateral, and generalized exchange is indirect and unilateral. Molm et al. (2007) also examined another form of exchange, negotiated exchange, which is direct and bilateral, but this form of exchange is not the focus of the current work, considering that negotiated support exchange rarely happens in online support groups.

Molm and her colleagues theorized and empirically confirmed through controlled lab experiments that generalized exchange generates a higher level of social solidarity than direct

reciprocal exchange does, which is consistent with what earlier scholars had observed (Ekeh, 1974; Levi-Strauss, 1969). They proposed three mechanisms that explain the difference between the two forms of exchange: risk of nonreciprocity, expressive value, and salience of conflict (Molm et al., 2007). First, risk of nonreciprocity is higher in generalized exchange where successful completion of an exchange is dependent on the actions of multiple others than in direct reciprocal exchange where only two individuals are required to complete an exchange. Due to the high risk involved in the exchange, strong social solidarity is formed once the risk is overcome and the exchange is accomplished. Second, the expressive value attached to the act of reciprocity, over and above the instrumental benefits produced by the exchange, is higher in generalized exchange than in direct reciprocal exchange. In generalized exchange, individuals benefit others to whom they do not owe any debt, unlike in direct reciprocal exchange where obligations are repeatedly created and repaid. Third, salience of conflict is lower in generalized exchange. Since there is no direct reciprocal relation between a benefactor and a recipient, the costs of exchange and any dissatisfaction with one's relative benefits are less directly tied to the other actor (Molm et al., 2007). Based on the three mechanisms, Molm et al. (2007) claimed that generalized exchange produces the greatest level of social solidarity, including trust, affective regard, perception of social unity, and feelings of commitment, followed by direct reciprocal exchange and negotiated exchange.

Lawler and his colleagues (2008) took a different approach from that of Molm and her colleagues in researching exchange structure and social solidarity. They argued that individuals experience positive or negative emotions during an exchange episode and later direct the emotions to the social ties with other individuals or with the group. They theorized that the exchange structures that are characterized by stronger sense of shared responsibility make

individuals attribute the positive emotion more towards the exchange relationship than to themselves. According to the theory, direct reciprocal exchange has a stronger sense of shared responsibility than generalized exchange, as it requires more collaboration and joint action between the actors to be accomplished. Through an experiment, they found that generalized exchange creates the weakest micro social order, followed by direct reciprocal exchange and productive exchange, which contrasts with the findings of Molm et al. (2008). Later, Kuwabara (2011) reconciled the gap between the works of Molm's and Lawler's by cooperativeness (vs. competitiveness) as an explanatory mechanism. He found that in the exchange situations perceived to be cooperative, Lawler's mechanism operates, while in the exchange situations perceived to be competitive, Molm's mechanism operates. However, he limited his discussion to the difference between negotiated exchange and reciprocal exchange, leaving generalized exchange out of examination.

2.3.2. Value of Researching Exchange Structure and Social Solidarity in Support Exchange

In exchanging support, people can follow the two exchange structures conceptualized in the theories reviewed above, direct reciprocal exchange and generalized exchange. A classic example of support exchange is social support among stranded motorists in a small town where individuals help one another when necessary (Yamagishi & Cook, 1993). In a small countryside where people get stranded often, there are two possible support exchange structures: two people can pair up and pick up each other when one of them is stranded, or anyone can help and be helped by anyone. The former is an example of direct reciprocal exchange of support, and the latter is one of generalized exchange of support.

Previous studies have observed that people follow both direct reciprocity and generalized reciprocity when exchanging support in groups (Faraj & Johnson, 2011; Lampinen, Huotari, & Cheshire, 2015; Uehara, 1990). In an ethnographic study, Uehara (1990) examined the two patterns of support exchange in the informal groups of low-income black women in the event of job-loss. Large scale network analyses of online communities observed both patterns of direct reciprocity and generalized reciprocity in online information support groups (Faraj & Johnson, 2011) and in an online community of people offering places to stay to travelers (Lauterbach et al., 2009).

While it is established that people follow the structures of direct and generalized reciprocity in exchanging support in groups, how exchanging support in each of the two structures leads to different levels of social solidarity in support groups remains unexplored. Applying the theories on exchange structure and social solidarity can bring a novel insight to the research of support groups, because social solidarity can be a useful mechanism explaining effective support groups. Previously, communication researchers have studied effective support groups by examining the elements of a supportive communication episode as predictors and the effectiveness of the supportive communication episodes as outcomes (Chapter 1). I study effective online support groups by examining the sequence of multiple exchange behaviors as predictors and solidarity, which is a characteristic of a group, not of an episode, as an outcome.

2.3.3. Effects of Exchange Structure on Social Solidarity in Support Exchange

I propose that exchange structure in support exchange will affect social solidarity in support groups. In doing so, I examine both person-to-person and person-to-group solidarity. Previous studies have tried to address both types of solidarity. Molm et al. (2007) found her conflict/risk-based mechanisms applying to both person-to-group and person-to-person

solidarity. They included person-to-person solidarity as a response to Lawler's questioning that the effect of exchange structure may differ on the evaluation of the other actor and the social unit. Other than this, the rationale on how the exchange structure will affect each of the person-to-person and person-to-group solidarity similarly or differently remains thin in Molm's work. Lawler, while emphasizing the uniqueness of person-to-group solidarity from person-to-person solidarity, only examined person-to-group solidarity in his study. To address the limitation, I examine person-to-group and person-to-person solidarity separately.

Exchange structure will affect person-to-group solidarity in support groups through the three mechanisms proposed by Molm et al. (2007): expressive value, risk of nonreciprocity, salience of conflict. The mechanisms developed by Molm in the instrumental exchange setting will apply consistently in support exchange. First, reciprocity in the generalized support exchange will convey stronger expressive value than reciprocity in direct reciprocal support exchange. People will infer greater expressive value from the supportive behavior of someone whom they have not helped before than from the supportive behavior of someone whom they have helped before. Second, generalized support exchange will involve greater risk of nonreciprocity than direct reciprocal support exchange. In generalized support exchange, the likelihood of one receiving support is dependent on the actions of multiple others than in direct reciprocal exchange where only two individuals repeatedly help each other. Third, generalized support exchange will involve less salience of conflict than direct reciprocal support exchange. In generalized support exchange, since the person one receives support from and the person one gives support to differ, it is less likely for one to assess fairness with another actor.

As Molm suggested, higher expressive value, higher risk of nonreciprocity, and lower salience of conflict generate stronger social solidarity. The mechanisms will apply consistently in

support exchange, making generalized support exchange generate stronger solidarity than direct reciprocal support exchange. It should be considered that Lawler et al. (2008), as reviewed previously, claimed the opposite direction, proposing that direct reciprocal exchange will generate stronger person-to-group solidarity through the sense of shared responsibility. However, Lawler's proposal will not apply to support exchange. In order for the sense of shared responsibility, the mechanism proposed by Lawler, to operate, people should perceive the exchange *as a task to be completed*. In Lawler et al.'s study (2008), after the exchange task, individuals felt better, and those who perceived the task to be 'our collective task' by contributing to a common pool (productive exchange) attributed the positive feeling to 'us', the social unit, instead of to 'me'. The mechanism makes direct reciprocal exchange more beneficial than generalized exchange because in direct reciprocal exchange individuals "cannot accomplish the desired outcome alone but stand to reap significant benefits from cooperation" (Lawler, 2009, *p*. 525). For this mechanism to operate in support exchange, individuals should perceive 'you and me both receiving support' as a *task* to accomplish. However, this mentality is unlikely in the context of social support, considering how social support happens organically and naturally in everyday social life. Therefore, the following proposition on exchange structure and person-to-group solidarity in support exchange can be inferred.

> *Proposition 1: Generalized support exchange will generate stronger person-to-group*
>
> *solidarity than direct reciprocal support exchange.*

However, the difference between the two exchange structures in the risk of nonreciprocity will be not as large as the difference between the two exchange structures in instrumental exchange. As explicated in Section 2.1, support exchange is less comparable in the amount of the exchanged value than instrumental exchange. The risk of nonreciprocity occurs in

the situations where there is a "potential for one actor to incur a net loss in exchange by giving benefits to an exchange partner and receiving little or nothing in return" (Molm et al., 2007, p. 212). For individuals to assess whether there is a potential to receive 'little' than what one gave, the benefits they give and receive should be comparable in their amount.

Similarly, the difference between the two exchange structures in the salience of conflict will be not as large as the difference between the two exchange structures in instrumental exchange. Individuals' perception of an exchange partner as conflictual (vs. cooperative), comes from their assessment of the potential that the partner will gain more than they will. This is implied in Molm et al.'s (2007) explanation of the mechanism where they claim that the "awareness of the competitive, conflictual elements of exchange" (p. 214) is most intense when the exchange outcomes are more easily compared. Therefore, the following proposition can be inferred.

> *Proposition 2: The benefit of generalized exchange over direct reciprocal exchange in promoting person-to-group solidarity will be less pronounced in support exchange than in instrumental exchange.*

Furthermore, within support exchange, informational and emotional support exchange will differ in the magnitude of the difference in the risk of nonreciprocity and salience of conflict between the two structures. As explicated in Section 2.2.1, the comparability of the exchanged value is stronger in informational support exchange than in emotional support exchange. Therefore, with the weaker comparability of the exchanged value, emotional support exchange will show smaller difference in the risk of nonreciprocity and salience of conflict between the two structures than informational support exchange. The following proposition on exchange structure, support type, and person-to-group solidarity can be inferred.

Proposition 3: The benefit of generalized exchange over direct reciprocal exchange in promoting person-to-group solidarity will be more pronounced in informational support exchange than in emotional support exchange.

While Molm's three mechanisms will operate in affecting person-to-person solidarity (Molm et al., 2007), I propose two additional mechanisms through which exchange structure affects person-to-person solidarity in support groups: mutual self-disclosure and reciprocal relationship. First, in direct reciprocal support exchange, mutual self-disclosure happens. Support exchange is the process involving the phase of support seeking and giving. During the support seeking phase, individuals engage in self-disclosure, as they need to explain the hardships they are going through. In direct reciprocal support exchange, two actors engage in mutual self-disclosure. Mutual self-disclosure that happens during support seeking builds affinity and social companionship between two individuals (Tichon & Shapiro, 2003). Social penetration theory (Altman & Taylor, 1973) and the interpersonal process model of intimacy (Aron et al., 1997; Reis, 2018) suggest that intimate and trusting relationship develops as two individuals mutually self-disclose vulnerable and personal information, respond to each other's disclosures, and perceive the others as responsive. From the perspective of this model and the related theories (Aron et al., 1997; Reis, 2018; Tichon & Shapiro, 2003), direct reciprocal exchange of social support will generate stronger solidarity between two individuals than generalized exchange of social support.

Second, in direct reciprocal support exchange, reciprocal relationships are formed in dyads. By definition, two individuals give to and receive from each other in direct reciprocal exchange, while one person is a giver and another a receiver in generalized exchange (Ekeh, 1974). Between two individuals, reciprocity in providing support is associated with positive

mood, whereas over-benefiting is associated with the sense of indebtedness and under-benefiting with the sense of burden (Gleason et al., 2003; Gouldner, 1960; Liang et al., 2001; Robinson & Tian, 2009; Uehara, 1995). For example, research shows that, across individuals of different age groups, reciprocity is perceived as a key factor of friendship between two people (Laursen & Hartup, 2002; Patterson et al., 1993). Person-to-person solidarity between the two individuals who provide support to each other will be stronger than that between the two individuals where one only receives and the other only gives. Following this mechanism, direct reciprocal exchange of social support will generate stronger person-to-person solidarity than generalized exchange of social support will.

Unlike how previous theories applied their mechanisms to both person-to-person and person-to-group solidarity without making distinction, the two mechanisms, mutual self-disclosure and reciprocal relationship, will apply to person-to-person solidarity only. This is because the mutuality of self-disclosure and the reciprocal relationship are the mechanisms operating on the dyadic level. Solidarity formed through these mechanisms is formed between an individual and another social interaction partner who does self-disclosure or gets help. Interpersonal communication and support literatures supporting the mechanisms indicate the positive effects of mutual self-disclosure and mutual helping on dyadic outcomes such as common bond, affinity, social companionship, and intimacy between pairs of online community members, pairs of strangers, and couples (Tichon & Shapiro, 2003; Aron et al., 1997; Gleason et al., 2003; Liang et al., 2001). However, there is no rationale or previous findings supporting that these two mechanisms affect the solidarity individuals form with the group.

The two mechanisms suggest that direct reciprocal support exchange will generate stronger person-to-person solidarity than generalized reciprocal support exchange. This conflicts

against what Molm's mechanisms suggest, which is that person-to-person solidarity will be stronger in generalized reciprocal support exchange than in direct reciprocal support exchange. I claim that the mechanisms of mutual self-disclosure and reciprocal relationships will override Molm's mechanisms, considering that Molm's mechanisms are weakened in support exchange (Proposition 2). Therefore, the following proposition on exchange structure and person-to-person solidarity in support exchange can be inferred.

Proposition 4: Direct reciprocal support exchange will generate stronger person-to-person solidarity than generalized support exchange.

Within support exchange, informational and emotional support exchange will differ in the magnitude of the effects of mutual self-disclosure and reciprocal relationships on person-to-person solidarity. As explicated in Section 2.2.1, emotional support exchange involves heavier empathy than informational support exchange. Empathy is the key mechanism through which mutual self-disclosure and reciprocal relationship promote person-to-person solidarity. Mutual self-disclosure cultivates intimacy through the process where individuals feel understood, validated, and cared for by each other (Reis, 2018). Similarly, the notion that two people are in a reciprocal relationship, or the notion that 'we support *each other* in time of need', will promote relational satisfaction through the process of empathy. When the two interaction partners understand each other's needs and (often negative) feeling of needing something, the relational satisfaction coming from fulfilling each other's need will be stronger. Therefore, the following can be inferred:

Proposition 5: The benefit of direct reciprocal exchange over generalized exchange in promoting person-to-person solidarity will be more pronounced in emotional support exchange than in informational support exchange.

Table 2.2 has the summary of the mechanisms operating on person-to-group and person-to-person solidarity in each type of support exchange.

CHAPTER 3. Exchange Structure, Social Solidarity, and Effective Online Support Groups

In this chapter, I propose the hypotheses on exchange structure, social solidarity, and effectiveness of online support groups based on the propositions in Chapter 2. Then, I present a controlled group lab experiment testing the hypotheses.

The propositions in Chapter 2 on exchange structure and social solidarity are applicable to support exchange in both on- and off-line, but they are particularly useful in the research of online support groups for several reasons. First, most of group support these days happen in online (Fox, 2012; Pew Research Center, 2015). Second, social solidarity bears particular importance in online groups. Compared to off-line communities, forming social solidarity in online communities is more challenging, because unlike in most of the off-line groups where members repeatedly interact and develop relationships, individuals have less motivation to commit and contribute for strangers in online groups (Kraut & Resnick, 2012). Therefore, promoting social solidarity remains as a challenge in building online communities. Third, the findings of the research can have important pragmatic implications in designing online support groups. How we design social technology can facilitate some exchange structure over others. For example, friending feature and direct messaging feature may facilitate direct reciprocal exchange of support, while bulletin board system or anonymity may facilitate generalized reciprocal exchange.

3.1. Proposing Hypotheses

3.1.1. Exchange Structure and Social Solidarity

As proposed in Chapter 2, support exchange structure will affect person-to-group and person-to-person solidarity in online support groups. Based on each of Proposition 1 and 3, I

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propose the hypotheses on the main effect of exchange structure (H1) and the interaction effect between exchange structure and support type (H2) on person-to-group solidarity.

H1: Social support exchange in generalized exchange structure will generate stronger person-to-group solidarity than social support exchange in direct reciprocal exchange structure.

H2: The difference in person-to-group solidarity between direct reciprocal exchange and generalized exchange will be larger in informational support exchange than in emotional support exchange.

Based on each of Proposition 4 and 5, I propose the hypotheses on the main effect of exchange structure (H3) and the interaction effect between exchange structure and support type (H4) on person-to-person solidarity.

H3: Social support exchange in direct reciprocal exchange structure will generate stronger person-to-person solidarity than social support exchange in generalized exchange structure.

H4: The difference in person-to-person solidarity between direct reciprocal exchange and generalized exchange will be larger in emotional support exchange than in informational support exchange.

3.1.2. Social Solidarity and Effective Online Support Groups

In the empirical study, I explore the practical implications of the propositions by examining how the effects of exchange structure on social solidarity extend to the effectiveness of online support groups.

Effectiveness of a support group can be examined from two perspectives. First, effective support group is a group where individuals engage in interactions that they perceive as

supportive. Perceived supportiveness is one of the most widely adopted assessments of social support outcome (Goldsmith et al., 2000). Even though most of the previous studies have measured perceived supportiveness on the message level (e.g., Blight et al., 2015; Goldsmith et al., 2000) or as individuals' perception of the amount of available support in general (e.g., Gruenewald & Seeman, 2010; Uchino, 2009), perceived supportiveness of organizations (e.g., Hayton, Carnabuci, & Eisenberger, 2011) or online groups (e.g., Mok, Jorm, & Pirkis, 2016) has also been the variable of interest in research on organizations and groups. Therefore, I examine individuals' *perceived supportiveness of the supportive interaction in the group* as an indicator of the effectiveness of online support groups.

Second, effective support group is a group where support seekers can receive support from other members in time of need. In other words, the effectiveness depends on the extent to which members provide support to others who are in need in the community. Many studies of online communities used individuals' commitment to the group as an indicator of successful online communities (e.g., Faraj & Johnson, 2011; Kraut & Resnick, 2012; Ling et al., 2005; Preece, 2001). Compared to off-line communities, encouraging commitment in online communities is more challenging, because unlike in most of the off-line groups where members repeatedly interact and develop relationships, individuals have less motivation to commit and contribute for strangers in online groups. Therefore, researchers who study online community have identified promotion of commitment as a challenge in building online communities (Kraut & Resnick, 2012). Indeed, even well-established online communities exhibit power-law distribution of contribution where a small minority contribute most of the content and experience the problem of undercontribution (Kraut & Resnick, 2012). Therefore, I examine individuals' *commitment to the support group* as another indicator of an effective online support community.

In general, social solidarity and effectiveness of a support group are likely to correlate positively. However, I propose that person-to-person and person-to-group solidarity will affect each of the two indicators of the effectiveness of a support group, perceived supportiveness and commitment to the group, to different degrees.

First, both person-to-person and person-to-group solidarity will positively predict perceived supportiveness. However, I predict that, compared to person-to-group solidarity, person-to-person solidarity will be more closely related to the perceived supportiveness of the support group. Individuals perceive personal relationships they have as a source of support, as can be seen from how previous studies measured perceived support by asking individuals' available support sources, such as family members, friends, and significant other (Zimet et al., 1988). Therefore, the notion that one is connected to other individuals should be a stronger predictor of the perceived supportiveness of the exchange. Person-to-group solidarity may be positively correlated to perceived support, but its effect will be smaller than the effect of person-to-person solidarity. I hypothesize:

> *H5a: Both person-to-person and person-to-group solidarity will positively predict perceived support.*
>
> *H5b: The association between person-to-person solidarity and perceived supportiveness of support group will be stronger than the association between person-to-group solidarity and perceived support.*

Second, person-to-group solidarity will positively predict commitment to the support group. In online communities, a new member who does not have history of interaction lacks individuation cues, likely to be perceived as a deindividuated group member (Postmes et al., 1998). Whether to commit to the group should depend on the relationship one has with the

group. Indeed, social loafing happens less when people like the group more, and commitment to an online community group increases willingness to contribute to the community (Karau & Williams, 1993; Kraut & Resnick, 2012). Person-to-person solidarity one built with existing members in the community may have a spillover effect to the group they belong to, but the effect will be smaller than the effect of person-to-group solidarity. Therefore, I hypothesize:

> *H6a: Both person-to-person and person-to-group solidarity will positively predict commitment to the support group.*

> *H6b: The association between person-to-group solidarity and commitment to the support group will be stronger than the association between person-to-person solidarity and commitment to the support group.*

For a more comprehensive understanding and the practical value of the research, I test the mediation relationships among exchange structure, social solidarity, and effectiveness of a social support community.

> *H7: Individuals in generalized exchange structure will exhibit stronger commitment to the support group to the community than those in direct reciprocal exchange structure, mediated by person-to-group solidarity.*

> *H8: Individuals in direct reciprocal exchange structure will experience stronger perceived support than those in generalized exchange structure, mediated by person-to-person solidarity.*

3.2. Method

3.2.1. Design

The hypotheses proposed in the previous section were tested through a controlled lab experiment with a 2 (exchange structure: direct reciprocal exchange vs. generalized exchange) x 2 (support type: emotional vs. informational support) design. A website called SMOP (https://smop-jr.herokuapp.com/) was built for the study. The website has the interface of the existing online support groups where users can upload posts, read others' posts on the feed, and comment on the posts. The study was designed as a group experiment involving three participants in a group support session. On SMOP, three participants exchanged social support on the issues related to their college life experiences following the direct reciprocal or generalized structure, depending on the condition they were randomly assigned to. Half of the participants were asked to exchange emotional support, while the other half were asked to exchange informational support.

To manipulate the exchange structure, I had to manipulate the order the three participants post and comment in a session. The participants were instructed to follow a series of instructions signaling when to write the support seeking posts and the support providing comments. The instructions were sent automatically from a master computer to each of the three computers through Keyboard Maestro. Keyboard Maestro is a program where one can write the macros that trigger certain actions when certain conditions are met. The master computer was networked with the three computers that participants used, which enabled remotely activating the macros on the three computers using the master computer. Each macro included a series of the 'notification window' actions which were triggered in sequence throughout 54 minutes. In total, a macro triggered 11 to 13 pop-up windows with the instructions asking participants to post, comment, or wait until other users post. The three macros activated on the three computers in a session, as a

whole, orchestrated the group support exchange following the exchange structure for the experimental condition.

Support type was manipulated by using different cover stories participants read at the beginning of the study. Participants were told that SMOP is a platform for exchanging either emotional or informational support. The examples of what each type of support is, and is not, were provided in the cover story. Participants were also reminded of the support type each time they received an instruction to comment.

3.2.2. Participants

Data were collected from the undergraduate students registered in the communication and psychology classes at University of California, Davis. IRB approval was obtained prior to subject recruitment and data collection. Participants were recruited through the Psychology Research Participation System where the undergraduate students voluntarily register for a study in return for a small amount of extra credit. In total, 354 registered for the study. Excluding the 27 who did not show up, there were 327 participants. Since the study is a group experiment requiring three individuals for a session, a session was cancelled when one or more participants registered for the session failed to show up. In total, 95 sessions (23 Emo-Dir, 23 Emo-Gen, 23 Inf-Dir, 26 Inf-Gen) were run with 285 participants. Due to the nature of the study, the manipulation of the exchange structure became unsuccessful when a participant failed to follow an instruction. In 25 sessions, one or more participants failed to follow the instructions, and these sessions were excluded from the final analysis. In the final analysis, data from the total of 71 sessions with 213 participants were used (17 Emo-Dir, 18 Emo-Gen, 16 Inf-Dir, 20 Inf-Gen). 77.0% ($n = 164$) of the participants were female, and 23.0% ($n = 48$) were male, with one person identifying as non-binary. The majority of the participants were Asian (58.2%, $n = 124$),

followed by Hispanic/Latino (16.9%, $n = 36$), White/Caucasian (14.1%, $n = 30$), African American (2.3%, $n = 5$), and others (5.6%, $n = 12$).

3.2.3. Procedure

Upon arrival at the lab, participants were seated in front of a computer. To prevent any confounding effect of the interaction among the participants outside of SMOP, each participant was guided to a separated room with a computer as soon as they arrived at the lab. After being seated, the participants were told to wait without using the computer until the study starts. When all three participants arrived and were seated, a research assistant handed out three paper-and-pencil survey packets to each participant. After receiving the packets, the participants were told to start working on Packet A. Packet A included the cover story of the study, which participants were asked to read carefully, and the pre-interaction survey where participants were prompted to think of the two problems to be shared on SMOP and to rate perceived severity of those problems. After 10 minutes, the research assistant went around the rooms and checked on whether all participants have finished the packet.

After confirming that all three have completed the pre-interaction survey, the RA started the macros remotely using the master computer. The macros sent the first instruction as soon as they were started and the last one after 54 minutes. In between the first and the last instructions, the participants received 9 to 11 instructions, depending on the condition and the position in the triad they were randomly assigned to. There were three types of instructions: post, comment, and wait. The 'post' instructions asked participants to upload a support-seeking post about the problem they came up with in the pre-interaction survey. The 'comment' instructions asked participants to write a supportive comment to the most recent support-seeking post uploaded by another user. The 'wait' instructions asked participants to wait for another user to post. During

they wait, the participants were asked to provide feedback on SMOP by working on Packet B, which was included in the study as a time-filler task. Across all conditions, the participants posted and commented twice, in the order differing across the experimental conditions and their positions in the triad. The sequence of the instructions for each experimental condition and position is in Appendix A.

When using SMOP, participants used the accounts created ahead of time. I created three accounts with the usernames that do not imply any gender or age identity (i.e., Blue Diamond, Red Ruby, and Yellow Pearl) and used the three consistently across all sessions. This was to minimize the potential confounding effect of the perception of other users from the information in the profile. The computers were logged in to the accounts before the participants arrived at the lab. Before receiving the first instruction to post or comment, participants were given time to explore SMOP. This was to let participants familiarize themselves with the interface and the website. Four default posts and four default comments were available at the beginning of each session to increase the realism of the cover story that SMOP is a support group with real users. The default posts and comments were same across all sessions.

54 minutes into the macro, participants received the last instruction which told them that the study is over and asked them to start working on Packet C. Packet C included the post-interaction survey which measured the outcome variables of interest. When the participants received the last instruction, the RA went around the three rooms and asked them to bring the packets to the waiting room once they are done. The packets were collected, and the data were inputted by the RAs on Google spreadsheet. The interaction data including the post and comment contents were saved and uploaded on Google Drive.

3.2.4. Measures

3.2.4.1. Problem Seriousness

Problem seriousness was measured with four items adopted from Feng and MacGeorge (2010) ("This was a major problem," "The problem was an important one," "The problem was a significant one," and "The problem was a trivial one" [reverse coded]) on 7-point Likert-type scales (1 = *strongly disagree*, 7 = *strongly agree*). Participants rated the perceived problem seriousness for each of the two problems they shared. The ratings of the two problems were averaged. Reliability of the scale was satisfactory ($\alpha = 0.64$).

3.2.4.2. Person-to-person solidarity

Person-to-person solidarity was measured on the three components: trust, affective regard, and liking. Participants rated person-to-person solidarity for each of the two interaction partners. The ratings of the two partners were averaged.

Trust was measured with three items. On a 7-point scale, subjects rated their impression of the partner as untrustworthy/trustworthy, unreliable/reliable, and undependable/dependable. The three responses were averaged, and the reliability of the scale was good ($\alpha = 0.93$).

Affective regard was measured with four items. On a 7-point scale, subjects rated their impression of the partner as negative/positive, awful/nice, bad/good, and uncooperative/cooperative. The three responses were averaged, and the reliability of the scale was good ($\alpha = 0.95$).

Liking was measured with ten items adopted from the Interpersonal Attraction Scales (McCroskey & McCain, 1974). On a 7-point Likert-type scale, participants rated to what extent they agree with the statements: "I think (the partner) could be a friend of mine", "I would like to have a friendly chat with (the partner)", "It would be difficult to meet and talk with (the partner)", "We could never establish a personal friendship with each other" [reverse coded],

"(the partner) just wouldn't fit into my circle of friends" [reverse coded], "(the partner) would be pleasant to be with", " I feel I know (the partner) personally", "(the partner) is personally offensive to me" [reverse coded], "I don't care if I ever get to meet (the partner)", "I sometimes wish I were more like (the partner)". The ten responses were averaged, and the reliability of the scale was satisfactory ($\alpha = 0.77$).

3.2.4.3. Person-to-group solidarity

Person-to-group solidarity was measured with six items used by Molm et al. (2007) and Lawler et al. (2008). On 7-point scales, participants rated how much they feel the support group is adversaries/partners, coming apart/coming together, distant/close, fragile/solid, divisive/cohesive, diverging/converging. The six scores were averaged, and the reliability of the scale was good ($\alpha = 0.89$).

3.2.4.4. Perceived supportiveness

Perceived supportiveness was measured with six items. Some items were adopted from Collins & Feeney (2004), and some were adjusted to the context of the current study. On 7-point scales, participants rated to what extent they agree with the statements: "The interaction made me feel better," "The interaction was upsetting" [reverse coded], "Using SMOP let me know I am being cared by others," "The interaction was not supportive" [reverse coded], "The interaction increased my confidence about solving the problem," "The interaction made me feel more comfortable about the problem." The six responses were averaged, and the reliability of the scale was good ($\alpha = 0.81$)

3.2.4.5. Commitment

Commitment was measured with two items. On a 7-point Likert scale, participants rated to what extent they agree with the statements: "I feel committed to the SMOP community" and

"I am willing to stay in the SMOP community after the study." The two responses were averaged, and the reliability of the scale was acceptable ($r = 0.59$).

3.2.5. Manipulation Check

To determine whether the exchange structure was manipulated successfully, I manually sorted out the sessions where one or more participants failed to follow the instructions. Only the sessions where all participants followed the exchange order for the condition were kept for the analyses. In total, 6 out of 29 Emo-Dir, 5 out of 28 Emo-Gen, 8 out of 31 Inf-Dir, and 6 out of 32 Inf-Gen sessions were excluded due to having at least one participant failing to follow the instructions. To ensure that the participants were aware of to whom they provided and from whom they received support from, I asked the participants to recall their own username as well as the usernames of the users who commented on their first and second support-seeking posts at the beginning of the post-interaction survey. All participants in the successful sessions correctly answered the recall questions.

To determine whether the support type was manipulated successfully, in the post-interaction survey, I asked participants to what extent they think they received emotional and informational support from the interaction. On 7-point Likert type scales, participants rated the extent to which they agree with the following statements about the interaction: "I felt I was being understood by others," "I felt emotionally comforted," "I received information to help resolve the problems I am currently experiencing," and "I received helpful advice." The first two items were averaged to measure perceived emotional support, and the last two were averaged to measure perceived informational support. Manipulation was successful. On average, participants in the emotional support ($M = 5.70$, $SD = 0.88$) condition rated the perceived emotional support significantly higher than those in the informational support condition ($M = 5.00$, $SD = 1.35$), t

(184.58) = -4.46, $p < 0.01$. On average, participants in the informational support ($M = 5.68$, $SD = 0.91$) condition rated the perceived informational support significantly higher than those in the emotional support condition ($M = 3.56$, $SD = 1.61$), t (161.45) = 11.72, $p < 0.01$.

3.2.6. Analysis

To test H1, H2, H3, H4, H5a, and H6a, I conducted ordinary least square regression analyses to test the hypotheses using R. The analyses were conducted on the individual level, treating each participant as a case. Considering the possible group level effects of the triads, I also report the analyses results of the mixed models including the random effects of the triads. For exchange structure, generalized exchange was coded as 0 and direct exchange as 1. For support type, informational support was coded as 0 and emotional support as 1. Based on the previous research that perceived problem seriousness affects support outcome (Feng & MacGeorge, 2010), perceived problem seriousness was controlled in all analyses. Also, as perceived quality of each comment is likely to affect the support outcome, perceived comment quality was also controlled.

To test each of the two hypotheses comparing the effect size of the two types of solidarity (H5b, H6b), two structural equation models were constructed. The paths from each of person-to-group and person-to-person solidarity to the dependent variables (i.e., perceived support and commitment) were drawn, with perceived problem severity and comment quality as controls. The variables of interest were entered as latent variables, and survey items measuring the variables were loaded on the latent variables. In the first model, the regression coefficients of the person-to-person and person-to-group solidarity were constrained to be equal. The second model was same with the first model, except that the coefficients of the person-to-person and person-to-group solidarity were allowed to vary. If the improvement in the fit from the first to the second

model was significant, it was considered that the effect of one type of solidarity is significantly stronger than the effect of the other type of solidarity. Graphical representation of the models is in Figure 3.1.

To test the hypotheses testing the mediating effects (H7, H8), I used 'mediate' package in R to conduct the causal mediation analysis. In specific, I examined the average causal mediation effects (ACME) and the average direct effects (ADE) of a predictor on an outcome. When only ACME is significant, the result indicates that the mediator fully mediates the effect of the predictor on the outcome. If both ADE and ACME are significant, the result indicates a partial mediation of the mediator.

3.3. Results

Descriptive statistics and correlations among the key variables are in Table 3.1. Descriptive statistics of the key variables for each experimental condition are in Table 3.2. Boxplots of the key variables for the four experimental conditions are in Figure 3.2. The regression analysis results are attached in Tables 3.3, 3.4, and 3.5.

H1 hypothesized that social support exchange in generalized exchange structure will generate stronger person-to-group solidarity than social support exchange in direct reciprocal exchange structure. Controlling for the perceived comment quality and the perceived problem seriousness, exchange structure did not have a significant effect on person-to-group solidarity (B = .041, SE = 0.103, p = 0.692). The coefficient of exchange structure remained non-significant in the mixed model with the random effect of a triad (B = 0.041, SE = 0.103, p = 0.693). Therefore, H1 was not supported.

H2 hypothesized that the difference in person-to-group solidarity between direct reciprocal exchange and generalized exchange will be larger in informational support exchange

than in emotional support exchange. The regression model predicting person-to-group solidarity with exchange structure, support type, and the interaction term between the two was constructed to test the hypothesis. Controlling for perceived severity and comment quality, the coefficient of the interaction term was not significant ($B = 0.175$, $SE = 0.208$, $p = 0.401$). The result was consistent in the mixed model with the random effect of triads ($B = 0.174$, $SE = 0.208$, $p = 0.403$). Therefore, H2 was not supported.

H3 hypothesized that social support exchange in direct reciprocal exchange structure will generate stronger person-to-person solidarity than social support exchange in generalized exchange structure. Controlling for the perceived comment quality and the perceived problem seriousness, exchange structure had a significant effect on person-to-person solidarity ($B = .184$, $SE = 0.073$, $p = 0.012$). In specific, direct exchange generated stronger person-to-person solidarity than generalized exchange did. The result was confirmed in the mixed model with the random effect of a triad ($B = .184$, $SE = 0.073$, $p = 0.012$). Therefore, H3 was supported.

H4 hypothesized that the difference in person-to-person solidarity between direct reciprocal exchange and generalized exchange will be larger in emotional support exchange than in informational support exchange. The regression model predicting person-to-person solidarity with exchange structure, support type, and the interaction term between the two was used to test the hypothesis. Controlling for perceived severity and comment quality, the coefficient of the interaction term was marginally significant ($B = -0.246$, $SE = 0.145$, $p = 0.091$). The result was consistent in the mixed model with the random effect of triads ($B = -0.246$, $SE = 0.145$, $p = 0.094$). The effect of exchange structure on person-to-person solidarity was larger in the informational support condition than in the emotional support condition. Therefore, H4 was not supported.

H5a hypothesized that both person-to-person and person-to-group solidarity will positively predict perceived support. Tested in separate regression models, person-to-person (B = .449, SE = 0.082, p < 0.001) and person–to-group solidarity (B = .312, SE = 0.059, p < 0.001) both positively predicted perceived support. The results were consistent in the mixed model with the random effect of a triad (person-to-person: B = 0.448, SE = 0.082, p < 0.001; person-to-group: B = 0.316, SE = 0.059, p < 0.001). Therefore, H5a was supported.

H5b hypothesized that the association between person-to-person solidarity and perceived supportiveness of support group will be stronger than the association between person-to-group solidarity and perceived support. To test H4b, the fits of the two structural equation models predicting perceived support were compared. The fit indices did not differ significantly between the two models ($\Delta AIC = 1.877$; $\Delta BIC = -1.421$; $\Delta\chi^2(1) = 1.923, p = 0.165$). Therefore, H5b was not supported.

H6a hypothesized that both person-to-person and person-to-group solidarity will positively predict commitment to the support group. Tested in separate regression models, person-to-person (B = .450, SE = 0.082, p < 0.001) and person–to-group solidarity (B = .802, SE = 0.133, p < 0.001) both positively predicted commitment to the support group. The results were consistent in the mixed model with the random effect of a triad (person-to-person: B = 0.802, SE = 0.133, p < 0.001; person-to-group: B = 0.649, SE = 0.093, p < 0.001). Therefore, H6a was supported.

H6b hypothesized that the association between person-to-group solidarity and commitment to the support group will be stronger than the association between person-to-person solidarity and commitment to the support group. To test H5b, the fits of the two structural equation models predicting commitment were compared. The fit indices did not differ

significantly between the two models ($\Delta AIC = 0.946$; $\Delta BIC = 4.244$; $\Delta \chi^2 (1) = 0.953, p = 0.329$). Therefore, H6b was not supported.

H7 hypothesized that individuals who engaged in generalized exchange will experience stronger commitment to the support group than those who engaged in direct reciprocal exchange and that this difference will be mediated by person-to-group solidarity. The causal mediation analysis showed no significant ACME ($B = 0.027$, 95% CI= -0.1112 – 0.16, $p = 0.68$) or ADE ($B = 0.060$, 95% CI= -0.2010 – 0.33, $p = 0.69$) of exchange structure on person-to-group solidarity. Therefore, H7 was not supported.

H8 hypothesized that individuals who engaged in direct reciprocal exchange will experience stronger perceived support than those who engaged in generalized exchange and that this difference will be mediated by person-to-person solidarity. The causal mediation analysis showed a significant ACME ($B = 0.087$, 95% CI= -0.0229 – 0.16, $p = 0.006$) but non-significant ADE ($B = -0.0251$, 95% CI= -0.2063 – 0.15, $p = 0.768$) of exchange structure on person-to-person solidarity. In other words, compared to those in generalized exchange, participants in the direct reciprocal exchange condition reported a stronger level of perceived support, and the effect was mediated by person-to-person solidarity. Therefore, H8 was supported.

3.4. Discussion

Through a controlled lab experiment, this study examined the relationships among support exchange structure, social solidarity, and the effectiveness of a support group. More specifically, the current study compared how generalized exchange and directed reciprocal exchange generate different levels of person-to-person and person-to-group solidarity, and in turn, affect the extent to which individuals feel supported by the group and committed to the

group. Also, this study sought to understand how different types of support exchange, varying on the comparability of the exchanged value and the level of empathy involved in the exchange, moderate the effect of exchange structure on social solidarity.

The findings emphasize the value of direct reciprocal exchange in building person-to-person solidarity. Compared to generalized support exchange, direct reciprocal support exchange elicited greater trust, liking, and overall more positive perceptions about the interactants. This finding is inconsistent with some previous studies that advocated and observed the strength of generalized exchange over direct reciprocal exchange to be promoting social solidarity (e.g., Ekeh, 1974; Molm et al., 2007). As theorized in Chapter 2, the inconsistency could be empirical evidence of the different nature of support exchange from instrumental exchange. I theorized that support exchange is less comparable in the amount being exchanged than instrumental exchange. The low comparability may have suppressed the two mechanisms that make generalized reciprocity better than direct reciprocity, the risk of nonreciprocity and salience of conflict, which operated in the previous studies of instrumental exchange (Molm et al., 2008).

Furthermore, the strength of direct reciprocal support exchange over generalized support exchange in promoting person-to-person solidarity suggests that additional mechanisms might operate in support exchange. In a support exchange relationship, direct reciprocal exchange between two individuals involves mutual self-disclosure and reciprocal helping, which promote solidarity between the two individuals (Aron et al., 1997; Reis, 2018; Tichon & Shapiro, 2003; Laursen & Hartup, 2002; Patterson et al., 1993). The processes of mutual self-disclosure and reciprocal helping happen only in support exchange, not in instrumental exchange. They promote person-to-person solidarity through empathy, which is also a unique element of support exchange. The benefit of direct reciprocal exchange might have been less salient in the previous

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studies of exchange structure and social solidarity because such interpersonal communication process is not involved in instrumental exchange.

Low comparability of the exchanged values might also explain why the hypothesized effect of exchange structure on person-to-group solidarity, which has been observed consistently in the previous studies (Molm et al., 2008; Uehara, 1990), was not observed in the study. I proposed that generalized exchange will generate stronger person-to-group solidarity than direct reciprocal exchange based on Molm et al.'s (2007) mechanisms, but two of the three mechanisms were based on the assumption that the exchanged values are comparable in their amount. In support exchange, where the exchanged values are less comparable in their amount than in instrumental exchange, the two mechanisms might have been suppressed, making the effect of exchange structure on person-to-group solidarity not strong enough to be observed.

Lawler et al. (2008) suggest another possible interpretation of why the strength of generalized reciprocity in promoting person-to-group solidarity was not observed. They proposed that for generalized exchange to produce an emergent micro social order, there should be "some form of exogenous 'spark' or structural push," such as a common group identity, a norm of generalized reciprocity, and cultural beliefs that foster generalized trust in others (p. 538). The exchange task used in the current study might not have had enough "spark" to trigger individuals to perceive the support group as a social unit. The weak perception of the group as a social unit could be partially due to the small size of the group. It is possible that the interaction in a triad was perceived more as an interaction with two individuals than as an interaction in a group. Even though the participants were not told how many people are interacting with them on SMOP, they might have noticed that there are only three people interacting on SMOP in real time.

In general, the hypothesized difference between informational support and emotional support in how exchange structure affects social solidarity was not observed. I hypothesized the difference based on 1) that the two types of support differ in the comparability of the amount of the exchanged value and the empathy involved in the exchange and 2) that the two characteristics are the key conditions guiding the strength of the mechanisms through which exchange structure affects social solidarity (i.e., salience of conflict, risk of nonreciprocity, benefit of mutual self-disclosure, benefit of reciprocal relationships). However, the effect of exchange structure on person-to-group solidarity did not differ between the two types of support exchange, and the effect of exchange structure on person-to-person solidarity was only marginally significant.

There are two possibilities on why the difference was unobserved. First, comparability of the amount of the exchanged value and empathy involved in the exchange may not moderate the effect of exchange structure on social solidarity. If the possibility is true, no matter how much the two types of support differ in the comparability of the amount of the exchanged value and the level of empathy involved in the exchange, we should not have observed the difference between the two types of support in terms of the effects of the exchange structure on social solidarity. Future studies can directly measure the characteristics and the proposed mechanisms (salience of conflict, risk of nonreciprocity, benefit of mutual self-disclosure, benefit of reciprocal relationships) to clarify this point.

Another possibility is that informational support and emotional support do not vary on the two characteristics of comparability and empathy. To test whether the two characteristics are important factors in how the proposed mechanisms work, directly manipulating the two characteristics instead of using the two types of support as proxies will provide clearer

understanding. For example, future studies may include the condition where participants provide informational support in a numbered format, which will make the comparability of the support more salient. It will be also valuable to further examine how informational support and emotional support differ in these two characteristics, considering that extant social support research, despite how much it has relied on the typology of support, lacks theorization on how giving and receiving different types of support involve different social and psychological process.

This work meaningfully applies social exchange theories on exchange structure and social solidarity to the research of online support groups by extending the previously established link between exchange structure and social solidarity to the key outcomes of effective online support groups: perceived support and commitment to the group. Results showed that individuals not only felt stronger person-to-person solidarity but also felt more supported after direct reciprocal exchange than generalized exchange of support. The fact that this trend remained even after controlling for the perceived quality of the comments and the perceived severity of the problems suggests that regardless of the content of the exchanged support, the support exchange structure affects how effective a support group can be. The causal mediation analysis results revealed person-to-person solidarity as an explanatory mechanism of this effect. Members felt more supported in a group with mutually helping relationships than in a group with unilateral helping relationships, because they perceived their relationships with the other members more positively. Considering that previous research of effective social support mainly focused on the content of supportive messages (Chapter 1), this finding suggests a novel approach in researching supportive communication in groups. Even though there was no difference in person-to-group solidarity or commitment to the support group between the two exchange

structures, both person-to-person and person-to-group solidarity emerged as important predictors of commitment to the support group. When individuals built solidarity with others and the group, they not only reaped benefit from the group by feeling more supported but also were more likely to contribute to the group by staying in and being part of the group.

Another value of the current study is that it generated rich textual data from the naturally occurring interaction. One limitation of the findings discussed above is that they are from the analysis of the self-report data, which is prone to response biases. Therefore, I conducted a follow-up linguistic analysis to inspect the observed patterns with the behavioral data.

CHAPTER 4. Linguistic Analysis

Language one uses in social interaction reflects a complex psychological process they go through. Unlike in instrumental exchange, the transferred value in support exchange, social support, is conveyed through language most of the time, except for in some forms of support such as hug and money. Social solidarity formed during support exchange is likely to be reflected in the language individuals use in the interaction situation. In the current study, social solidarity formed as a result of the reciprocal support exchange is likely to be reflected in the language participants use in the supportive comments they reciprocate. Therefore, I conducted an additional linguistic analysis of the supportive comments with the following research question:

RQ: How do the comments as an enactment of generalized and direct reciprocity differ in the linguistic characteristics that reflect social solidarity?

4.1. Method

4.1.1. Sample

The posts and comments from Study 1 were saved after each session. The comments from all sessions were compiled into one spreadsheet. In total, there were 426 comments from 213 participants.

4.1.2. Coding for Exchange Structure

From the perspective adopted in the current project, there are three types of comments in this study: the comments as an enactment of direct reciprocity, the comments as an enactment of generalized reciprocity, and the baseline comments. First, some supportive comments were given from a sender (i.e., A) to a receiver (i.e., B) after the sender (i.e., A) had previously received a supportive comment from the specific receiver (i.e., B). These comments were conceptualized as

the sender's (i.e., A) enactment of direct reciprocity. Second, some supportive comments were given from a sender (i.e., A) to a receiver (i.e., B) after the sender (i.e., A) had received a supportive comment from another actor (i.e., C). These comments were conceptualized as the sender's (i.e., A) enactment of generalized reciprocity. Third, some supportive comments were given by a sender without any previous experience of receiving. These comments were not conceptualized as the enactment of reciprocity, since receiving did not precede the giving. These were considered as the baseline comments. Specifics on how I conceptualized each comment are available in Appendix B.

4.1.3 Coding for Social Solidarity

The outcome variables were measured using Linguistic Inquiry Word Count (LIWC), a computerized text analysis software coding textual data on various psychological categories (Tausczik & Pennebaker, 2010). The following three categories were conceptualized as the proxies of social solidarity: *1st person plural*, *netspeak*, and *swear*. 1st person plural words, including we, us, our, reflect the comment giver's solidarity with the comment receiver (Tausczik & Pennebaker, 2010). Informal words such as netspeak language and swear words can be indicators of personal closeness the comment giver feels with the comment receiver (Adams, 2016; Girlea & Girju, 2021). Proper proxies for person-to-group solidarity were unavailable among the categories that LIWC provides. Therefore, the analysis was limited to the inspection of person-to-person solidarity.

LIWC provides some categories that could be the proxies of the supportiveness of a comment. Even though the supportiveness of a comment is a separate concept from social solidarity, considering its high relevance to the research topic, I also included it in the analysis for the potential insight it may provide. Based on previous research (Andy et al., 2021; Pan,

Feng, & Wingate, 2018), the following two categories were conceptualized as the proxies of supportiveness of the comment: *word count* and *tentativeness*. Word count, which is "a proxy for amount of communication" (Tausczik & Pennebaker, 2010, p. 33), could measure one's involvement and engagement in the supportive communication. Tentativeness words (e.g., *maybe, perhaps, guess*) may reflect one's depth and complexity of thinking (Tausczik & Pennebaker, 2010).

4.1.4. Analysis

The analysis was conducted on the comment level instead of on the individual level. Mixed model regression analysis was conducted, with the random effects of the triad and individual included in the models. The main effects of the exchange structure and support type and the interaction effect between the two predicted each linguistic characteristic. The plots of the contrasts of the estimated marginal means for each linguistic characteristic are in Figure 4.1.

4.2. Results

The contrasts of the estimated marginal means for each linguistic characteristic are plotted in Figure 3.

Compared to the direct reciprocity comments, the generalized reciprocity comments included less *netspeak* ($B = -0.443$, $SE = 0.205$, $p = 0.033$) and less *swear words* ($B = -0.062$, $SE = 0.035$, $p = 0.076$). However, exchange structure did not have a significant effect on the *1st person plural* word use ($B = -0.011$, $SE = 0.220$, $p = 0.961$).

The direct reciprocity comments and the generalized reciprocity comments did not differ in *word count* ($B = -1.250$, $SE = 3.096$, $p = 0.687$) or *tentativeness* ($B = -0.507$, $SE = 0.612$, $p = 0.409$). However, it is notable that in the additional analysis comparing each type of reciprocity

comments to the baseline comments, the direct reciprocity comments were longer than the baseline comments ($B = 6.115$, $SE = 2.599$, $p = 0.020$).

4.3. Discussion

The exploratory analysis of the behavioral data generally confirms the findings from the main study using the self-report data. Participants used more informal language when practicing direct reciprocity than when practicing generalized reciprocity. This aligns with the finding that direct reciprocal exchange generated stronger person-to-person solidarity than generalized exchange. 1st person plural word use, which was expected to be an indicator of the solidarity the support provider feels with the support receiver, did not vary across conditions. One possible explanation is that unlike in some interaction situations like collaborating on a task, providing support on issues about college life might involve less need to explicitly indicate the support provider and receiver as a group.

The two types of reciprocal comments did not differ in the linguistic cues that make the comments more supportive. This is consistent to the findings from the analysis of the self-report data, where participants' perceived comment quality did not differ between the two exchange structure conditions.

Notably, compared to when providing support without any receiving experience, when providing support to someone whom they received support from previously, participants wrote a longer supportive comment. This may indicate that the norm of direct reciprocity also operates in the context of support exchange.

CHAPTER 5. General Discussion

The current dissertation started with identifying the limitations in the current research of online support groups. Then, I proposed the concept of support exchange as a useful perspective to study online support groups. I defined the concept in relation to instrumental exchange, which has been the topic of most of the previous research of social exchange. Based on the definition, I made several propositions on how exchange structure in support groups affects social solidarity. These propositions were inferred from theoretical examination of the extant theories on exchange structure and social solidarity and the new mechanisms I propose to be operating in support exchange. Then, I presented the empirical study where I tested a subset of the propositions through a small-group lab experiment and a linguistic analysis.

The current project is one of the first to conceptualize support exchange in relation to instrumental exchange. Although previous studies have applied the concept of social exchange to the research of social support (Brown et al., 2014; Yan et al., 2016), to my knowledge, there was no attempt to discuss the characteristics support exchange shares with or differs on from instrumental exchange. Considering that much of the extant social exchange theories are established in the context of instrumental exchange, theoretical examination of support exchange in relation to instrumental exchange is important in applying the theories to support exchange. I identified the lower comparability of the amount of the values exchanged and stronger empathy engaged in the exchange as the two characteristics that differentiate support exchange from instrumental exchange.

The two characteristics worked as important basis for the propositions I made on exchange structure and social solidarity in support groups. I claimed that the low comparability of the exchanged values will suppress the mechanisms previously proposed in the context of

instrumental exchange (Molm et al., 2007) and that the strong empathy involved in exchange will trigger the new mechanisms I proposed. The propositions on exchange structure and social solidarity based on these claims are supported in the current study. Particularly strong support was shown on the power of direct reciprocal exchange in promoting person-to-person solidarity in support exchange, as both the self-report and behavioral data show the same pattern. As elaborated in Section 3.3, this finding sheds lights on the value of direct reciprocal exchange, which has been overlooked by the previous studies conducted in the context of instrumental exchange.

The findings on support exchange structure and social solidarity are valuable in studying both on- and off-line support groups, but this dissertation sought to explore their implications on online support groups in particular by examining perceived supportiveness of and commitment to the online support group as outcomes. Exchange structure affected perceived supportiveness of and commitment to the online support group through person-to-person solidarity. It is notable that exchange structure did not affect the actual comment quality measured with the linguistic characteristics or the perceived quality of the comments measured in self-report but still affected the members' perceived supportiveness of and commitment to the support group. In other words, independently from the quality of the supportive messages exchanged, exchange structure affected members' perception of the supportive interaction. This provides valuable practical implications in designing online support groups. Features and affordances facilitating more direct reciprocal support relationships could make members feel more supported in committed to the group. For example, a support group could employ the direct messaging feature or make previous interaction more visible.

The current work adopts a novel approach in researching effective online support groups. As overviewed in Chapter 1, previous studies of online support groups focused on the factors affecting the effectiveness of the one-shot supportive communication episodes between dyads (e.g., Li & Feng, 2015; Li, Feng, & Wingate, 2018; Feng, Li, & Li, 2013; Li, Feng, Li & Tan, 2015; Youngvorst & High, 2018). This way of researching effective online support groups is based on the assumption that an online support group is the sum of the independent supportive communication episodes. On the other hand, by adopting the framework of social exchange, the current work views supportive communication episodes as interrelated components that altogether create collective outcomes such as social solidarity. This perspective allowed us to examine the properties more directly related to effective groups instead of the properties of the episodes happening in the groups.

Methodologically, the strength of the work is that it used both experimental design and linguistic analysis. This work is one of the first to adopt experimental method in the study of group support. Adopting the experimental method allowed us to empirically assess causality among the different factors in the conceptual model and to assume strong reliability of the findings. Using the naturally occurring interaction data collected in this study, the linguistic analysis addresses the potential response bias in the experiment. For example, participants might have rated the interactants and the support group as more positively than their actual perception, due to social desirability. The common finding in the two studies, the power of direct reciprocity, stands robust.

There are some limitations in the empirical study. First, due to the experimental method it adopted, external validity might have been compromised in the study. The participants were asked to exchange support on the topic of college life, which might be a topic of lower severity

than other topics like cancer. Also, the participants might have perceived the instruction as unnatural. However, the study design was inevitable for the experimental design to infer causality.

Second, since I used the linguistic categories that were already available in LIWC, not all variables of interest could be measured in the linguistic analysis. Therefore, the outcomes that could be examined in the linguistic analysis were limited to person-to-person solidarity. Devising the linguistic coding schemes for other variables of interest (e.g., person-to-group solidarity, commitment to the group, perceived supportiveness) or adopting the behavioral measures of the variables other than language use can broaden the scope of examination.

Another limitation of the empirical study is that it did not test the mechanisms through which exchange structure affects social solidarity, which were theorized in Chapter 2. It did not directly measure the mechanisms or the characteristics of the exchange that were theorized to be affecting the strength of the mechanisms. Instead, it indirectly addressed how comparability of the amount of the exchanged value and empathy involved in the exchange affect the mechanisms by using informational support and emotional support as proxies for the types of exchange varying on the two characteristics. For more comprehensive examination of the propositions theorized in Chapter 2, future studies can directly measure the mechanisms and the characteristics. Also, future studies can investigate instrumental exchange, emotional support exchange, and informational support exchange altogether to empirically test how the types of exchange vary on different characteristics.

Future studies can address the limitations by adopting diverse methods. For example, observational studies using field data will generate findings with stronger external validity. By accessing naturally occurring data from the actual online groups, we can confirm if the findings

from the current project are consistent in the interactions outside of the lab. Mixed-method

research can be particularly promising. Combining network analysis and survey, future studies

can examine how individuals embedded in certain exchange structures experience different

levels of social solidarity. The design will allow both strong external validity and confidence in

causality.

References

Aron, A., Melinat, E., Aron, E. N., Vallone, R. D., & Bator, R. J. (1997). The experimental generation of interpersonal closeness: A procedure and some preliminary findings. *Personality and social psychology bulletin*, *23*(4), 363-377.

Adams, M. (2016). *In praise of profanity*. Oxford University Press.

Adelman, M. B., Parks, M. R., & Albrecht, T. L. (1987). Beyond close relationships: Support in weak ties. In T. L. Albrecht, M. B. Adelman, & Associates (Eds.), Communicating social support (pp. 126–147). Newbury Park, CA: Sage.

Altman, I., & Taylor, D. A. (1973). *Social penetration: The development of interpersonal relationships*. Holt, Rinehart & Winston.

Attard, A., & Coulson, N. S. (2012). A thematic analysis of patient communication in Parkinson's disease online support group discussion forums. *Computers in Human Behavior*, *28*(2), 500-506.

Barak, A., & Bloch, N. (2006). Factors related to perceived helpfulness in supporting highly distressed individuals through an online support chat. *CyberPsychology & Behavior*, *9*(1), 60-68.

Barak, A., Boniel-Nissim, M., & Suler, J. (2008). Fostering empowerment in online support groups. *Computers in human behavior*, *24*(5), 1867-1883.

Berkman, L. F., Melchior, M., Chastang, J. F., Niedhammer, I., Leclerc, A., & Goldberg, M. (2004). Social integration and mortality: a prospective study of French employees of Electricity of France–Gas of France: the GAZEL Cohort. *American journal of epidemiology*, *159*(2), 167-174.

Blau, P. M. (2017). *Exchange and power in social life*. Routledge.

Blight, M. G., Jagiello, K., & Ruppel, E. K. (2015). "Same stuff different day:" A mixed-method

study of support seeking on Facebook. *Computers in Human Behavior*, *53*, 366-373.

Bodie, G. D., Burleson, B. R., & Jones, S. M. (2012). Explaining the relationships among

supportive message quality, evaluations, and outcomes: A dual-process

approach. *Communication Monographs*, *79*(1), 1-22.

Brown, L. D., Tang, X., & Hollman, R. L. (2014). The structure of social exchange in self-help

support groups: Development of a measure. *American Journal of Community*

Psychology, *53*(1), 83-95.

Brüderl, J., & Preisendörfer, P. (1998). Network support and the success of newly founded

business. *Small business economics*, *10*(3), 213-225.

Buehler, E. M. (2017). "You shouldn't use Facebook for that": Navigating norm violations while

seeking emotional support on Facebook. *Social Media+ Society*, *3*(3),

2056305117733225

Burleson , B. R. (1982). The development of comforting communication skills in childhood and

adolescence . *Child Development* , 53 , 1578 – 1588 Burleson, B. R. (2003). Emotional

support skills. In J. O. Greene & B. R. Burleson (Eds.), Handbook of communication and

social interaction skills (pp. 551–594). Mahwah, NJ: Lawrence Erlbaum.

Burleson, B. R. (2008). What counts as effective emotional support? Explorations of individual

and situational differences. *Studies in applied interpersonal communication*, 207-227.

Burleson, B. R., & Goldsmith, D. J. (1998). How the comforting process works: Alleviating

emotional distress through conversationally induced 346——PART IV: Processes and

Functions reappraisals. In P. A. Andersen & L. K. Guerrero (Eds.), Handbook of com

Burleson, B. R., Liu, M., Liu, Y., & Mortenson, S. T. (2006). Chinese evaluations of emotional support skills, goals, and behaviors: An assessment of gender-related similarities and differences. *Communication Research*, *33*(1), 38-63.

Burleson, B. R., & Mortenson, S. R. (2003). Explaining cultural differences in evaluations of emotional support behaviors: Exploring the mediating influences of value systems and interaction goals. *Communication Research*, *30*(2), 113-146.

Chappel, J. N., & DuPont, R. L. (1999). Twelve-step and mutual-help programs for addictive disorders. *Psychiatric Clinics of North America*, *22*(2), 425-446.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic medicine*.

Coffman, M. J. (2008). Effects of tangible social support and depression on diabetes self-efficacy: a study of Hispanic older adults. *Journal of Gerontological Nursing*, *34*(4), 32-39.

Cohen, S., Underwood, L. G., & Gottlieb, B. H. (2000). Social influence mea- surement and intervention: A guide for health and social scientists. New York, NY Oxford University Press.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological bulletin*, *98*(2), 310.

Colineau, N., & Paris, C. (2010). Talking about your health to strangers: understanding the use of online social networks by patients. *New review of hypermedia and multimedia*, *16*(1-2), 141-160.

Collins, N. L., & Feeney, B. C. (2004). Working models of attachment shape perceptions of social support: evidence from experimental and observational studies. *Journal of personality and social psychology*, *87*(3), 363.

Cooke, B. D., Rossmann, M. M., McCubbin, H. I., & Patterson, J. M. (1988). Examining the
definition and assessment of social support: A resource for individuals and
families. *Family relations*, 211-216.

Coursaris, C. K., & Liu, M. (2009). An analysis of social support exchanges in online HIV/AIDS
self-help groups. *Computers in Human Behavior*, *25*(4), 911-918.

Coulson, N. S. (2005). Receiving social support online: an analysis of a computer-mediated
support group for individuals living with irritable bowel syndrome. *Cyberpsychology &
behavior*, *8*(6), 580-584.

Coulson, N. S., Buchanan, H., & Aubeeluck, A. (2007). Social support in cyberspace: a content
analysis of communication within a Huntington's disease online support group. *Patient
education and counseling*, *68*(2), 173-178.

Cutrona, C. E., Cohen, B. B., & Igram, S. (1990). Contextual determinants of the perceived
supportiveness of helping behaviors. *Journal of Social and Personal Relationships*, *7*(4),
553-562.

Cutrona, C. E., & Russell, D. W. (1990). Type of social support and specific stress: Toward a
theory of optimal matching.

Cutrona, C. E., & Suhr, J. A. (1994). Social support communication in the context of marriage:
an analysis of couples' supportive interactions.

Cutrona, C. E., Shaffer, P. A., Wesner, K. A., & Gardner, K. A. (2007). Optimally matching
support and perceived spousal sensitivity. *Journal of family psychology*, *21*(4), 754.

DeAndrea, D. C. (2015). Testing the proclaimed affordances of online support groups in a
nationally representative sample of adults seeking mental health assistance. *Journal of
health communication*, *20*(2), 147-156.

Dillingham, R. (2017). Social support in a virtual community: analysis of a clinic-affiliated

    online support group for persons living with HIV/AIDS. *AIDS and Behavior*, *21*(11),

    3087-3099.

Eichhorn, K. C. (2008). Soliciting and providing social support over the Internet: An

    investigation of online eating disorder support groups. *Journal of Computer-Mediated*

    Communication, *14*(1), 67-78.

Ekeh, P. (1974). Social exchange theory: The two traditions . Cambridge, MA: Harvard

    University Press.

Emerson, R. M. (1976). Social exchange theory. Annual Review of Sociology, 2 , 335–362.

Faraj, S., & Johnson, S. L. (2011). Network exchange patterns in online

    communities. *Organization science*, *22*(6), 1464-1480.

Feng, B. (2009). Testing an integrated model of advice giving in supportive interactions. *Human*

    Communication Research, *35*(1), 115-129.

Feng, B., & Burleson, B. R. (2008). The effects of argument explicitness on responses to advice

    in supportive interactions. *Communication Research*, *35*(6), 849-874.

Feng, B., Li, S., & Li, N. (2016). Is a profile worth a thousand words? How online support-

    seeker's profile features may influence the quality of received support

    messages. *Communication Research*, *43*(2), 253-276.

Feng, B., & MacGeorge, E. L. (2010). The influences of message and source factors on advice

    outcomes. *Communication Research*, *37*(4), 553-575.

Feng, B., & Magen, E. (2016). Relationship closeness predicts unsolicited advice giving in

    supportive interactions. *Journal of Social and Personal Relationships*, *33*(6), 751-767.

Flickinger, T. E., DeBolt, C., Waldman, A. L., Reynolds, G., Cohn, W. F., Beach, M. C., ... &

Fox, S. (2012). Pew Internet & American Life Project: Health Topics. Retrieved March 11, 2012

    from: http://www.pewinternet.org/2013/02/11/2012-health-survey-data/

Friedman, M. M., & King, K. B. (1994). The relationship of emotional and tangible support to

    psychological well-being among older women with heart failure. *Research in Nursing &*

    Health, *17*(6), 433-440.

Girlea, C., & Girju, R. (2018). Decoding the Perception of Sincerity in Dialogues. *IEEE*

    Transactions on Affective Computing, *12*(1), 2-15.

Gleason, M. E., Iida, M., Bolger, N., & Shrout, P. E. (2003). Daily supportive equity in close

    relationships. *Personality and Social Psychology Bulletin*, *29*(8), 1036-1045.

Goldsmith, D. J., & MacGeorge, E. L. (2000). The impact of politeness and relationship on

    perceived quality of advice about a problem. *Human Communication Research*, *26*(2),

    234-263.

Goldsmith, D. J., McDermott, V. M., & Alexander, S. C. (2000). Helpful, supportive and

    sensitive: Measuring the evaluation of enacted social support in personal

    relationships. *Journal of Social and Personal Relationships*, *17*(3), 369-391.

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American*

    sociological review, 161-178.

Granovetter, M. S. (1973). The strength of weak ties. *American journal of sociology*, *78*(6),

    1360-1380.

Gruenewald, T. L., & Seeman, T. E. (2010). Social support and physical health: links and

    mechanisms. In *Handbook of behavioral medicine* (pp. 225-236). Springer, New York,

    NY.

Gurung, R. A., Sarason, B. R., & Sarason, I. G. (1997). Personal characteristics, relationship

quality, and social support perceptions and behavior in young adult romantic

    relationships. *Personal Relationships*, *4*(4), 319-339.

Han, J. Y., Shah, D. V., Kim, E., Namkoong, K., Lee, S. Y., Moon, T. J., ... & Gustafson, D. H.

    (2011). Empathic exchanges in online cancer support groups: distinguishing message

    expression and reception effects. *Health communication*, *26*(2), 185-197.

Han, J. Y., Shaw, B. R., Hawkins, R. P., Pingree, S., McTavish, F., & Gustafson, D. H. (2008).

    Expressing positive emotions within online support groups by women with breast

    cancer. *Journal of Health Psychology*, *13*(8), 1002-1007.

Hayton, J. C., Carnabuci, G., & Eisenberger, R. (2012). With a little help from my colleagues: A

    social embeddedness approach to perceived organizational support. *Journal of*

    Organizational Behavior, *33*(2), 235-249.

Helgeson, V. S., Cohen, S., Schulz, R., & Yasko, J. (2000). Group support interventions for

    women with breast cancer: who benefits from what?. *Health psychology*, *19*(2), 107.

Heller, K., & Lakey, B. (1985). Perceived support and social interaction among friends and

    confidants. In *Social support: Theory, research and applications* (pp. 287-300). Springer,

    Dordrecht.

Hennessy, M. B., Kaiser, S., & Sachser, N. (2009). Social buffering of the stress response:

    diversity, mechanisms, and functions. *Frontiers in neuroendocrinology*, *30*(4), 470-482.

Hether, H. J., Murphy, S. T., & Valente, T. W. (2016). A social network analysis of supportive

    interactions on prenatal sites. *Digital health*, *2*, 2055207616628700.

High, A. C., & Dillard, J. P. (2012). A review and meta-analysis of person-centered messages

    and social support outcomes. *Communication Studies*, *63*(1), 99-118.

High, A. C., & Young, R. (2018). Supportive communication from bystanders of cyberbullying:

indirect effects and interactions between source and message characteristics. *Journal of Applied Communication Research*, *46*(1), 28-51.

Hirschman, K. B., & Bourjolly, J. N. (2005). How do tangible supports impact the breast cancer experience?. *Social Work in Health Care*, *41*(1), 17-32.

Hlebec, V., Mrzel, M., & Kogovšek, T. (2009). Social support network and received support at stressful events. *Advances in Methodology and Statistics*, *6*(2), 155-171.

Holahan, C. J., & Moos, R. H. (1981). Social support and psychological distress: a longitudinal analysis. *Journal of abnormal psychology*, *90*(4), 365.

Holmstrom, A. J. (2012). What helps–and what doesn't–when self-esteem is threatened?: Retrospective reports of esteem support. *Communication Studies*, *63*(1), 77-98.

Holmstrom, A. J., & Burleson, B. R. (2011). An initial test of a cognitive-emotional theory of esteem support messages. *Communication Research*, *38*(3), 326-355.

Holmstrom, A. J., Russell, J. C., & Clare, D. D. (2013). Esteem support messages received during the job search: A test of the CETESM. *Communication Monographs*, *80*(2), 220-242.

Homans, G. C. (1958). Social behavior as exchange. American Journal of Sociology, 63 , 597–606.

House, J. S. (1981). Work stress and social support. Reading, MA: Addison-Wesley

House, J. S., Umberson, D., & Landis, K. R. (1988). Structures and processes of social support. *Annual review of sociology*, *14*(1), 293-318.

Ikeda, A., & Kawachi, I. (2010). Social networks and health. In *Handbook of behavioral medicine* (pp. 237-261). Springer, New York, NY

Jones, S. (2004). Putting the person into person-centered and immediate emotional support:

Emotional change and perceived helper competence as outcomes of comforting in helping situations. *Communication research*, *31*(3), 338-360.

Jones, S. M., Bodie, G. D., & Hughes, S. D. (2019). The impact of mindfulness on empathy, active listening, and perceived provisions of emotional support. *Communication Research*, *46*(6), 838-865.

Jones, S. M., & Burleson, B. R. (2003). Effects of helper and recipient sex on the experience and outcomes of comforting messages: An experimental investigation. *Sex Roles*, *48*(1), 1-19.

Jones, S. M., & Wirtz, J. G. (2006). How does the comforting process work? An empirical test of an appraisal-based model of comforting. *Human Communication Research*, *32*(3), 217-243.

Litt, M. D., Kadden, R. M., Kabela-Cormier, E., & Petry, N. (2007). Changing network support for drinking: initial findings from the network support project. *Journal of consulting and clinical psychology*, *75*(4), 542.

Kakkoth, S. (2009). social support for Hunter-gatherers: care or curse?. *Economic and Political Weekly*, 70-73.

Karau, S. J., & Williams, K. D. (1993). Social loafing: A meta-analytic review and theoretical integration. *Journal of personality and social psychology*, *65*(4), 681.

Kessler, R. C. (1992). Perceived support and adjustment to stress: Methodological considerations. In *An earlier version of this paper was presented at the Psychosocial Factors in Mental Health and Illness Training Program seminar.*. Hemisphere Publishing Corp.

Kim, J., & Lee, J. E. R. (2011). The Facebook paths to happiness: Effects of the number of

Facebook friends and self-presentation on subjective well-being. *CyberPsychology, behavior, and social networking*, *14*(6), 359-364.

Kim, H. S., & Sundar, S. S. (2011, May). Using interface cues in online health community boards to change impressions and encourage user contribution. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 599-608).

Kolmogorov, A. N. (1965). Three approaches to the quantitative definition of information'. *Problems of information transmission*, *1*(1), 1-7.

Koob, J. J., Brasfield, T. L., & Bernstein, B. M. (1993). Outcome of cognitive-behavioral and support group brief therapies for depressed, HIV-infected persons. *Am J Psychiatry*, *150*(1), 1679-1686.

Kramer, A. D., Guillory, J. E., & Hancock, J. T. (2014). Experimental evidence of massive-scale emotional contagion through social networks. *Proceedings of the National Academy of Sciences*, *111*(24), 8788-8790

Kraut, R. E., & Resnick, P. (2012). *Building successful online communities: Evidence-based social design*. Mit Press.

Kunkel, A. W., & Burleson, B. R. (1999). Assessing explanations for sex differences in emotional support: A test of the different cultures and skill specialization accounts. *Human Communication Research*, *25*(3), 307-340.

Kuwabara, K. (2011). Cohesion, cooperation, and the value of doing things together: How economic exchange creates relational bonds. *American Sociological Review*, *76*(4), 560-580.

Lampinen, A., Huotari, K. J. E., & Cheshire, C. (2015). Challenges to participation in the sharing

economy: the case of local online peer-to-peer exchange in a single parents' network. *Interaction Design and Architecture (s)*.

Lakey, B., & Orehek, E. (2011). Relational regulation theory: a new approach to explain the link between perceived social support and mental health. *Psychological review*, *118*(3), 482.

Laursen, B., & Hartup, W. W. (2002). The origins of reciprocity and social exchange in friendships. *New directions for child and adolescent development*, *2002*(95), 27-40.

Lauterbach, D., Truong, H., Shah, T., & Adamic, L. (2009, August). Surfing a web of trust: Reputation and reciprocity on couchsurfing. com. In *2009 International Conference on Computational Science and Engineering* (Vol. 4, pp. 346-353). IEEE.

Lavoie, J. P. (1995). Support groups for informal caregivers don't work! Refocus the groups or the evaluations?. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, *14*(3), 580-603.

Lawler, E. J., Thye, S. R., & Yoon, J. (2014). The emergence of collective emotions in social exchange. *Collective emotions*, 189-203.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.

Lee, S., Chung, J. E., & Park, N. (2018). Network environments and well-being: An examination of personal network structure, social capital, and perceived social support. *Health communication*, *33*(1), 22-31.

Lepore, S. J. (1992). Social conflict, social support, and psychological distress: evidence of cross-domain buffering effects. *Journal of personality and social psychology*, *63*(5), 857.

Levenson, R. W., & Ruef, A. M. (1992). Empathy: a physiological substrate. *Journal of personality and social psychology*, *63*(2), 234.

Lévi-Strauss, C. (1971). *The elementary structures of kinship* (No. 340). Beacon Press.

Li, S., & Feng, B. (2015). What to say to an online support-seeker? The influence of others' responses and support-seekers' replies. *Human Communication Research*, *41*(3), 303-326.

Li, S., Feng, B., Li, N., & Tan, X. (2015). How social context cues in online support-seeking influence self-disclosure in support provision. *Communication Quarterly*, *63*(5), 586-602.

Li, S., Feng, B., & Wingate, V. S. (2019). Give thanks for a little and you will find a lot: The role of a support seeker's reply in online support provision. *Communication Monographs*, *86*(2), 251-270.

Liang, J., Krause, N. M., & Bennett, J. M. (2001). Social exchange and well-being: is giving better than receiving?. *Psychology and aging*, *16*(3), 511.

Ling, K., Beenen, G., Ludford, P., Wang, X., Chang, K., Li, X., ... & Kraut, R. (2005). Using social psychology to motivate contributions to online communities. *Journal of Computer-Mediated Communication*, *10*(4), 00-00.

MacGeorge, E. L., Feng, B., & Burleson, B. R. (2011). Supportive communication. In M. L. Knapp, & J. A. Daly (Eds.), *Handbook of interpersonal communication* (pp. 317-354).Thousand Oaks, CA: Sage.

MacGeorge, E. L., Lichtman, R. M., & Pressey, L. C. (2002). The evaluation of advice in supportive interactions: Facework and contextual factors. *Human Communication Research*, *28*(3), 451-463.

MacGeorge, E. L., Feng, B., & Thompson, E. R. (2008). Good" and "bad" advice. *Studies in applied interpersonal communication*, *145*.

MacGeorge, E. L., Feng, B., Butler, G. L., & Budarz, S. K. (2004). Understanding advice in

supportive interactions: Beyond the facework and message evaluation paradigm. *Human

Communication Research*, *30*(1), 42-70.

McCroskey, J. C., & McCain, T. A. (1974). The measurement of interpersonal attraction.

Mo, P. K., & Coulson, N. S. (2008). Exploring the communication of social support within

virtual communities: a content analysis of messages posted to an online HIV/AIDS

support group. *Cyberpsychology & behavior*, *11*(3), 371-374.

Mok, K., Jorm, A. F., & Pirkis, J. (2016). Who goes online for suicide-related reasons?. *Crisis*.

Myrick, J. G., Holton, A. E., Himelboim, I., & Love, B. (2016). # Stupidcancer: exploring a

typology of social support and the role of emotional expression in a social media

community. *Health communication*, *31*(5), 596-605.

Mesch, G. S. (2008). Online communities. In *Handbook of community movements and local

organizations* (pp. 227-242). Springer, Boston, MA.

Molm, L. D., Collett, J. L., & Schaefer, D. R. (2007). Building solidarity through generalized

exchange: A theory of reciprocity. *American journal of sociology*, *113*(1), 205-242.

Nabi, R. L., Prestin, A., & So, J. (2013). Facebook friends with (health) benefits? Exploring

social network site use and perceptions of social support, stress, and well-

being. *Cyberpsychology, behavior, and social networking*, *16*(10), 721-727.

Oh, H. J., Ozkaya, E., & LaRose, R. (2014). How does online social networking enhance life

satisfaction? The relationships among online supportive interaction, affect, perceived

social support, sense of community, and life satisfaction. *Computers in Human

Behavior*, *30*, 69-78.

Pan, W., Feng, B., Wingate, V. S., & Li, S. (2020). What to say when seeking support online: A

comparison among different levels of self-disclosure. *Frontiers in psychology*, *11*, 978.

Pan, W., Shen, C., & Feng, B. (2017). You get what you give: understanding reply reciprocity
and social capital in online health support forums. *Journal of health
communication*, *22*(1), 45-52.

Patterson, B. R., Bettini, L., & Nussbaum, J. F. (1993). The meaning of friendship across the
life-span: Two studies. *Communication quarterly*, *41*(2), 145-160.

Patton III, W. E. (1981). Quantity of information and information display type as predictors of
consumer choice of product brands. *Journal of Consumer Affairs*, *15*(1), 92-105.

Pilisuk, M., & Parks, S. H. (1980). Structural dimensions of social support groups. *The Journal
of Psychology*, *106*(2), 157-177.

Postmes, T., Spears, R., & Lea, M. (1998). Breaching or building social boundaries? SIDE-
effects of computer-mediated communication. *Communication research*, *25*(6), 689-715.

Preece, J. (2001). Sociability and usability in online communities: Determining and measuring
success. *Behaviour & Information Technology*, *20*(5), 347-356.

Prentice, D. A., Miller, D. T., & Lightdale, J. R. (1994). Asymmetries in attachments to groups
and to their members: Distinguishing between common-identity and common-bond
groups. *Personality and Social Psychology Bulletin*, *20*(5), 484-493.

Rack, J. J., Burleson, B. R., Bodie, G. D., Holmstrom, A. J., & Servaty-Seib, H. (2008).
Bereaved adults' evaluations of grief management messages: Effects of message person
centeredness, recipient individual differences, and contextual factors. *Death
studies*, *32*(5), 399-427.

Rains, S. A., & Keating, D. M. (2011). The social dimension of blogging about health: Health
blogging, social support, and well-being. *Communication Monographs*, *78*(4), 511-534.

Rains, S. A., & Young, V. (2009). A meta-analysis of research on formal computer-mediated support groups: Examining group characteristics and health outcomes. *Human communication research*, *35*(3), 309-336.

Reis, H. T. (2017). The interpersonal process model of intimacy: Maintaining intimacy through self-disclosure and responsiveness. In *Foundations for Couples' Therapy* (pp. 216-225). Routledge

Robinson, J. D., & Tian, Y. (2009). Cancer patients and the provision of informational social support. *Health Communication*, *24*(5), 381-390.

Seo, M., Kim, J., & Yang, H. (2016). Frequent interaction and fast feedback predict perceived social support: Using crawled and self-reported data of Facebook users. *Journal of Computer-Mediated Communication*, *21*(4), 282-297.

Servaty-Seib, H. L., & Burleson, B. R. (2007). Bereaved adolescents' evaluations of the helpfulness of support-intended statements: Associations with person centeredness and demographic, personality, and contextual factors. *Journal of Social and Personal Relationships*, *24*(2), 207-223.

Shaw, B. R., Han, J. Y., Hawkins, R. P., McTavish, F. M., & Gustafson, D. H. (2008). Communicating about self and others within an online support group for women with breast cancer and subsequent outcomes. *Journal of health psychology*, *13*(7), 930-939

Shumaker, S. A., & Brownell, A. (1984). Toward a theory of social support: Closing conceptual gaps. *Journal of social issues*, *40*(4), 11-36.

Sowles, S. J., Krauss, M. J., Gebremedhn, L., & Cavazos-Rehg, P. A. (2017). "I feel like I've hit the bottom and have no idea what to do": Supportive social networking on Reddit for individuals with a desire to quit cannabis use. *Substance abuse*, *38*(4), 477-482.

Suler, J. (2004). The online disinhibition effect. *Cyberpsychology & behavior*, *7*(3), 321-326.

Tausczik, Y. R., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of language and social psychology*, *29*(1), 24-54.

Tichon, J. G., & Shapiro, M. (2003). The process of sharing social support in cyberspace. *Cyberpsychology & behavior*, *6*(2), 161-170.

Tóth, M., & Chytilek, R. (2018). Fast, frugal and correct? An experimental study on the influence of time scarcity and quantity of information on the voter decision making process. *Public Choice*, *177*(1), 67-86.

Tsai, C. I., Klayman, J., & Hastie, R. (2008). Effects of amount of information on judgment accuracy and confidence. *Organizational Behavior and Human Decision Processes*, *107*(2), 97-105.

Turner, J. W., Grube, J. A., & Meyers, J. (2001). Developing an optimal match within online communities: An exploration of CMC support communities and traditional support. *Journal of Communication*, *51*(2), 231-251.

Turner, J. W., Robinson, J. D., Tian, Y., Neustadtl, A., Angelus, P., Russell, M., ... & Levine, B. (2013). Can messages make a difference? The association between e-mail messages and health outcomes in diabetes patients. *Human Communication Research*, *39*(2), 252-268.

Turner-McGrievy, G. M., & Tate, D. F. (2013). Weight loss social support in 140 characters or less: use of an online social network in a remotely delivered weight loss intervention. *Translational behavioral medicine*, *3*(3), 287-294.

Uchino, B. N. (2009). Understanding the links between social support and physical health: A

life-span perspective with emphasis on the separability of perceived and received

support. *Perspectives on psychological science*, *4*(3), 236-255.

Uehara, E. (1990). Dual exchange theory, social networks, and informal social

support. *American Journal of Sociology*, *96*(3), 521-557.

van Ingen, E., & Wright, K. B. (2016). Predictors of mobilizing online coping versus offline

coping resources after negative life events. *Computers in Human Behavior*, *59*, 431-439.

Van Rooy, R. (2003). Quality and quantity of information exchange. *Journal of Logic, Language

and Information*, *12*(4), 423-451.

Walther, J. B. (2011). Theories of computer-mediated communication and interpersonal

relations. *The handbook of interpersonal communication*, *4*, 443-479.

Walther, J. B., & Boyd, S. (2002). Attraction to computer-mediated social

support. *Communication technology and society: Audience adoption and uses*, *153188*, 2.

Walther, J. B., & Jang, J. (2012). Communication processes in participatory websites. *Journal of

Computer-Mediated Communication, 18*, 2-15.

Wang, Y. C., Kraut, R., & Levine, J. M. (2012, February). To stay or leave? The relationship of

emotional and informational support to commitment in online health support groups.

In *Proceedings of the ACM 2012 conference on computer supported cooperative

work* (pp. 833-842).

Welbourne, J. L., Blanchard, A. L., & Boughton, M. D. (2009, June). Supportive

communication, sense of virtual community and health outcomes in online infertility

groups. In *Proceedings of the fourth international conference on Communities and

technologies* (pp. 31-40).

Wellman, B., & Wortley, S. (1990). Different strokes from different folks: Community ties and

social support. *American journal of Sociology*, *96*(3), 558-588.

Willer, R., Flynn, F. J., & Zak, S. (2012). Structure, identity, and solidarity: A comparative field study of generalized and direct exchange. *Administrative Science Quarterly*, *57*(1), 119-155.

Woloshin, S., Schwartz, L. M., Tosteson, A. N., Chang, C. H., Wright, B., Plohman, J., & Fisher, E. S. (1997). Perceived adequacy of tangible social support and health outcomes in patients with coronary artery disease. *Journal of general internal medicine*, *12*(10), 613-618.

Yamagishi, T., & Cook, K. S. (1993). Generalized exchange and social dilemmas. Social Psychology Quarterly, 56 (4), 235–248.

Yan, Z., Wang, T., Chen, Y., & Zhang, H. (2016). Knowledge sharing in online health communities: A social exchange theory perspective. *Information & management*, *53*(5), 643-653.

Yang, D., Kraut, R., & Levine, J. M. (2017, May). Commitment of newcomers and old-timers to online health support communities. In *Proceedings of the 2017 CHI conference on human factors in computing systems* (pp. 6363-6375).

Youngvorst, L. J., & High, A. C. (2018). "Anyone free to chat?" Using technological features to elicit quality support online. *Communication Monographs*, *85*(2), 203-223.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of personality assessment*, *52*(1), 30-41.

ENDNOTES

[1]Instrumental exchange as a type of social exchange should not be confused with economic exchange of instrumental goods.

Tables

Table 2.1. Comparison of Different Types of Exchange

Characteristics	Instrumental Exchange	Support Exchange				
		Tangible	Informational	Network	Esteem	Emotional
Sociality	Applies	Applies	Applies	Applies	Applies	Applies
Comparability	Strong	Strong	Moderate	Moderate	Weak	Weak
	Moderate (for gift)	Moderate (for service)				
Empathy	Weak	Moderate	Moderate	Moderate	Strong	Strong
Salience of stressor	Weak	Strong	Strong	Strong	Strong	Strong

Table 2.2. Summary of the Extant and Proposed Mechanisms through which Exchange Structure Affects Social Solidarity

	Mechanisms	Related Characteristics	Emotional Support Exchange		Informational Support Exchange		Instrumental Exchange	
			PTP	PTG	PTP	PTG	PTP	PTG
Molm	Expressive value of reciprocity	Sociality	Applies		Applies		Applies	
	Risk of nonreciprocity	Comparability	Applies weaker		Applies moderately		Applies stronger	
	Conflict salience							
Kim	Mutuality of self-disclosure	Empathy	Applies stronger	Doesn't apply	Applies	Doesn't apply	Doesn't apply	
	Sense of fairness							
Lawler	Shared responsibility	Exchange as task	Doesn't apply		Doesn't apply		Not tested	Applies

Table 3.1. Descriptive statistics and zero-order correlations among the key variables

	1	2	3	4	5	6	7	8	9
1. Severity	1								
2. Comment	.131*	1							
3. Liking	.229***	.508***	1						
4. Affect	.161**	.565***	.566***	1					
5. Trust	.155*	.536***	.556***	.675***	1				
6. PTG	.064	.547***	.499***	.538***	.418***	1			
7. Perceived Support	.169*	.656***	.611***	.517***	.513***	.575***	1		
8. Commitment	.201**	.371***	.579***	.424***	.384***	.535***	.577***	1	
9. PTP	.204**	.620***	.783***	.891***	.887***	.562***	.627***	.523***	1
M	5.18	5.26	4.78	6.02	5.12	5.49	5.29	4.58	5.31
SD	.76	.90	.62	.90	.88	.88	.89	1.21	.69

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

Table 3.2. Descriptive statistics of the key variables for each experimental condition

	Generalized Exchange			Direct Reciprocal Exchange		
	Emotional	Informational	Across support types	Emotional	Informational	Across support types
Severity	5.06	5.21	5.14	5.32	5.12	5.22
Comment	5.44	5.1	5.26	5.44	5.06	5.26
Like	4.75	4.74	4.74	4.88	4.78	4.83
Affect	5.98	5.8	5.88	6.17	6.19	6.18
Trust	5.12	4.94	5.02	5.12	5.35	5.23
PTG	5.51	5.44	5.47	5.64	5.37	5.51
Perceived Support	5.31	5.41	5.36	5.5	5.34	5.42
Commitment	4.52	4.53	4.53	4.69	4.61	4.65
PTP	5.28	5.16	5.22	5.39	5.44	5.41

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

Table 3.3. OLS regression analysis results testing H1 and H3

	H1	H3			
DV	PTG	PTP	Trust	Liking	Affect
	B	B	B	B	B
Intercept	2.694***	2.246***	1.854***	2.313***	2.495***
	(0.438)	(0.309)	(0.434)	(0.308)	(0.426)
Comment	0.538***	0.465***	0.515***	0.334***	0.551***
	(0.057)	(0.041)	(0.057)	(0.040)	(0.056)
Severity	-0.010	0.102*	0.090	0.131**	0.095
	(0.068)	(0.048)	(0.068)	(0.048)	(0.067)
Exchange structure	0.041	0.185*	0.200†	0.076	0.293**
	(0.103)	(0.073)	(0.102)	(0.072)	(0.100)

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

Table 3.4. OLS regression analysis results testing H2 and answering RQ

DV	H2 Person-to-group	H4 Person-to-person
	B	B
Intercept	2.766***	2.090***
	(0.448)	(0.312)
Comment	0.542***	0.483***
	(0.059)	(0.041)
Severity	-0.018	0.116*
	(0.069)	(0.048)
Exchange Structure	-0.044	0.321**
	(0.146)	(0.101)
Support Type	-0.113	-0.024
	(0.142)	(0.099)
Exchange Structure x Support Type	0.175	$-0.246^{\dagger}$
	(0.208)	(0.145)

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

Table 3.5. OLS regression analysis results testing H4a and H5a

DV	H5a		H6a	
	Perceived support		Commitment	
	B	B	B	B
Intercept	0.494	0.671†	-1.023	-0.927
	(0.413)	(0.404)	(0.678)	(0.640)
Comment	0.429***	0.470***	0.112	0.120
	(0.081)	(0.058)	(0.101)	(0.092)
Severity	0.050	0.103†	0.172†	0.253**
	(0.058)	(0.058)	(0.096)	(0.092)
PTP	0.449***	-	0.778***	-
	(0.413)		(0.134)	
PTG	-	0.312***	-	0.649***
		(0.059)		(0.093)

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

Figures

Figure 3.1. Graphical Representations of the SEM Models Used to Test H5b and H6b
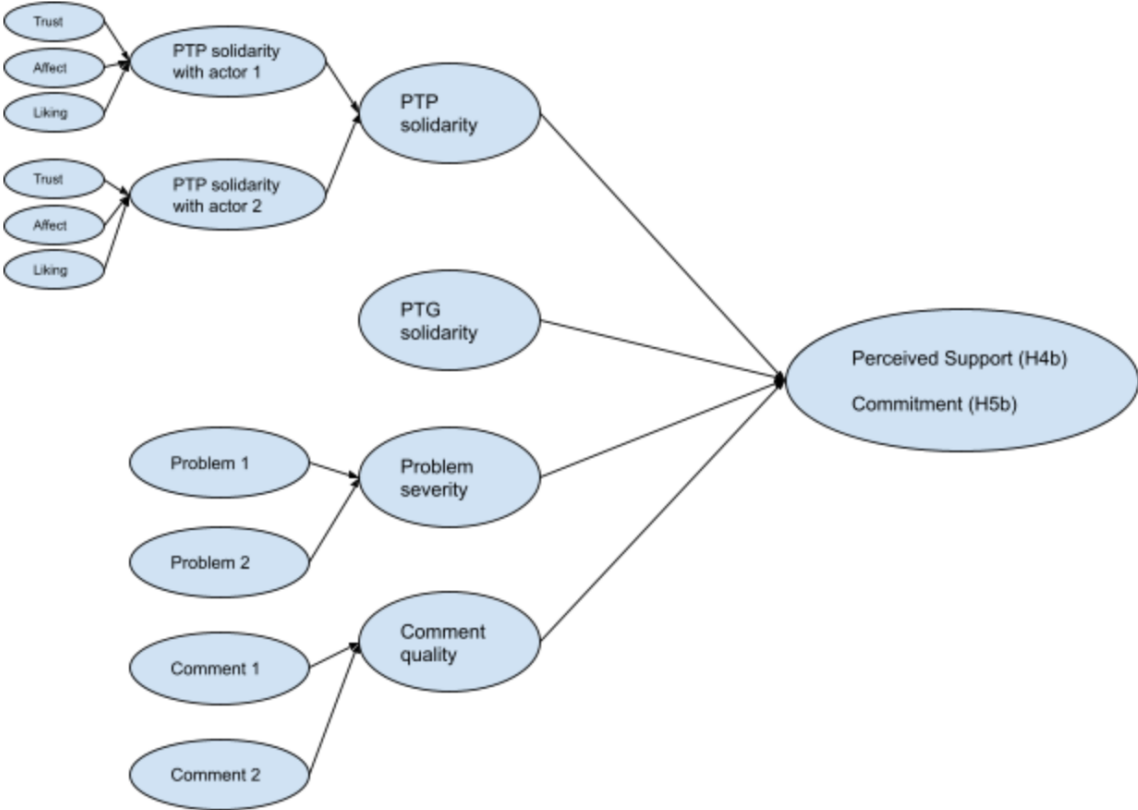
- The manifest variables are omitted in the figure. The items used to measure each latent variable are available in the Measures section.

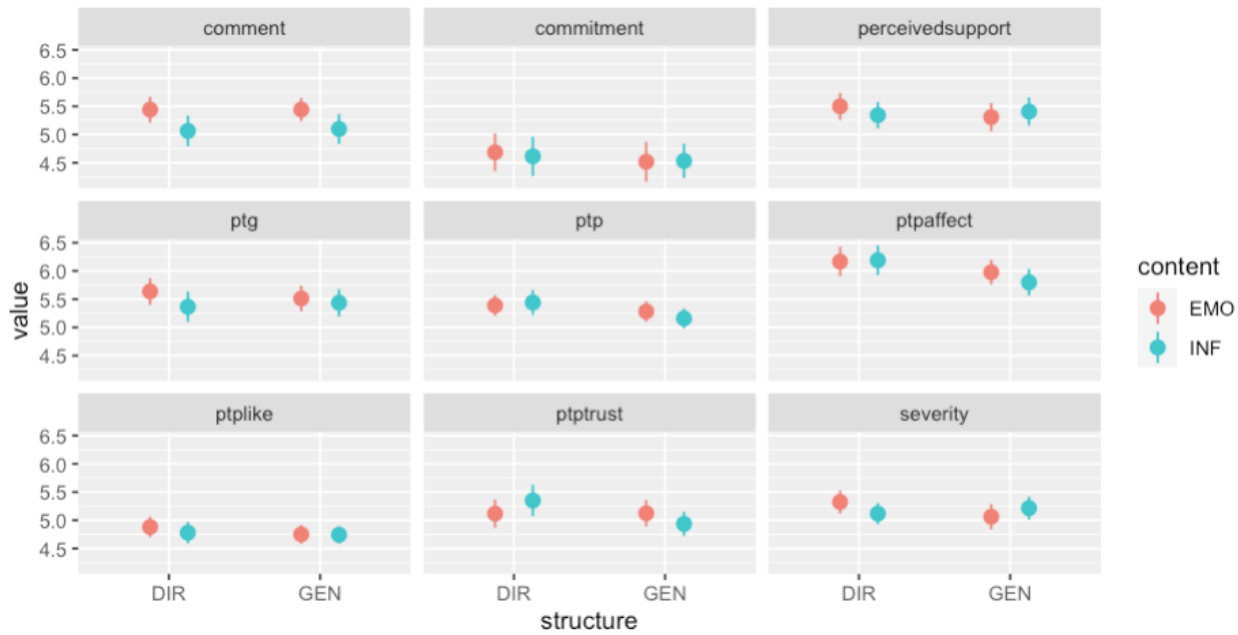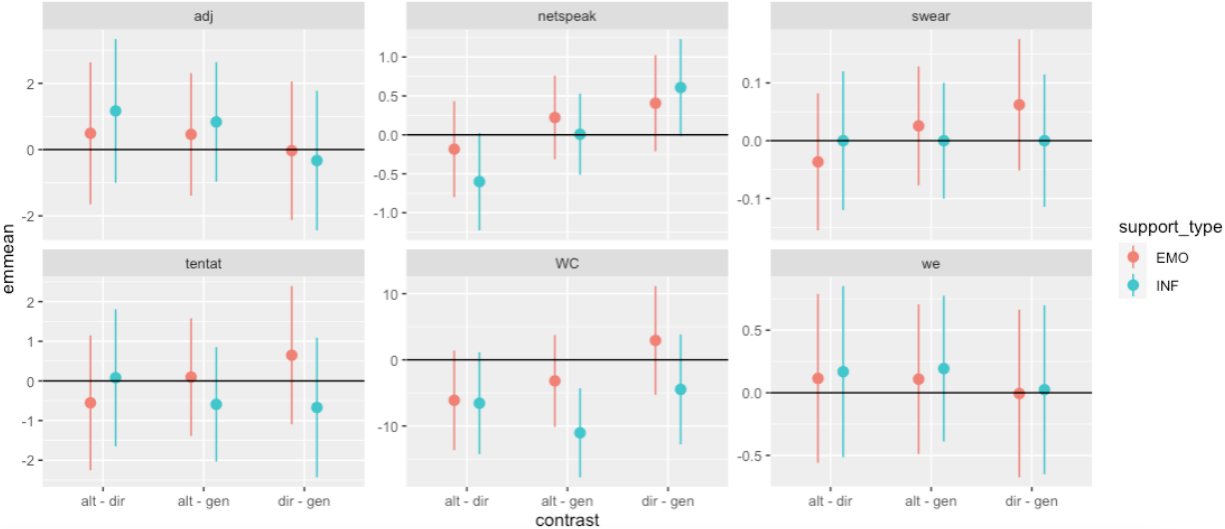**Figure 3.2.** **Boxplots of the Key Variables for the Four Experimental Conditions**

Figure 4.1. Contrasts of the Estimated Marginal Means for Each Linguistic Characteristic

Appendices

Appendix A. The Sequence of the Instructions for Each Experimental Condition and Position in the Triad

	Direct Reciprocal Exchange			Generalized Exchange		
	A	B	C	A	B	C
Window 1 (0-4)	[Instruction 1] Explore	[Instruction 1] Set up	[Instruction 1] Set up	[Instruction 1] Explore	[Instruction 1] Set up	[Instruction 1] Set up
Window 2 (4-8)	[Instruction 2] Post 1	[Instruction 2] Explore		[Instruction 2] Post 1	[Instruction 2] Explore	
Window 3 (8-12)	[Instruction 3] Wait	[Instruction 3] Comment 1		[Instruction 3] Wait	[Instruction 3] Comment 1	
Window 4 (12-16)	[Instruction 4] Read comment 1	[Instruction 4] Post1		[Instruction 4] Read comment 1	[Instruction 4] Post 1	[Instruction 2] Explore
Window 5 (16-20)	[Instruction 5] Comment 1	[Instruction 5] Wait		[Instruction 5] Wait	[Instruction 5] Wait	[Instruction 3] Comment 1
Window 6 (20-24)	[Instruction 6] Wait	[Instruction 6] Read comment 1 [Instruction 7] Post	[Instruction 2] Explore		[Instruction 6] Read comment 1	[Instruction 4] Post 1
Window 7 (24-28)		[Instruction 8] Wait	[Instruction 3] Comment 1	[Instruction 6] Comment 1	[Instruction 7] Wait	[Instruction 5] Wait
Window 8 (28-32)		[Instruction 9] Read comment 2	[Instruction 4] Post	[Instruction 7] Post 2		[Instruction 6] Read comment 1
Window 9 (32-36)		[Instruction 10] Comment 2	[Instruction 5] Wait	[Instruction 8] Wait	[Instruction 8] Comment 2	[Instruction 7] Wait
Window 10 (36-40)		[Instruction 11] Wait	[Instruction 6] Read comment 1 [Instruction 7] Post	[Instruction 9] Read comment 2	[Instruction 9] Post 2	
Window 11 (40-44)	[Instruction 7]-1min Comment 2		[Instruction 8] Wait	[Instruction 10] Wait	[Instruction 10] Wait	[Instruction 8] Comment 2
Window 12 (44-48)	[Instruction 8] Post 2		[Instruction 9] Read comment 2		[Instruction 11] Read comment 2	[Instruction 9] Post 2
Window 13 (48-52)	[Instruction 9] Wait		[Instruction 10]-1min Comment 2	[Instruction 11] Comment 2	[Instruction 12] Wait	[Instruction 10] Wait
Window 14 (52-54)	[Instruction 10] Read comment 2		[Instruction 11] Wait	[Instruction 12] Wait		[Instruction 11] Read comment 2
Transition	[Instruction 11] Transition	[Instruction 12] Transition	[Instruction 12] Transition	[Instruction 13] Transition	[Instruction 13] Transition	[Instruction 12] Transition

Appendix B. Coding Comments on the Two Types of Reciprocity

	Direct Reciprocal Exchange			Generalized Exchange		
	A	B	C	A	B	C
Window 1 (0-4)	[Instruction 1] Explore	[Instruction 1] Set up	[Instruction 1] Set up	[Instruction 1] Explore	[Instruction 1] Set up	[Instruction 1] Set up
Window 2 (4-8)	[Instruction 2] Post 1	[Instruction 2] Explore		[Instruction 2] Post 1	[Instruction 2] Explore	
Window 3 (8-12)	[Instruction 3] Wait	[Instruction 3] Comment 1		[Instruction 3] Wait	[Instruction 3] Comment 1	
Window 4 (12-16)	[Instruction 4] Read comment 1	[Instruction 4] Post1		[Instruction 4] Read comment 1	[Instruction 4] Post 1	[Instruction 2] Explore
Window 5 (16-20)	[Instruction 5] Comment 1	[Instruction 5] Wait		[Instruction 5] Wait	[Instruction 5] Wait	[Instruction 3] Comment 1
Window 6 (20-24)	[Instruction 6] Wait	[Instruction 6] Read comment 1 [Instruction 7] Post	[Instruction 2] Explore		[Instruction 6] Read comment 1	[Instruction 4] Post 1
Window 7 (24-28)		[Instruction 8] Wait	[Instruction 3] Comment 1	[Instruction 6] Comment 1	[Instruction 7] Wait	[Instruction 5] Wait
Window 8 (28-32)		[Instruction 9] Read comment 2	[Instruction 4] Post	[Instruction 7] Post 2		[Instruction 6] Read comment 1
Window 9 (32-36)		[Instruction 10] Comment 2	[Instruction 5] Wait	[Instruction 8] Wait	[Instruction 8] Comment 2	[Instruction 7] Wait
Window 10 (36-40)		[Instruction 11] Wait	[Instruction 6] Read comment 1 [Instruction 7] Post	[Instruction 9] Read comment 2	[Instruction 9] Post 2	
Window 11 (40-44)	[Instruction 7] Comment 2		[Instruction 8] Wait	[Instruction 10] Wait	[Instruction 10] Wait	[Instruction 8] Comment 2
Window 12 (44-48)	[Instruction 8] Post 2		[Instruction 9] Read comment 2		[Instruction 11] Read comment 2	[Instruction 9] Post 2
Window 13 (48-52)	[Instruction 9] Wait		[Instruction 10]-1min Comment 2	[Instruction 11] Comment 2	[Instruction 12] Wait	[Instruction 10] Wait
Window 14 (52-54)	[Instruction 10] Read comment 2		[Instruction 11] Wait	[Instruction 12] Wait		[Instruction 11] Read comment 2
Transition	[Instruction 11] Transition	[Instruction 12] Transition	[Instruction 12] Transition	[Instruction 13] Transition	[Instruction 13] Transition	[Instruction 12] Transition

Direct reciprocity = red
Generalized reciprocity = blue
Baseline comment = green