

MEDIA USE PATTERNS, EXPECTATIONS, AND VIOLATIONS: EXTENDING MEDIA
MULTIPLEXITY THEORY TO EXTENDED FAMILY COMMUNICATION

by

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Media Use Patterns, Expectations, and Violations: Extending
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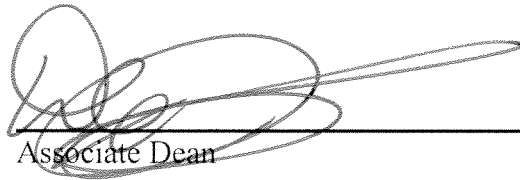
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Media Use Patterns, Expectations, and Violations: Extending Media Multiplexity Theory to
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Following recent interest in media multiplexity theory (MMT), this manuscript reports cluster analysis of different media use patterned in extended family networks and results of an experimental study examining how participants respond to hypothetical changes in media use (i.e., increasing or decreasing use frequency) by an extended family member. After contending that MMT addresses both media use patterns and expectations, I employed expectancy violations theory to consider the extent to which communication satisfaction and tie strength moderate evaluations of media use violations. Cluster analysis revealed five different types of media use patterns among extended family ties, and family communication patterns predicted group membership. Results indicated that communication satisfaction served as a more potent and consistent moderator of violations, such that, for example, decreased media use by satisfying communicators was perceived as negative and important (but less negative and less important when committed by unsatisfying communicators). Beyond highlighting possible outcomes of violations, these results commend the nature of the relationship as a motivating force for media selection when organizational norms are absent. Implications for studying media use patterns in interpersonal relationships are discussed.

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Media Use Patterns, Expectations, and Violations: Extending Media Multiplexity Theory to
Extended Family Communication

Although the last three decades have witnessed great proliferation in the number of communication technologies available to interpersonal partners, communication scholars possess only a limited understanding of such multimodality (Walther, 2011). Among the theoretical attempts to explain patterns of multimodality, Haythornthwaite's (2005) media multiplexity theory (MMT) is the most popular account to date, with communication scholars using the theory to explore media multiplexity in personal relationships (e.g. Baym & Ledbetter, 2009; Ledbetter & Mazer, 2013). Despite this application to interpersonal contexts, Haythornthwaite originally developed MMT to explain media use in small groups within organizational/educational settings, such that key tenets of MMT assume that organizations establish norms for media use. Specifically, the theory claims that media use is predictable because weak ties will use organizationally established media to communicate. Yet, in interpersonal relationships, organizationally established media are likely absent (Ledbetter & Mazer, 2013), therefore generating theoretical ambiguity regarding how to predict media use patterns in interpersonal contexts. Thus, although communication scholars have extended MMT to predict the strength of interpersonal relationships (e.g., Ledbetter & Kuznekoff, 2012), they have not considered how the theory might inform how interpersonal dyads negotiate patterns of media use within their interpersonal relationships. To accomplish this important theoretical and practical aim, research must clarify patterns of media use absent organizational structures.

Most foregoing interpersonal communication research using MMT has focused on *media multiplexity*, or the extent to which the number of media used in a relationship is positively associated with relational interdependence and closeness (e.g., Ledbetter, 2010a). Less is known

about the extent to which members of a group use media in a hierarchical structure, or what Haythornthwaite terms the *unidimensional scale* of media use, outside of organizational/educational settings. In other words, the unidimensional scale addresses the patterned nature of media use, with such patterns socially constructed by the networks within which dyads exist. In the present investigation, I will use the unidimensional scale as a theoretical concept that helps address how people allocate media use in their family relationships. Such an approach sheds light on how a person negotiates media use, including changes in use patterns, within the expectations of an ongoing relationship. The family may serve as one interpersonal context where members construct such media use expectations (Ledbetter, 2010b), and thus serves as the focus of this investigation.

Moreover, Haythornthwaite (2002) discussed at length how the addition or subtraction of media disrupts existing social networks. This study invokes expectancy violations theory (Burgoon & Hale, 1988) to reconceptualize such media changes as violations of communicative expectations, with the media use patterns representing the nature of such expectations. The chief goals of this manuscript are twofold: First, this study aims to identify what patterns of media use exist in families, and second, this study examines the outcome of violating media use expectations by adding or subtracting a medium within a particular extended family dyad. Such results will advance the ongoing project of expanding MMT to a more comprehensive theory of media use in interpersonal relationships, as well as highlighting how people can most effectively manage media use within their extended family relationships.

Theoretical Perspective

Media Multiplexity Theory

Haythornthwaite (2005) grounded media multiplexity theory (MMT) in Granovetter's (1973) conceptualization of social network ties. Granovetter defined tie strength as the "combination of the amount of time, the emotional intensity, the intimacy (mutual confidence), and the reciprocal services" maintained in a relationship (p. 1361). He identified *strong ties* and *weak ties* as the two primary types of ties, and both ties have associated psychosocial benefits. Strong ties provide individuals with a sense of belonging and through these ties individuals gain access to a set of resources and information. However, strong ties come with a high cost as well, because they require much time and energy to maintain tie strength. For most people, strong ties include relationships with immediate family members and close friends. Weak ties, such as acquaintances, co-workers, and some extended family relationships, have much fewer associated emotional benefits or costs. Although they do not provide the sense of belonging and intimacy of strong ties, Granovetter (1973) nevertheless argued that weak ties enhance social networks because they grant individuals access to more diverse resources and information than those available in the strong tie network.

Following Granovetter, MMT conceptually shifts CMC research away from attributes of the medium as a predictor of media use (e.g., media richness; Daft, Lengel, & Trevino, 1987) in favor of examining the strength of the relational tie as a predictor of media use (Haythornthwaite, 2005). Toward this end, the theory identifies two central constructs. First, *media multiplexity* is the extent to which partners employ multiple media to maintain their relationship. The theory claims that tie strength predicts media multiplexity, with weak ties using fewer media and strong ties using more. This association is mutually causal across time, such that tie strength causes greater media use, and the use of multiple media simultaneously strengthens the relational tie. Second, the *unidimensional scale* represents the patterns of media use established within a group.

Taken together, these two constructs move emphasis away from message content in favor of understanding broad patterns of media use. As Haythornthwaite (2005) argued, “the number of media used differs by tie strength, *what* is communicated does *not* differ by medium (p.130).”

In light of empirical observations of media multiplexity, Haythornthwaite (2005) extended Granovetter’s original conceptualization of social networks by suggesting that the number of media used in a relationship is a defining characteristic of tie strength. She also delineated a new type of relational tie termed *latent tie*. Latent ties occur when a medium affords the technical possibility of a connection between two individuals, but they have not activated the tie socially (Haythornthwaite, 2002). Thus, Haythornthwaite theorized changes in tie strength as moving through a linear progression. Ties start as latent ties and then convert into weak ties when activated socially; as time, emotional intimacy, and media use increase, weak ties then may become strong ties (Haythornthwaite, 2000).

Following MMT, it stands to reason that, generally, the addition of a new medium within a dyad represents a positively-valenced behavior, because such use serves as a sign of a stronger relational tie (Haythornthwaite, 2002). The addition of a medium provides further ability to connect with one another and tends to complement the previous modes of communication, and this new medium simultaneously strengthens the bond between the dyad. In contrast, the deletion of a medium may have negative effects on the relationship because removal of a communication channel threatens the strength of the relationship. Haythornthwaite (2005) argued that weak ties experience a significantly larger disruption from the subtraction of a medium because they are connected by relatively few media. Removal of the primary medium lowers the probability of communication between the pair, and in some cases may sever the relationship entirely. Strong ties participate in redundant communication across multiple channels. Accordingly, removing

one medium from their relationship does not change their ability to connect and communicate as much as it does with weak ties.

Perhaps unsurprisingly, researchers have used the theory to explore the connection between social network sites (SNS) and the nature of users' social networks. For instance, Ellison, Steinfield, and Lampe (2007) discovered that Facebook plays an important role in maintaining established weak ties with people who meet offline versus online relationship initiation. The existence of SNS has created the ability to convert latent ties into weak ties, but users of SNS generally do not convert weak ties into strong ties (Baym & Ledbetter, 2009). In addition, the use of Facebook for social-information seeking purposes gives users the ability to tap into the social capital offered to users through their weak ties (Ellison, Steinfield, & Lampe, 2011). Haythornthwaite (2000) found that media multiplexity is present even in the absence of face-to-face (FtF) communication; this finding extends the argument that humans are driven to connect regardless of the limitations of the available media (Walther, 1992).

Interpersonal communication scholars using MMT have devoted attention most centrally to media multiplexity (i.e., the association between additional media use and positive relational outcomes). Baym and Ledbetter (2009) reported that forms of communication, such as telephone calls, SNS, and FtF, each uniquely predict greater relational development. Interestingly, empirical evidence supports the notion that each medium holds a unique level of importance within a relationship. Ledbetter et al. (2011) found offline communication to have a stronger positive association with relational closeness than communication on Facebook, but Facebook communication accounted for a unique portion of the variance in closeness unexplained by offline interaction (Ledbetter et al., 2011). Ledbetter and Kuzneoff (2012) reported that online video game communication and offline communication interact to predict relational closeness,

and each form of communication increases closeness distinctly. Additionally, Ledbetter (2010a) found that the medium chosen for relational maintenance uniquely predicted friendship closeness, even after controlling for the content of maintenance messages. In sum, it appears likely that relational partners will perceive additional media use positively because adding media is associated with relational quality and access to information and resources. Little research has examined what the removal of media does to relational quality, but it stands to reason from the findings offered above that the deletion of a medium would be associated with negative consequences because it may disrupt the communication patterns within the dyad.

Media Use Patterns and Expectations

Communication scholars have devoted increasing attention to media multiplexity, but have devoted little attention to MMT's claims regarding how patterns of media use shift across time, or the *unidimensional scale*. Understanding such patterns serves the goal of identifying how people negotiate media use in their interpersonal relationships, as well as the extent to which some patterns of use produce more desirable outcomes than do other patterns. Specifically, Haythornthwaite (2005) noted that "within a group, use of media conforms to a unidimensional scale: those who use only one medium, use the same one medium, those who use two, tend to use the same second medium, etc." (p. 130). In other words, members of a group create hierarchical tiers of media use, determining which media they will use with specific members of the group. The weakest ties likely only use the base medium in the hierarchical structure of the unidimensional scale, but as tie strength increases they may use more 'private' media to communicate. Although Haythornthwaite's use of the term unidimensional scale may evoke comparison to factor analysis, her unidimensional scale possesses much greater similarity to a Guttman scale (Haythornthwaite, 2002). In a Guttman scale, behaviors are arranged

hierarchically, such that use of a higher-order behavior implies use of lower-order behaviors (e.g., willingness to donate a kidney to a friend implies willingness to donate \$5). In MMT, media use functions this way within a group, such that individuals who communicate via a medium reserved for strong ties also use media allocated for weak ties. Case in point, Haythornthwaite (2000) observed strongly tied pairs were using email in addition to web forums and instant messaging; as with a Guttman scale, individuals who used private (i.e., strong tie) media to connect were also using the public (i.e., weak tie) media.

In organizational and educational contexts, Haythornthwaite (2005) theorized that group/organizational norms determine the structure of a group's unidimensional scale. Within one group (or organization), email may be the medium used by all group members and only strongly tied individuals use text messaging to connect with one another. Yet, a different group (or organization) may decide to use text messaging with all members of the group and reserve email for dyads with stronger bonds. Thus, although tie strength drives media use, members of the group construct the group's normative expectations regarding which media members should use with which ties. In this sense, MMT bears similarity to the social influence model (SIM) (Fulk, Schmitz, & Steinfield, 1990). SIM argues media perceptions are subjective and socially constructed by group or organization members. Vicarious and explicit learning teaches individuals how to use technology within a group, establishing norms regarding what channel of communication should be selected for use. Group members initiate and maintain media norms through frequent use of the medium. As such, competent media use depends on group norms and social factors, and has less to do with selecting the medium to match the message (e.g., as in media richness theory; Daft & Lengel, 1986). Haythornthwaite (2002) advanced SIM's argument by identifying predictable media norms and patterns. Following MMT, the nature of media

norms/patterns differs to some degree by tie strength. Weakly tied pairs are more passive in the development of their media use, and this means they spend little to no time determining how media should be used in their relationship. Thus, weak tie dyads default to organizationally established media to interact (Haythornthwaite, 2005). Strong tie dyads spend a greater amount of time communicating. As a result, strong ties are more likely to have socially constructed norms of use specific to the dyad.

Without denying Haythornthwaite's (2005) contribution to understanding structures of media use within groups, the unidimensional scale contains an important conceptual weakness: it conflates media use *patterns* (or behavior) and media use *expectations* (or norms). Haythornthwaite (2000, 2005) measured the former in small groups by observing the frequency of contact between ties, and then assumed that individuals expect contact via certain media from their peers because of their relational tie. Although this mutually causal association between patterns and expectations possesses coherency (i.e., patterns of media use establish expectations, and expectations consequently shape future media use patterns), combining the two into a single construct blinds communication scholars to the consequences of media use behavior that deviates from expectations. Consistent with this line of thought, this project reframes the unidimensional scale as comprised of two identifiably separate constructs: *media use patterns* and *media use expectations*. Conceptually and empirically separating out the two constructs within the theory renders it more useful and heuristic. Moreover, I contend that media use patterns and media use expectations are more specific terms that are less likely to be confused with the use of "unidimensional scale" in the statistical literature. I further posit that expectations arise from media use behavior, and these expectations, in turn, generate patterned interaction as a result.

Differences can be delineated between behavior and expectations, and studying them as separate constructs will lead to richer understanding of multimodality.

To clarify, media use patterns are a dyad's (or group's) observable configurations of media selection. Media use patterns are most often measured through frequency of media use (Haythornthwaite, 2000; Ledbetter, 2008) and time duration (Kalman, Ravid, Raban, & Rafaeli, 2006). To date, communication scholarship has focused on media use patterns (Haythornthwaite, 2005, Ledbetter, in press). Per MMT, tie strength dictates these patterns of media use. I contend that tie strength does so by virtue of expectations associated with communication in the relationship. Media use expectations are the cognitions toward media that individuals hold about how media should to be used in a specific relationship (or, perhaps, relationship type). On this point, Burgoon and Walther (1990) defined an interpersonal expectation as "an enduring pattern of anticipated behavior that may be either generalized or person-specific" (Burgoon & Walther, 1990, p. 235). Haythornthwaite (2005) observed that media selection follows a consistent pattern over time, and therefore the media selection process can be anticipated both by communicators and outside observers. These expectations emerge within specific groups, and members reinforce them through the continual use of a medium (Haythornthwaite, 2002). My reconceptualization of the unidimensional scale as reflecting media use expectations possesses strong compatibility with Burgoon and Walther's (1990) work, and the expectancy violations tradition has demonstrated that such expectations strongly influence the quality of interpersonal relationships (Afifi & Metts, 1998). It stands to reason that violations of media use expectations likewise influence both observable communication patterns and subjective evaluations of interpersonal communication and partners.

Although Haythornthwaite (2005) reported that media use patterns represent her most meaningful findings about media use, it is less clear how media use patterns function when an external organization does not establish media use expectations (Ledbetter & Mazer, 2013). Towards this end of identifying media use patterns when organizational norms are absent, the family may serve as an intriguing research site. Families are a semi-bounded group of individuals, not entirely dissimilar to the small groups originally studied by Haythornthwaite. In fact, family communication scholarship often draws upon small group communication theory to inform research (Braithwaite, Schrodt, & Kellas, 2006). Families socially construct communication expectations (Baxter & Braithwaite, 2006; Koerner & Fitzpatrick, 2002a), including for media use (Ledbetter, 2010b). As a result, families may enact similar social construction of media use akin to small groups, especially given that media use is important for sharing information and providing support within a family (Leach & Braithwaite, 1996). Given that scholars often cite immediate family as the very essence of strong tie relationships (Granovetter, 1973; Haythornthwaite, 2005), this investigation examines media use patterns and expectations among extended family relationships. Floyd and Mormon (2006) define an extended familial connection as “one derived from, and because of previously in-act family bond” (p. 63). Examples of extended family relationships include grandparents, aunt/uncle, cousin, parents-in-law, and niece/nephew. Collectively, extended families possess greater tie strength diversity, and therefore MMT may help explain patterns of media use among extended family members. With the aim of extending MMT to family relationships, this study asks:

RQ1: What patterns of media use exist in extended family relationships?

Family Communication Patterns

Haythornthwaite (2005) has contended that organizational norms establish media use expectations and behavior; however, as Ledbetter and Mazer (2013) noted, it remains unclear how interpersonal partners negotiate media use absent such norms. Nevertheless, the family represents a semi-bounded social unit whose culture may exert some influence on media use expectations among its members (Ledbetter, 2010b). Along this line of thought, scholars often look to family communication schemata to inform how people learn family communication behavior (Schrodt, Witt & Messersmith, 2008). Consequently, this study employs the theory of family communication patterns (FCPs) (Koerner & Fitzpatrick, 2002a) to investigate family-level predictors of media use expectations.

Koerner and Fitzpatrick's (2002a) theory states that family communication is centered around two orientations. First, *conversation orientation* addresses "the degree to which families create a climate in which all family members are encouraged to participate in unrestrained interaction about a wide array of topics" (Koerner & Fitzpatrick, 2002a, pg. 85). High conversation orientation families value open dialogue between family members. Members of high conversation orientation families are free to discuss activities, ideas, and feelings with one another. In contrast, individuals belonging to low conversation orientation families rarely interact and discuss only a few topics with each other.

Second, Koerner and Fitzpatrick (2002a) describe *conformity orientation* as "the degree to which family communication stresses a climate of homogeneity of attitudes, values, and beliefs" (pg. 85). High conformity orientation families value their family relationships over all other relationships, and their interactions focus on harmony, conflict avoidance, and independence between family members. Conversely, families on the low end of the conformity orientation focus on the individuality of family members and value heterogeneous beliefs and

opinions. According to the theory, the two orientations are inversely associated with one another and intersect to create a typology of four family types: *consensual* (high conversation, high conformity), *pluralistic* (high conversation, low conformity), *protective* (low conversation, high conformity), and *laissez-faire* (low conversation, low conformity) (Koerner & Fitzpatrick, 2002a).

Koerner and Fitzpatrick (2002a, 2002b) suggested that FCPs influence cognitive, behavioral, and psychological outcomes. Empirical research over the past several decades has indicated that there is an association between FCPs and each of these outcomes (Schrodt et al., 2008). Most pertinent to this investigation, some research has identified empirical associations between FCPs and mediated communication. Specifically, conformity orientation predicts attitude toward online social connection as well as attitude toward online self-disclosure, and conversation orientation indirectly influences an individual's beliefs about online self-disclosure (Ledbetter, 2010b). Koerner and Fitzpatrick (2006) have argued that families create their own communication environments, and following Haythornthwaite (2005), members' media use expectations may serve as a key element of such social construction of the family (Kanter, Afifi, & Robbins, 2012).

Attention between FCP and extended families has started to emerge in the literature. Sotirin and Ellingson (2006) direct research on extended family connections to use FCP because of the ambiguity and variability in the relationships. As a research tradition, FCP refers to immediate family, but clear ties from immediate family communication to extended family communication exist. Using FCP to inform extend family media use capitalizes on the connection between schema and small group communication.

An association between FCP and media use patterns may exist because FCP are connected to rules of behavior (Koerner & Fitzpatrick, 2002b). Knowing that FCP influences media perceptions (Ledbetter, 2010b), my reconceptualization of the unidimensional scale suggests that these perceptions will influence media use behavior. The rules of behavior created by FCP are external to immediate family interactions (Schrodt et al., 2008); therefore, FCP should influence media behavior outside of the immediate family, and perhaps particularly within the extended family. I speculate that FCP may predict media use patterns in extended families, although extant theory does not permit precise prediction of the nature of such associations.

RQ2: Are family communication patterns associated with media use patterns in extended family relationships?

Expectancy Violations Theory

Given this study's conceptualization of the interdependency of media use patterns and expectations, a useful theory for elaborating the communicative outcomes of such expectations is expectancy violations theory (EVT) (Burgoon & Hale, 1988). The underlying assumption of EVT states that individuals hold expectations of their own behavior as well as the behavior of others during interactions and those expectations can be violated. Violations trigger a two-part cognitive arousal process directed toward the unexpected behavior. The arousal shifts attention away from the conversation, and focuses attention on the assessment of the communicator and the communicator's behavior. The recipient of the violation makes interpretations of the message in light of the communicator and the context where the violation took place. The valence of the violation is then appraised along a continuum of positive to negative. Generally, EVT predicts that positive violations will produce favorable communication outcomes, and negative violations

result in unfavorable ones. The recipient must then interpret and evaluate the communicator behavior. Interpretation happens when the recipient makes sense of the violation, and the evaluation process assigns meaning to the action (Burgoon, 1993). This means for communicators that the best strategy may not always be to maintain expectations, but to find ways to violate expectations positively.

The *communicator reward valence* (CRV) moderates whether the violation valence will be interpreted as positive or negative (Burgoon & Hale, 1988). CRV is best understood as the degree to which someone is desirable to interact with, or when the benefits of communicating with the individual outweigh the costs. CRV is made up of static communicator and relationship characteristics (gender, status, physical attractiveness, personality, and anticipated future interaction) and interactional behaviors (possessing tangible rewards, amusing communication style, or giving positive feedback). Reward valence will influence both the interpretation and evaluation of a violation.

Expectations can represent what is anticipated to happen (*predictive expectations*) or what is preferred (*prescriptive expectations*) (Staines & Libby, 1986). Predictive expectations are often determined by cultural norms (Burgoon & Hubbard, 2005). In many situations prescriptive and predictive expectations align, but a discrepancy between the two might exist (White, 2008). Media use expectations represent both prescriptive and predictive expectations. Explicitly the hierarchy of media use represents the predictive media use expectations because it anticipates which type of tie will communicate through which medium. The prescriptive aspect of media use expectations comes from the fact that individuals may prefer that relational partners contact them via specific media associated with their tie strength, and these preferences may diverge from group norms. Indeed, as White (2008) suggests, expectations for media may not necessarily align.

For example, a child may prefer that their parent sends them a text message but anticipates that their parent will call them.

As a research tradition, EVT has received the most attention by nonverbal communication scholars across a wide variety of communication behaviors. Burgoon and her colleagues have used the theory to study touch, posture, conversational distance, and immediacy (Burgoon, 1978; Burgoon, 1991; Burgoon & Aho, 1982; Burgoon & Hale, 1988; Burgoon, Newton, Walther, & Baesler, 1989; Burgoon, Stacks, & Burch, 1982; Burgoon, Stacks, & Woodall, 1979; Burgoon & Walther, 1990; Le Poire & Burgoon, 1996). Interestingly, the Guttman scale type pattern observed by Haythornthwaite (2000) in media use expectations was found in touch, posture, and proximity expectations (Burgoon & Walther, 1990), drawing further connection between MMT and EVT. Because communication is rife with assumptions about expectations, other scholars have often employed the theory beyond nonverbal communication (see for review Johnson & Lewis, 2010). Most relevant to this investigation, studies linking EVT to communication technology are the most notable departure from traditional nonverbal communication literature. For example, online communication researchers have used EVT to explain chronemic expectations when using CMC (Kalman et al., 2006). Their findings suggest chronemic expectations are associated with the medium being used for communication, but expectations about time in CMC are ambiguous (Kalman & Rafaeli, 2010). Modality switching from online to FtF often results in various negative violations of expectations (Ramirez & Zhang, 2007). Interestingly, Fife, Nelson, and Zhang (2012) provided evidence to support the claim that the tenets of EVT extend to Facebook interactions. Schrodtt and Witt (2006) used EVT to understand student perceptions of technology use in the classroom, reasoning, “individuals have different levels of expectations for various types of interpersonal and *mediated* communication

interactions.” (Schrodt & Witt, 2006, pg. 15, emphasis added). Although such studies have established the utility of EVT for understanding online communication, what remains to be identified are the relational consequences of violating expectations for media use.

In other words, media use expectations develop, in part, because individuals conform to media use patterns (Haythornthwaite, 2005). Thus, EVT suggests that communicators can violate those expectations for media use. Specifically, I contend that a *media violation* occurs when a dyad member uses a medium that does not match the strength of the tie. A media violation can happen in two directions: addition of a medium or the subtraction of a medium. Haythornthwaite (2002) noted that both the addition and subtraction of a medium cause a disruption in a dyad’s pattern of communication. A greater disruption happens in weak ties when a medium is added or subtracted from the relationship because of the relatively few communication channels used by the dyad. Strong ties, on the other hand, do not appear to have such a great disruption of communication because they can alter their communication patterns to adapt to the change. The severity of the media violation correlates with the distance the violator travelled across the media hierarchy.

Haythornthwaite (2005) provides evidence to conclude the evaluation of the violation will be determined by the addition or subtraction of the media itself. This conclusion is drawn from her research suggesting that the addition of a medium increases the connectivity in a relationship, but the deletion of a medium may reduce the frequency of communication between partners. An increase or decrease of media use frequency that is deviant from expectations constitutes a media use violation, and triggers the cognitive process of interpretation and evaluation. It is known that adding and subtracting media have different relational consequences;

therefore, I conclude that the direction of the change in media use frequency will influence the evaluation of the media use violation.

H1: Medium condition (i.e., increasing versus decreasing media use frequency) will predict the perception of the media use violation.

As addressed previously, MMT also posits that tie strength shapes patterns and expectations for media use (Haythornthwaite, 2000). Specifically, weak ties may suffer more disruptive effects from media violations than strong ties, although strong ties do not possess complete immunity from such violations (Haythornthwaite, 2005). Following this line of theory, I predict:

H2: Tie strength will predict evaluation of the media use violation.

MMT explicitly discusses an interaction effect between tie strength and changes in media use. Haythornthwaite (2005) hypothesizes that for strong ties, a change in media use will have minimal impact on the relationships because they are able to continue to communication through a variety of media still available to them. On the other hand, changes in media use significantly disrupt weak tie relations. Using Haythornthwaite's logic, tie strength and changes in media use should interact to predict how an individual evaluates a media use violation because how increasing or decreasing media frequency influences the relationship is contingent upon tie strength. I aim to test Haythornthwaite's interaction by the evaluating the following hypothesis:

H3: Tie strength and medium condition (i.e., increasing versus decreasing media use frequency) will interact to predict evaluation of the media use violation.

Communication satisfaction

CRV plays a critical role in the evaluation of the violation (Burgoon et al., 1989). Highly rewarding communicators are viewed more positively when violating expectations than when

maintaining them, but violations harm nonrewarding communicators; indeed, nonrewarding individuals are viewed most optimally when conforming to social norms (Burgoon et al., 1979). Several factors are known to account for the CRV. A violator's gender, attractiveness, and power affect messages associated with a violation (Burgoon, 1991). Scholars have analyzed to what degree relational factors influence the expectancy violations process. Burgoon and Hale (1988) studied conditions where CRV varied by relationship type, and their findings confirm that dyads sharing an ongoing relationship are considered as more rewarding conversational partners than strangers. In addition, the relationship type influences interpretation of the violation valence (e.g., a negative violation committed by a friend results in a more serious negative violation than from a stranger). The level of commitment in a relationship is inversely associated with how strongly a violation can adversely affect the relationship (Cohen, 2010). Between romantic partners, most violations are positively-valenced and are more likely to be unexpected than important to the overall relationship (Afifi & Metts, 1998). Cross-sex friendships view violations as more important to the relationship than long-term dating partners (Bevan, 2003); thus, the stage of the relationship affects the evaluation of violations. Violations may be less important to more established relationships because there is relatively less uncertainty about the status of the relationship. Overall, then, these results indicate that CRV is an important moderator of the association between expectancy violations and the target's appraisal of their outcomes.

Traditional conceptualization of CRV includes the characteristics of the violator (i.e. physical appearance) (Burgoon et al., 1979), and interactional behaviors (i.e. giving positive feedback) (Burgoon & Hale, 1988). The variable *communication satisfaction* represents how pleasing it is to interact with another individual. Given that this study focuses on communication media, I reason that communication satisfaction serves as a particularly salient and meaningful

indicator of CRV. Consequently, I hypothesize that communication satisfaction will operate as an interactional behavior that moderates the evaluation of the violation.

H4: Communication satisfaction will moderate the effect of medium condition (i.e., increasing versus decreasing media use frequency) on evaluation of the media use violation.

H5: Communication satisfaction will moderate the effect of tie strength on evaluation of the media use violation.

Method

Participants

The sample contained 411 participants (59.9% female) recruited from communication courses at a medium-sized, private university in the southwestern United States. All participants were over the age of 18. Participants reported a mean age of 19.3 ($SD = 1.56$), and the majority identified as white/Caucasian (82.2%). Most of the participants came from intact families (80%), but the sample also contained individuals from divorced families (14.8%), deceased parent(s) (3.2%), and never married parents (1.9%). Primary caregivers during childhood consisted primarily of both parents (86.6%).

Procedures

Undergraduate students were recruited from an introductory speech communication course and were asked to complete an online survey. Participants completed the survey during regularly scheduled course hours, and they were awarded minimal course credit (2%) for completing the questionnaire. Responses to questions were anonymous. The survey began with an informed consent document, after which students indicated basic demographic information

(e.g., age, sex, year in school). Following the demographic questions, participants completed measures addressing communication in their family-of-origin and extended family. Whereas,

Much of the survey addressed a hypothetical scenario created via a 2 (strength of tie) X 2 (medium condition) experimental manipulation. For the strength of tie manipulation, participants were randomly assigned to report the initials of either (a) one extended family member with whom they have a close relationship (the strong tie condition) or (b) one extended family member with whom they communicate but do not have a close relationship (the weak tie condition). Basic demographic information was collected about the selected extended family members (e.g. age, sex, and geographic distance from participant). Participants reported a myriad of different extended family relatives: cousin (36.5%), aunt (23.1%), grandmother (16.1%), uncle (13.1%), grandfather (8.3%), and niece (.5%). Female (65%) was the most commonly used relative. Ages ranged from less than 18 (5.1%), 18-24 (19.2%), 25-34 (14.6%), 35-44 (7.8%), 45-54 (15.1%), 55-64 (13.1%), 65-75 (16.1%), to older than 75 (9%). Specifically, participants were asked to identify which medium (other than face-to-face) they were most likely and least likely to use when communicating with this family member. Options were limited to six popular forms of mediated communication: (a) voice telephone, (b) text messaging, (c) e-mail, (d) instant messaging, (e) public social networking site communication, and (f) video chat. Voice telephone was reported as the most commonly used medium (41.1%) followed closely by text messaging (37.2%). Whereas, the least frequently used media were video chat (34.3%), instant messaging (21.7%), and e-mail (18.2%).

For the second manipulation, participants were randomly assigned to imagine that (a) the extended family member “suddenly DECREASES frequency of communication with you” through the medium most likely to be used with the extended family member (the medium

subtraction condition) or (b) the extended family member “suddenly INCREASES frequency of communication with you” through the medium least likely to be used with the extended family member (the medium addition condition). Participants completed the remaining measures with this hypothetical scenario in mind. The questionnaire took approximately 30 minutes to complete, regardless of the experimental condition participants were assigned.

Measures

Family communication patterns. Participants’ family communication patterns were measured using the Revised Family Communication Patterns Scale (RFCP) (Koerner & Fitzpatrick, 2002a). The scale includes 26 questions assessing the conversation (15 questions, e.g. “My parents encourage me to express my feelings”) and conformity (11 questions, e.g. “When I am at home, I am expected to obey my parents’ rules”) orientations of the participants’ family-of-origin. Responses used a 7-point Likert scale that ranged from (1) *strongly disagree* to (7) *strongly agree*. Scores higher on the scale are associated with higher conversation and conformity orientations. Numerous previous studies have indicated the reliability and validity of this measure (for a meta-analysis, see Schrodt et al., 2008). Both dimensions received acceptable internal reliability ($\alpha_{\text{conversation}} = .86$, $\alpha_{\text{conformity}} = .67$) in this study.

Media use patterns. A modification of Ledbetter’s (2008) media use measure evaluated the participant’s media use with their extended family network as a whole. To avoid confusion with the specific extended family member addressed in the hypothetical scenario, participants completed this measure prior to selecting the extended family member. The measure assesses frequency of media use across extended family member types, with responses solicited on a 5-point scale (1 = Never, 2 = Used with only a few close extended family members, 6 = Used with all extended family members). Media measured on this scale were (a) face-to-face, (b) voice

telephone, (c) phone text messaging, (d) e-mail, (e) instant messaging, (f) public social networking site communication, (g) video chat, , and (h) postal mail.

Expectancy violations. Afifi and Metts's (1998) measure assesses five dimensions of expectancy violations: (a) violation expectedness, (b) importance, (c) impact on uncertainty, (d) valence, and (e) attribution of the violation. The measure was adapted for this study to address a hypothetical media violation rather than retrospectively evaluating a nonverbal communication violation. All responses were solicited using a 5-point Likert scale (1) *strongly disagree* to (5) *strongly agree*. Violation expectedness was measured using three items (e.g., "This change in the relative's use of this medium would be completely unexpected."). Violation importance was tested through two questions (e.g., "This change in the relative's use of this medium would be a minor relational event"). Five questions assessed the impact a violation has on uncertainty (e.g., "This change in the relative's use of this medium would make me feel a lot more confident about the state of our relationship"), and valence was assessed through four items (e.g., "This change in the relative's use of this medium would be a very positive behavior"). Lastly, attribution of the violation was measured using three items (e.g., "This change in the relative's use of this medium would be very typical of his/her personality"). Higher scores on each of the scales indicate the act would be more unexpected, important, negative, and typical of the relationship as well as the degree to which the act would increase uncertainty. Afifi and Metts (1998) and Bevan (2003) established the reliability and validity of the measure. The dimensions of expectedness ($\alpha = .92$), importance ($\alpha = .69$), and valence ($\alpha = .74$) established acceptable internal reliability. After dropping reverse coded items, impact on uncertainty demonstrated sufficient reliability ($\alpha = .79$). Attribution of the violation exhibited considerably poor internal reliability ($\alpha = .43$), and as a result, it was dropped from the current investigation.

Communication satisfaction. The communicator reward valence was operationalized through the use of the Communication Satisfaction Scale (Hecht, 1976) as modified by Forsythe and Ledbetter (2014) to assess global (versus episodic) satisfaction with communication in the relationship. This scale asks eight questions about how enjoyable communicating with the extended family member is for them (e.g. “I feel like we can laugh easily together.”). Responses were solicited using a 7-point Likert scale ranging from (1) *strongly disagree* to (7) *strongly agree*. Higher scores indicate greater communication satisfaction. Acceptable internal reliability was demonstrated for the present study ($\alpha = .91$).

Data Analysis

Data analysis proceeded in two steps. First, RQ1 asks what patterns of media use exist in extended family relationships. This question is amenable to cluster analysis methods. Once clusters of media use were identified, multinomial logistic regression was used to examine the extent to which clusters are distinguishable by family communication patterns, answering RQ2. Second, the remaining hypotheses and research question were answered via regression, with the two experimental conditions, communication satisfaction, and their interaction effects serving as predictors of the expectancy violation measures.

Results

Media Use Patterns

The first research question (RQ1) asked what types of media use patterns exist in extended family networks. This question was answered through analysis of participant reports of diversity of media use with extended family members. Participants reported the extent of their media use on eight media: (a) face-to-face, (b) voice telephone, (c) text messaging, (d) public social networking sites, (e) e-mail, (f) instant messaging, (g) video chat (e.g., Skype), and (h)

postal mail. On these variables, high scores indicated use of the medium with many extended family members, and low scores indicated use of the medium with few or no extended family members.

I used several different statistical procedures to estimate the appropriate number of clusters to best represent the data. First, I examined the frequency tables for each media variable. This inspection revealed that most participants used four of the media for communicating with extended family members: (a) face-to-face, (b) voice telephone, (c) text messaging, and (d) public social networking sites. For the other media use variables, many participants reported that they never used the medium with any extended family members. Therefore, cluster analysis employed only the four commonly used media, with the other media use variables reserved for subsequent validation of the obtained cluster solution. Second, participant responses were investigated using hierarchical cluster analysis with between-clusters linkage and squared Euclidean distance. Examination of the dendrogram suggested somewhere between 4 and 7 clusters of media use in the data. Third, I conducted k-means cluster analysis. Examination of a plot of the sums of squares for different clustering solutions also suggested somewhere between 4 and 7 clusters, and analysis using the clustering gap method (Tibshirani, Walther, & Hastie, 2001) suggested a 4-cluster solution may be optimal. Fourth, in light of these findings, I examined the variable means for solutions between four and eight clusters, evaluating the extent to which the obtained cluster solutions possessed coherency and offered meaningful differences between the groups. A five-cluster solution was selected because the solution produced groups with theoretically meaningful differences and an adequate number of participants in each group, as well as demonstrated significant differences on the validation variables (i.e., the additional media use variables and family communication patterns; see below). The five clusters were

labeled based on the average media use for each of the variables entered in the clustering procedure: (a) privately engaged, (b) synchronously engaged, (c) publicly engaged, (d) holistically engaged, and (e) holistically disengaged. Table 1 summarizes the means for the clustering and media use validation variables. Each cluster will be described in turn.

Privately engaged media users were characterized by the reservation of SNS to their close ties, and use of all other types of media across many ties. The mean of the usage for SNS ($M = 1.89, SD = 0.76$) suggests that SNS is viewed as a more private media to these individuals because they only allow their close ties in their extended family to contact them here. On the other hand, texting ($M = 4.58, SD = 0.81$), phone ($M = 4.66, SD = 1.09$), and FtF ($M = 4.98, SD = 1.08$) all had relatively similar and high means. The similar means reflects that these media appear on the same level of the media hierarchy and are used with more people than SNS. The broad use of most media across most ties is reflected in the relatively high overall mean across all four media ($M = 4.03, SD = 1.24$).

Synchronously engaged reserved asynchronous text-based media for close ties, and engaged with a broader range of ties through synchronous communication media. FtF communication represents the base of their media hierarchy ($M = 4.81, SD = 1.04$) and was used for many weak ties, and phone calls appear to be used among weak to intermediate ties ($M = 4.08, SD = 1.28$). Intermediate to strong ties used SNS ($M = 2.52, SD = 1.11$) to keep in touch, with texting reserved for strong ties ($M = 1.99, SD = .63$). The synchronously engaged cluster represents the clearest hierarchical distinctions among the clusters, and is most similar to Haythornthwaite's (2000) original notion of media use patterns.

Publicly engaged users were distinguished by their use of SNS across many ties ($M = 4.52, SD = 0.99$); indeed, it is the only group where FtF is not the base medium of the hierarchy.

Table 1

Five-Solution Cluster Analysis of Media Use Patterns in Extended Family Relationships

	Privately Engaged (n = 64)	Synchronous Engaged (n = 74)	Publicly Engaged (n = 120)	Holistically Engaged (n = 122)	Holistically Disengaged (n = 49)	F	η^2
FTF	4.98(1.08) ^{ab}	4.81(1.04) ^a	3.55 (1.18)	5.34(.92) ^b	2.29(.89)	101.60	0.50
Texting	4.58(.81)	1.99 (.63) ^a	3.57(1.08)	5.12(.92)	1.69(.82) ^a	115.70	0.69
SNS	1.89(.76) ^a	2.52(1.11) ^b	4.52(.99)	4.96(.90)	2.20(1.08) ^{ab}	182.37	0.64
Phone	4.66(1.09)	4.08(1.28)	3.15(1.01)	5.25(.88)	2.02(.83)	224.61	0.53
Mean	4.03(1.24)	3.35(1.14)	3.70(.50)	5.17(.14)	2.05(.23)		
Validation Variables							
Email	2.75 ^a	2.30 ^{ab}	2.37 ^a	3.94	1.72 ^b	28.31	0.22
Instant Messaging	1.49 ^{ab}	1.16 ^a	1.91 ^b	3.00	1.20 ^a	33.15	0.25
Video Chat	1.50 ^a	1.58 ^a	1.84 ^a	2.79	1.39 ^a	19.35	0.16
Postal Mail	2.94 ^{ab}	2.81 ^{ac}	2.61 ^{ad}	3.45 ^b	2.06 ^d	8.64	0.08

For each row, means with the same superscript were not statistically different from each other at $p < .05$.

The media of texting ($M = 3.57$, $SD = 1.08$), FtF ($M = 3.55$, $SD = 1.18$), and phone ($M = 3.15$, $SD = 1.01$) were all used somewhat less broadly throughout the extended family network, but there was no clear distinction of a medium that is reserved for strong tie family members. The mid-range means for these variables suggest general engagement with extended family across a variety of media.

Holistically engaged users had relatively little distinction between ties and media use. Individuals in this cluster indicated the use FtF ($M = 5.34$, $SD = .92$) most commonly throughout their familial ties followed by phone ($M = 5.25$, $SD = .88$), texting ($M = 4.96$, $SD = .92$) and SNS ($M = 4.96$, $SD = .90$) as the least common. Yet, it is worth noting that the mean of SNS is the highest of any group, as well as much higher than the lowest mean in any other group. Clearly, holistically engaged individuals use many media across all different types of ties with little reservation for private media, and there appears to be a lack of a hierarchal structure based on tie strength. This cluster, which possessed the largest number of members, seems to indicate a group of participants who maintain frequent contact across a variety of extended family relationships using a variety of media.

In contrast, *holistically disengaged* users are distinguished by the use of all media for only a limited set of their ties. Most media in this group appears to be private and reserved for only close to intermediate ties. FtF ($M = 2.29$, $SD = .89$) is the medium used across the largest amount of ties, a mean score much lower than in any of the other groups. Texting ($M = 1.69$, $SD = .92$) seemed to be the medium most reserved for strong ties, with phone ($M = 2.02$, $SD = .83$) and SNS ($M = 2.20$, $SD = 1.08$) in between. In contrast to the holistically engaged group, the holistically disengaged group seems to employ relatively few media to communicate with the

extended family broadly, perhaps only using such media to maintain contact with particularly close family members. In this group, there is a lack of weak tie connections through media use.

Family Communication Patterns and Media Use Patterns

Research question two (RQ2) asked whether FCP predicts group membership for media expectations. This question was evaluated using multinomial logistic regression, a technique which permits the researcher to examine which variables significantly predict levels of a categorical variable. Holistically engaged media users were used as the reference category for probabilities of group membership, both because it possessed the largest sample size and because they appeared to be the most connected to extended family ties of the groups. Because previous research has demonstrated statistically significant associations between sex and FCPs (Koerner & Fitzpatrick, 2002b), sex was entered as control variable. In addition to the conditional effects of FCP, the interaction effect between them was created using the orthogonalization procedure described by Little et al. (2007).

Results indicated that the model variables significantly predicted group membership, Cox-Snell pseudo- $R^2 = .12$. Likelihood ratio tests revealed sex produced a significant omnibus effect on group membership, $\chi^2 = 20.98, p < .01$. Conversation orientation was likewise a significant predictor, $\chi^2 = 14.38, p < .01$, but conformity orientation was not, $\chi^2 = 8.29, p > .05$. Moreover, the omnibus test revealed that conversation orientation and conformity orientation interacted to predict group membership, $\chi^2 = 9.78, p < .05$. Multinomial logistic regression output for each group is located on Table 2.

Examination of the regression parameters comparing the other groups to the holistically engaged group revealed that men were more likely to be privately engaged, $B = -1.02, OR$ (odds ratio) = .36, $p < .01$, and synchronously engaged, $B = -0.96, OR = .38, p < .01$, with the extended

Table 2

Summary of multinomial logistic regression with Holistically Engaged as the reference category

Clusters	B	Odds Ratio
Privately Engaged		
Sex	-1.02**	0.36
Conversation	-0.20	0.82
Conformity	-0.52	0.59
Conversation X Conformity	1.22*	3.39
Synchronously Engaged		
Sex	-0.96**	0.38
Conversation	-0.79*	0.46
Conformity	-0.85*	0.43
Conversation X Conformity	1.08*	2.93
Publicly Engaged		
Sex	-0.12	0.89
Conversation	-0.47	0.62
Conformity	-0.71*	0.49
Conversation X Conformity	1.06*	2.87
Holistically Disengaged		
Sex	0.25	1.28
Conversation	-1.08**	0.34
Conformity	-0.53	0.59
Conversation X Conformity	0.08	1.08

* $p < .05$ ** $p < .01$

family members. Women, on the other hand, had greater probability of being holistically engaged than privately engaged and synchronously engaged. However, no sex-based significant differences emerged for publicly engaged and holistically disengaged.

For FCP, results indicated that individuals who were low in conversation orientation were more likely to be synchronously engaged, $B = -.79$, $OR = .46$, $p < .05$, as compared to the holistically engaged group. In addition, low conversation increased the likelihood that an individual would be in the holistically disengaged category, $B = -1.08$, $OR = .34$, $p < .01$. Conversely, participants who were high conversation orientation had a greater chance of being holistically engaged users than synchronously engaged and holistically disengaged. Conversation orientation did not predict group membership for privately engaged or publicly engaged.

Although conformity did not produce an omnibus effect, it is worth noting the statistical differences identified in the between-group comparisons. Although the nonsignificant omnibus effect merits caution when interpreting results, the significant interaction effect for conversation and conformity orientations (see below) suggests devoting at least some attention to the conditional effect of conformity orientation. Low conformity orientation increased the probability of being synchronously engaged, $B = -.85$, $OR = .43$, $p < .05$, as well as publicly engaged, $B = -.711$, $OR = .49$, $p < .05$, as compared to the holistically engaged group. The probability of participants with high conformity orientation being holistically engaged was greater when compared to these groups. Privately engaged and holistically disengaged group membership was not predicted by conformity orientation.

The interaction between conversation orientation and conformity significantly predicted group membership. Membership in the synchronously engaged group was significantly predicted by the interaction, $B = 1.08$, $OR = 2.93$, $p = .05$ (see Figure 1). The interaction was decomposed

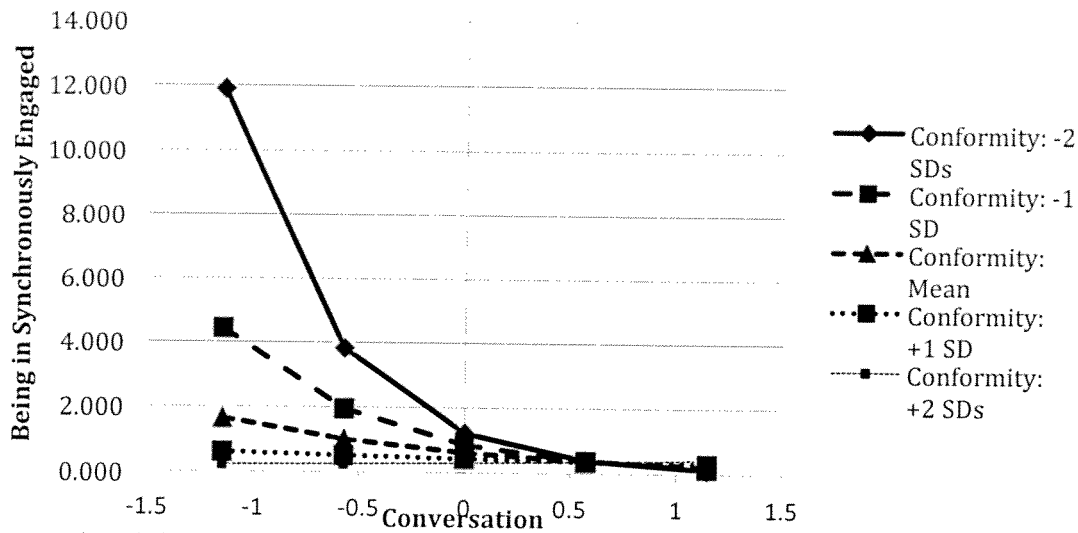


Figure 1. FCP as a predictor of synchronously engaged group membership.

using a method described by Cohen, Cohen, West, and Aiken (2003) for logistic regressions. Decomposition of this interaction revealed that the laissez-faire family type has a greater probability of being in this cluster than any other family type. Likewise, the interaction significantly predicted group membership for publicly engaged, $B = 1.06$, $OR = 2.87$, $p < .05$ (see Figure 2). Examination of the interaction revealed that laissez-faire families have a greater probability to be in the publicly engaged group than the holistically engaged group, with some suggestion that consensual families also may have a slightly greater chance of being publicly engaged. As presented in Figure 3, the interaction effect also predicted membership in the privately engaged group, $B = 1.22$, $OR = 3.39$, $p < .05$. Similar to previous groups, decomposition of the interaction found that it is more probable for the laissez-faire family type to be classified as privately engaged than the remaining three family types.

Media Use Expectations

Beyond these overall patterns for media use with extended family generally, participants were also presented with a scenario describing a specific media use violation by a specific extended family member. Five hypotheses regarding media use violations were tested. The first predicted that medium condition would influence the perception of the violation. The second hypothesis predicted that tie strength would influence the evaluation of the violation, and the third hypothesis predicted that tie strength and medium condition would interact to predict evaluations. Communication satisfaction was predicted to moderate the effects of medium condition (H4) and tie strength (H5). All hypotheses were tested using hierarchical regression analyses predicting the four dependent variables representing evaluations of media use violations: (a) violation expectedness, (b) violation valance, (c) violation importance, and (d) violation impact on uncertainty. Tie strength (0 = weak tie, 1 = strong tie) and medium condition

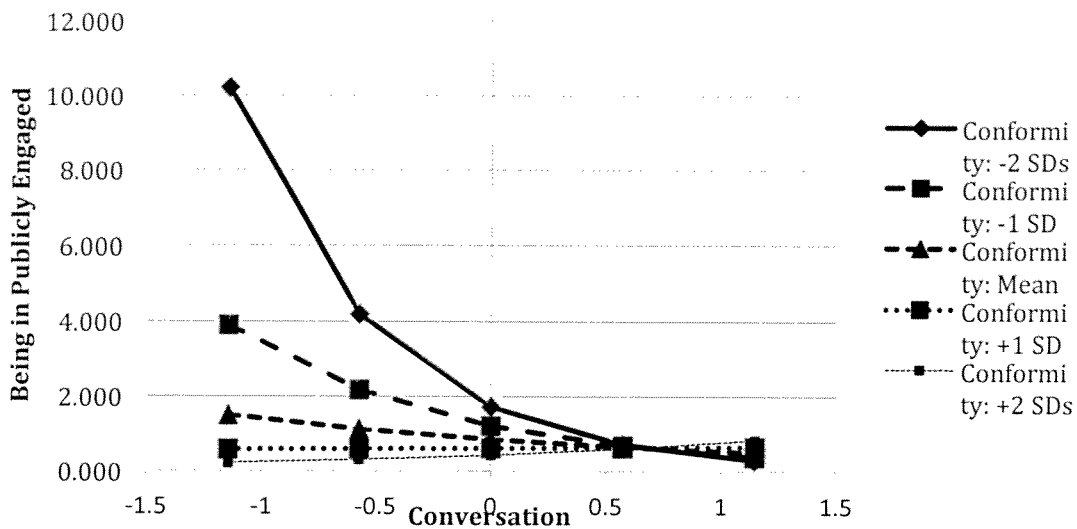


Figure 2. FCP as a predictor of publicly engaged group membership.

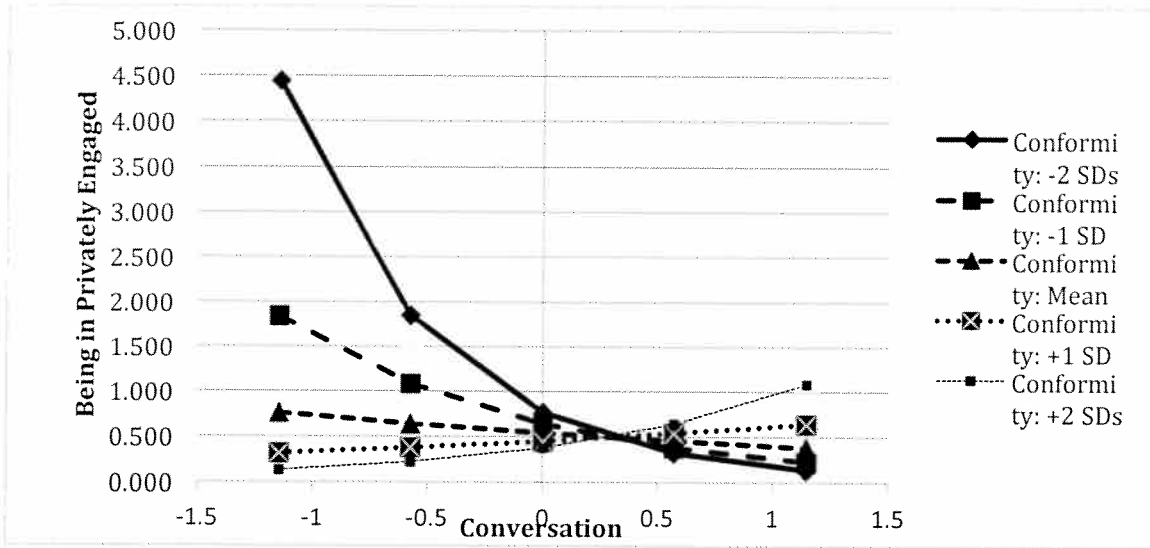


Figure 3. FCP as a predictor of privately engaged group membership.

(0 = decreasing frequency, 1 = increasing frequency) were binary coded and mean-centered prior to analyses. In addition, communication satisfaction was mean-centered and entered as a predictor. Additionally, the regression model contained orthogonalized interaction terms (Little, Card, Bovaird, Preacher, & Crandall, 2007) representing all possible two-way and three-way interaction effects among tie strength, medium condition, and communication satisfaction. Table 3 summarizes the obtained regression parameters for these analyses. Results will be explained for each dependent variable below.

Violation Expectedness. Results from the hierarchical regression with violation expectedness as the criterion variable produced a significant correlation coefficient, $R^2 = 0.40$, $F(7, 403) = 37.99$, $p < .01$. Medium condition produced a significant conditional effect on violation expectedness, $\beta = .57$, $p < .01$. Generally, increasing media use frequency results in a greater amount of unexpectedness than decreasing media use frequency. Tie strength also had a significant effect on violation expectedness, $\beta = .12$, $p < .01$, suggesting that violations are more unexpected from strong ties and more expected from weak ties. Additionally, an interaction effect was found between medium condition and communication satisfaction, $\beta = -.11$, $p < .01$. This interaction effect was decomposed using the procedure described by Cohen et al. (2003). As presented in Figure 4, low communication satisfaction made a decrease in medium use more expected than individuals high in communication satisfaction. Conversely, when individuals low in communication satisfaction increased use of a medium it was perceived as more unexpected than when high communication satisfaction individuals did the same. In other words, low communication satisfaction seemed to augment the effect of both increasing and decreasing media on expectedness.

Table 3

Summary of Hierarchical Regression Analyses for Violation Evaluation Variables

Predictors	Violation Unexpectedness <i>B</i> (β)	Violation Importance <i>B</i> (β)	Violation Valence <i>B</i> (β)	Violation Uncertainty <i>B</i> (β)
Variance Explained	$R^2 = .40^{**}$	$R^2 = .08^{**}$	$R^2 = .25^{**}$	$R^2 = .08^{**}$
Tie Strength	0.30(12)**	0.04(.02)	-0.10(-.07)	0.08(.35)
Medium Condition	1.40(.57)**	0.21(.11)*	0.67(.48)**	-0.44(-.27)**
Comm. Satisfaction	0.02(01)	0.02(.02)	0.01(.02)	0.04(.03)
Tie Strength X Medium Condition	-0.38(-.08)	-0.41(-.11)*	-0.14(-.05)	0.27(.08)
Tie Strength X Comm. Satisfaction	< .01(< .01)	0.31(.05)	-0.06(.03)	0.08(03)
Medium Condition X Comm. Satisfaction	-0.58(-.19)**	-0.41(-.17)**	0.23(.13)**	-0.10(.05)
Tie Strength X Medium Condition X Comm. Satisfaction	0.36(.05)	0.31(.05)	0.12(.03)	-0.20(.04)

* $p < .05$ ** $p < .01$

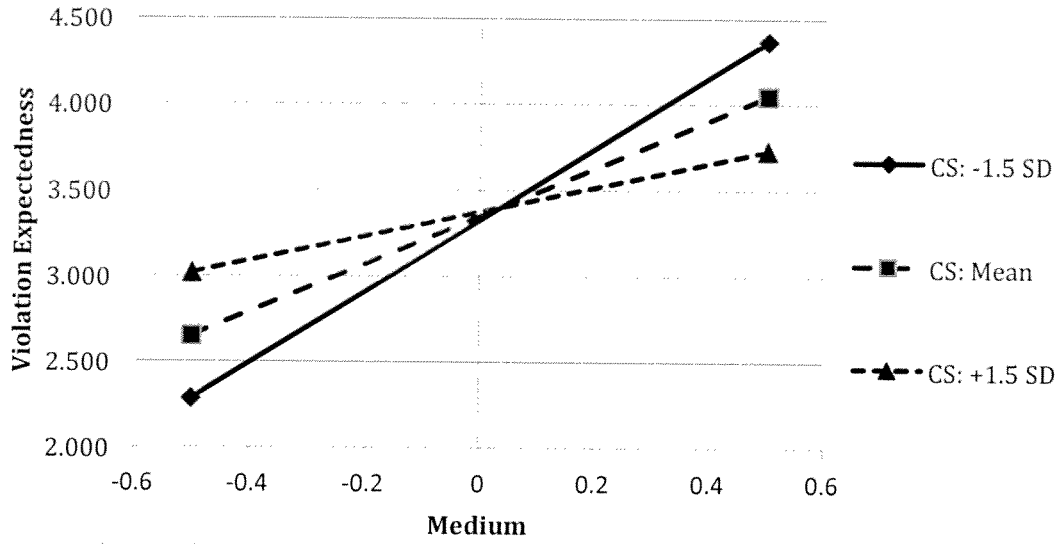


Figure 4. Medium condition and communication satisfaction as predictors of violation expectedness.

Violation Importance. The hierarchical regression analysis predicting violation importance found a significant amount of variance explained by the model, $R^2 = 0.08$, $F(7, 403) = 5.00$, $p < .01$. Although tie strength had no significant conditional effect on violation importance, $\beta = .02$, $p > .05$, results revealed a significant conditional effect for medium condition, $\beta = .11$, $p < .05$, such that increasing a medium was viewed as more important than when a medium was decreased. Moreover, medium condition and communication satisfaction interacted to predict violation importance, $\beta = -.17$, $p < .01$. Decomposition of this interaction effect (see Figure 5) found that medium condition exerted the strongest effect for family members who were unsatisfying communicators, such that decreasing media use frequency was viewed as less important and increasing media use frequency was seen as more important. However, when communication satisfaction was high, the effect of media condition on importance weakened. Furthermore, medium condition also interacted with tie strength to predict violation importance (see Figure 6). Decomposition revealed that, for weak ties, decreasing the use of a medium was less important to the relationship than when a medium was increased. For strong ties, the increase or decrease of a medium had almost no effect on violation importance.

Violation Valence. A significant multiple correlation coefficient emerged for the model predicting violation valence, $R^2 = 0.25$, $F(7, 403) = 18.79$, $p < .01$. No significant effect emerged for tie strength, $\beta = -.10$, $p > .05$, but medium condition produced a significant conditional effect, $\beta = .48$, $p < .01$. The increase in the use of a medium was perceived more positively than the decrease in the use of the medium. In addition, the interaction between medium condition and communication satisfaction produced a significant effect (See Figure 7). Decreasing media use frequency was a more negative violation when the individual had high communication satisfaction. For

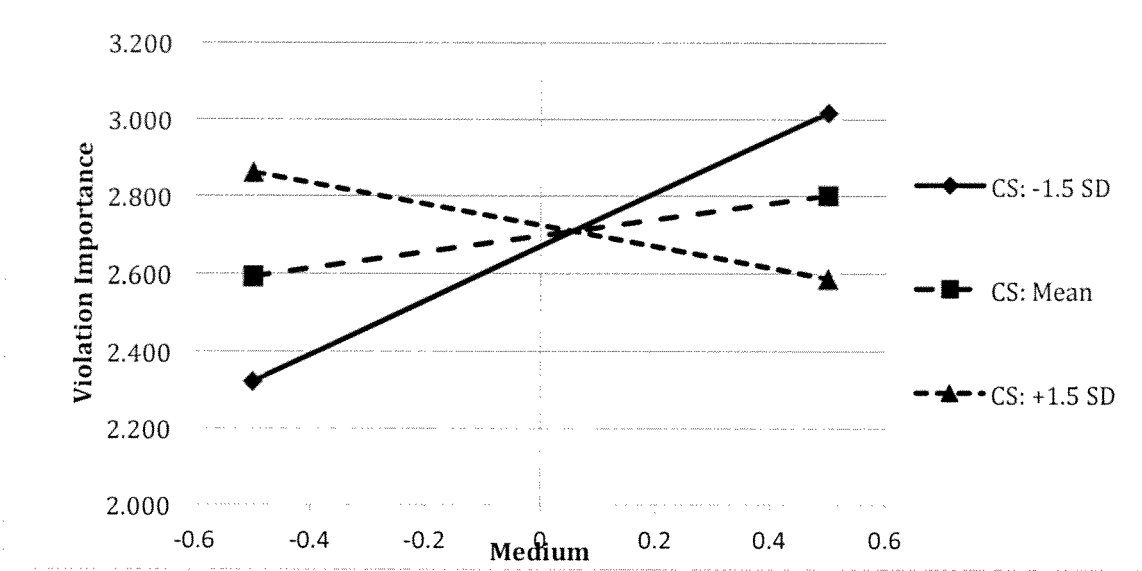


Figure 5. Medium condition and communication satisfaction as a predictor of violation importance.

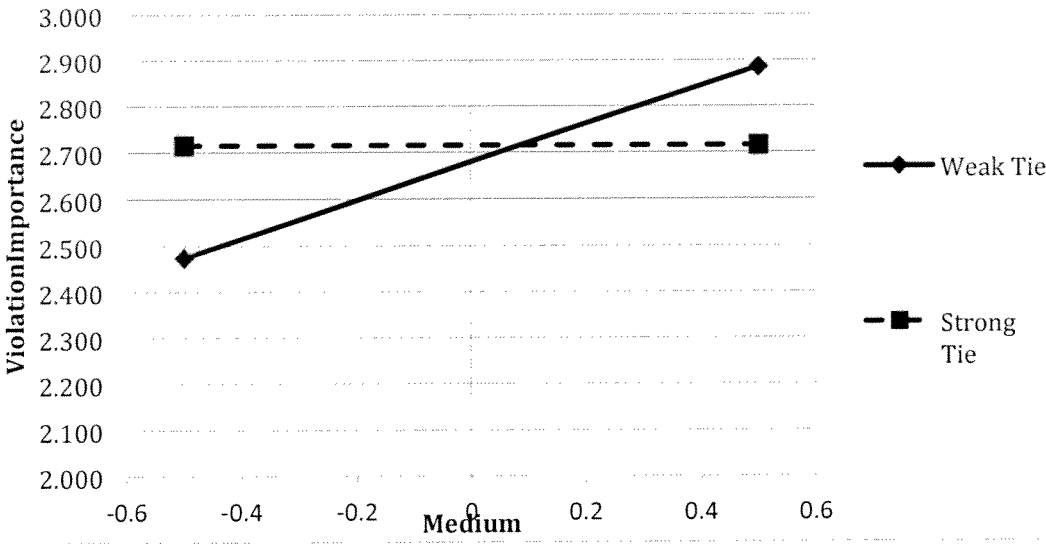


Figure 6. Medium condition and tie strength as a predictor of violation importance.

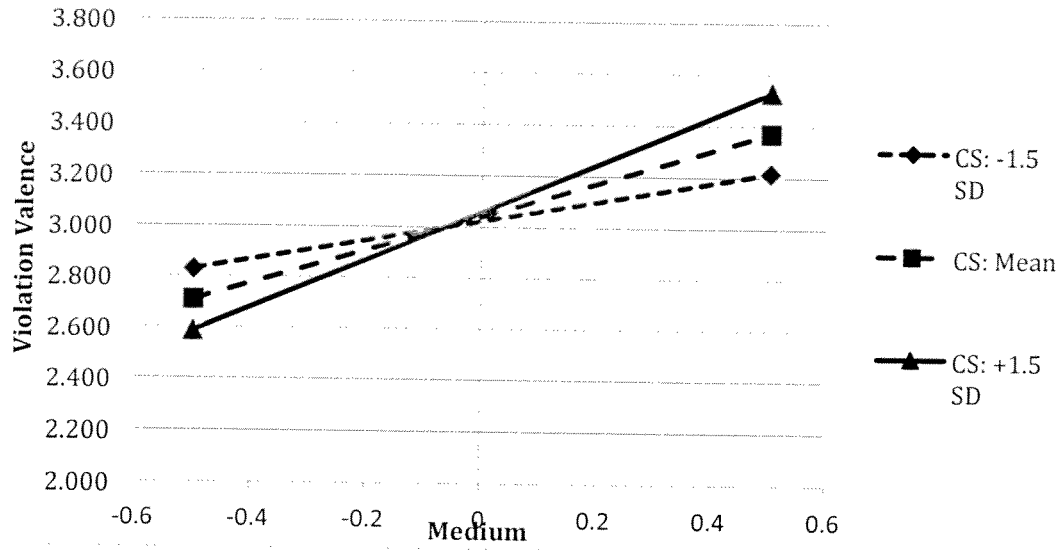


Figure 7. Medium condition and communication satisfaction as a predictor of violation valence.

individuals with low communication satisfaction this evaluation was less negative. When individuals higher in communication satisfaction added a medium it was more positive than when low satisfaction individuals added a medium. In other words, high communication satisfaction seemed to augment the effect of the violation on perception of its valence.

Violation Impact on Uncertainty. The hierarchical regression explained a significant, albeit somewhat smaller, portion of the variance of violation impact on uncertainty, $R^2 = 0.08$, $F(7, 403) = 5.15$, $p < .01$. Tie strength had no significant conditional effect on violation uncertainty, $\beta = .05$, $p > .05$. Medium condition had a significant effect on violation uncertainty, $\beta = -.27$, $p < .01$. Specifically, increasing media use frequency produced a weaker impact on uncertainty than decreasing media use frequency. Unlike the other dependent variables, neither tie strength nor communication satisfaction moderated the effect of medium condition.

Taking the four regression analyses overall, it is clear that medium condition was the central predictor across all four regressions; generally, increasing media use frequency was more unexpected, more important, more positive, and had less of an impact on uncertainty than did decreasing media use frequency. Overall, these findings supported H1. Tie strength was less impactful on the evaluation of the violation than increasing or decreasing media use frequency, producing a conditional effect only on violation expectedness; therefore, H2 was only partially supported. The interaction between tie strength and medium condition only predicted the outcome of violation importance, partially supporting H3. Communication satisfaction was a stronger moderator of media use violations than tie strength. For satisfying communicators, increasing media use frequency was more positive, and decreasing media use frequency was more negatively-valenced. For unsatisfying communicators, increasing media use frequency was more unexpected and important, and decreasing media use frequency was more expected and

less important. All moderating effects of communication satisfaction were found with medium condition not tie strength. These findings reject H4 yet support H5.

Discussion

In an effort to develop MMT into a more comprehensive interpersonal communication theory, the goals of this manuscript were twofold: First, this study aimed to identify what patterns of media use exist in families, and second, this study examined the outcome of violating media use expectations by increasing or decreasing use of a medium within a particular extended family dyad. This study contributes to MMT research by identifying different media use patterns among extended family relationships, and thus represents an initial attempt to answer the lingering question of how to predict media use patterns when organizationally established media are absent (Ledbetter & Mazer, 2013). EVT was used to investigate how changes in media use violate relational norms, and the direction of the change in media use frequency emerged as the primary predictor of the evaluation of the violation. Moreover, these findings indicate that evaluation of the media use violation is moderated by communication satisfaction and tie strength.

Media Use Patterns

The first research question explored the media use patterns in extended family networks. Via cluster analysis of the frequency of FtF, texting, SNS, and telephone communication, five types of media users emerged in the sample. The different groups display how individuals engage in maintaining their extended familial ties through media. The first cluster was privately engaged users who used private channels to communicate with extended family members broadly. For this type of user, SNS were reserved for strong tie family relationships.

The second group, the synchronously engaged, most clearly exhibited the hierarchical media use pattern discussed by Haythornthwaite (2005), evidencing distinctions between what media they used to communicate with strong, intermediate, and weak ties. Publicly engaged media users were an additional type of media user found in the data. To some extent, these users represent the opposite of the privately engaged cluster, because they communicate with all ties on SNS, but they retain FtF, texting, and telephone for stronger ties. For these users, no media was set aside specifically for strong ties.

The final two groups demonstrate similar uniformity of media use across extended family ties, yet differ in their frequency of media use. Holistically engaged media users reported using all four media broadly across their extended family ties. A hierarchy of media based off of tie strength did not emerge from the data because, for these users, all ties were welcome to communicate on any of their media. Individuals belonging to this group of media users frequently use all media to communicate with their family network. Holistically disengaged users, on the other hand, indicated that they only communicated on FtF, texting, SNS, and telephone with close ties. It appears, then, that these users were communicatively disconnected from extended family members who were not strong ties.

Taken overall, some hierarchical patterns in media use emerged in these data, but media use patterns were not as hierarchical as hypothesized by Haythornthwaite (2005). The majority of the media use patterns lacked differentiated tiers of media based off of tie strength. The lack of hierarchy could be due, in part, to the nature of extended families. This study steps outside of the organizationally-focused MMT tradition on media use patterns to research an interpersonal group, and an extended familial network is a social group of individuals who lack the norms of an organization. This is perhaps why we see differences arise in the data between these two types

of groups; Case in point, although communicative disengagement may not be possible in an organization (and may carry the penalty of formal severance from it), clearly such disengagement occurs for young adults with their extended family ties. As a result, certain tenets of MMT will continually need to be adapted as the theory continues to be applied to interpersonal relationships because of the lack of organizational norms.

These five groups inform research showcasing how individuals engage in maintaining their ties through media differences from person to person. One pattern of media use (e.g., hierarchy) is not universal in extended family relationships, but individuals do follow predictable and distinguishable patterns of media use. Because media use impacts the overall strength (Haythornthwaite, 2005) and closeness (Baym & Ledbetter, 2009) of the relationship, media use patterns are a descriptive way of determining the overall cohesion in a group. The phenomenon of media multiplexity suggests that holistically engaged users are much closer with their extended family members than the other groups because of the number of media holistically engaged users employ to communicate with their extended family network. Thus, media multiplexity informs media use patterns to provide an understanding of the strength and closeness of the group.

The influence that tie strength has on media use patterns in extended families appears to be less influential than what Haythornthwaite (2005) would suggest. The lack of overall hierarchy in each implies that there are unknown variables in addition to tie strength that determine media use patterns. This study does not address what those additional variables might be, but it does suggest a clear line for future MMT research. Attitudes toward communication media would be one place to look in future investigations (Ledbetter, 2009a). Ledbetter and Mazer (2013) reported that MMT research needs to connect CMC research on networking (e.g.

tie strength) and psychological characteristics (e.g. online communication attitudes), and media use patterns/expectations would be constructs useful for integrating these two lines of research. Although this study represents an initial first step in understanding patterns of media use in families, only future research can further identify precursors to specific media use patterns. Understanding such precursors will inform how dyads negotiate (un)satisfying patterns of communication.

In addition to the theoretical implications noted above, this study also offers a methodological advance by adapting Ledbetter's (2008) media use measure to provide a new tool for researchers to use to identify media use patterns. As far as I am aware, it is the first survey instrument that attempts to assess the unidimensional scale (i.e., media use patterns; Haythornthwaite, 2005). Nevertheless, the instrument contains one potential conceptual weakness that could be redressed in future research. Although the Likert-type scale ranged from use of the medium with many ties (5) to use of the medium with just a few close ties (1), we also included a response option for never using the medium with any ties (0). Yet, there may be a qualitative difference between never using a medium to communicate and only using a medium with very close ties. Although we generally elided that complication in this study by focusing on the four media used frequently with extended family, a future study could further evaluate the extent to which such a measure validly assesses patterns of media use within a social network.

Family Communication Patterns and Media Use Patterns

Previous research by Ledbetter and Mazer (2013) noted that it is unclear how groups of individuals establish media use patterns when no organizationally established media exist. The second research question of this study addressed this gap in the research by using FCP to predict media use patterns in extended families. Results provided evidence supporting the idea that FCP

influences how individuals use media with their extended family. In particular, conversation orientation differentiated between media users, as did the interaction between conversation and conformity orientation. Moreover, biological sex, which was entered as a control variable, explained an additional amount of the variance in cluster membership. These findings support the five-cluster solution selected to explain media use patterns.

Findings indicated that individuals high in conversation orientation were more likely to be holistically engaged in maintaining their extended familial ties. Low conversation orientation increased the probability of membership in both the synchronously engaged as well as holistically disengaged. Conversation orientation measures how much family members are encouraged to engage in conversation with one another (Koerner & Fitzpatrick, 2002a); thus, these findings make sense because synchronously engaged and holistically disengaged users are more restrictive with how they use media with their extended family members. On the other hand, holistically engaged individuals are unrestrained in their use of media to communicate with extended family members.

Despite conformity orientation failing to emerge as a significant predictor on its own, several between-groups differences were found. Low conformity orientation increases likelihood of following the synchronously engaged and publicly engaged media use patterns. High conformity orientation is more likely to be found among holistically engaged media users. Conformity orientation stresses the homogeneity among family members, and holistically engaged users highlight the interdependence of family and favoring of family relations over external relationships because their media use patterns build stronger ties among family members through media multiplexity (Haythornthwaite, 2005). Synchronously engaged users maintain their independence from their family members through the use of asynchronous media likely

because extended family interactions, such as holiday parties, often require the use of synchronous media, but individuals in this category are able to control communication with their extended family members via asynchronous media (Walther, 1996). Publicly engaged users maintain their extended family ties primarily through the use of SNS. SNS allows for people like aunts and uncles to keep up to date on them without an invasion of their independence from their family.

Sex also predicted group membership. Females exhibited an increased likelihood of being in the holistically engaged group, and males had a greater probability of following either a synchronously engaged or privately engaged media use pattern. These results are supported by research on sex differences in communication behavior. Females consistently have reported engaging in more communication with relational partners through media, whereas men communicate less (e.g., Ledbetter, Broeckelman-Post, & Krawsczyn, 2011). Ledbetter (2009b) found that women are more likely to use synchronous online media and social networking communication. This is consistent with this study's finding that women are more likely to be holistically engaged, as well as men's more limited use of media in their extended families.

Of the four family types, *laissez-faire* families were found to be the most distinctive regarding media use patterns in extended families. Overall, being from a *laissez-faire* family increased the probability of group membership in synchronously engaged, privately engaged, and publicly engaged. The results also suggested it is unlikely that an individual from a *laissez-faire* family type follows a holistically engaged media use pattern. Although only future research can probe why the *laissez-faire* family type seems to exhibit distinctive patterns of media use, I will briefly and tentatively consider some possible explanations here. First, *laissez-faire* families possess a low conversation orientation, and holistically engaged media use patterns epitomize

high conversation via multiple media. Second, synchronously engaged, privately engaged, and publicly engaged groups all exercise a degree of restriction with their media use. Synchronously engaged restrict their weak ties from the use of texting and SNS, publicly engaged limit conversation to SNS, and privately engaged constrain conversation away from SNS. Although these different groups may appear contradictory for the same FCP type, their overall patterns of media use possess similarity by encouraging independence and causing conversation to be avoided among all extended family ties. Results also suggested, very tentatively, that there might be a slightly greater chance for consensual families to be privately engaged. Privately engaged users have many media available to them to converse with their extended families ties, and this links to their high conversation orientation. The lack of SNS use among these types of could result from a lack of need to go outside of the family for information and values. Ledbetter (2010b) reported that young adult children from consensual families perceive online self-disclosure more positively because it allows family members more time to edit their message to present themselves as they desire. By using FtF, texting, and telephone, they are reinforcing their interdependence with their family, and can craft self presentation that meets familial expectations. Nevertheless, the trend indicating an association between the consensual type and the privately engaged cluster was quite weak, and thus awaits further investigation to clarify the existence and meaningfulness of that association.

This study advances Ledbetter's (2010b) conclusion that families equip their members with schema for how to use media in their external network. Furthermore, it elaborates on Ledbetter and Mazer's (2013) call to determine how individuals use media when organizational norms are not present. Parents teach their children to use technology through the family climate toward conversation and conformity present in the home (Ledbetter, 2010b). From this climate,

children learn how to use media to engage with individuals outside the immediate family. Thus, these findings suggest that family interactions help develop a media schema for each individual family member, and this schema will help socially construct the meaning of a medium's use. This speculation about media schema awaits empirical testing, but results provided indicate family interactions influence media use patterns. Media use patterns rests upon the idea that group members socially construct the use of media (Haythornthwaite, 2005), and these results suggest the importance of studying how families influence the social construction of a medium in interpersonal relationships. As a result, multimodality research should continue to elaborate on how family members influence each other's point of view on how to use media.

Finally, these results provide the logical extension of FCP outside of immediate family interactions to extended families (Sotirin & Ellingson, 2006). To date, almost all FCP research has focused on the immediate family (Schrodt et al., 2008). Given that FCPs emerge from patterns of marital communication (Fitzpatrick & Ritchie, 1994), and the marital dyad emerges, in part, from the extended family network, it stands to reason that FCP would predict communication outcomes between uncles, aunts, and grandparents because of the parental link to these extended family members. Results here support the claim that FCP will influence media use among extended family members, but additional information processing, behavioral, and psychological outcomes could be predicted, and should be addressed in future research.

Media Use Expectations

Given that, following MMT (Haythornthwaite, 2005), established media use patterns cause individuals to anticipate media use in their relationships, I reasoned that violations of such media use expectations would have relational consequences. Using EVT (Burgoon & Hale, 1988), changes in media use frequency, tie strength, and communication satisfaction were

explored to determine what predicts the evaluation of a violation. Violation expectedness, valence, importance, and impact on uncertainty were measured to determine how the recipient appraises media use violations.

Consistent with H1, medium condition (i.e., whether the extended family member increased or decreased frequency of communication using the medium) was the most influential predictor of how the participant evaluated the violation. Increasing media use frequency was evaluated as more unexpected, more important to the relationship, more positively-valenced, and caused less uncertainty than decreasing media use frequency. These findings are consistent and elaborate upon Haythornthwaite's (2002) explanation of how addition and subtraction of media influence a relationship: Adding (or increasing) a medium may strengthen a relationship, and deletion (or decreasing) of a medium may weaken or sever the relational tie. Participants indicated that additional media use is more unexpected; thus, more cognitive arousal is experienced when a media use frequency is increased (Burgoon et al., 1989). Berger and Calabrese (1975) have demonstrated that communication frequency is inversely associated with uncertainty, and thus the more media used in a relationship is inversely associated with uncertainty about the relationship, although there were small effect sizes. Burgoon and Hale (1988) mentioned that certain actions have a universally negative or positive valence. Increase in media use frequency appears to be positively-valenced, and decrease in media use frequency appears to be negatively-valenced. Yet, understanding of these conditional effects is incomplete apart from consideration of the moderating effect of the nature of the interpersonal relationship.

The second hypothesis predicted that tie strength would influence the evaluation of the violation. Violation expectedness was the only violation variable predicted directly by tie strength, such that violations are more unexpected from strong ties than weak ties. H3 predicted

that tie strength would interact with medium condition to predict the violation evaluation. Violation importance was predicted by the interaction between the tie strength and medium condition. For strong ties, it was not relationally important whether the frequency of contact on a medium is increased or decreased; indeed, in the decomposition, the slope for strong ties was almost exactly zero. For weak ties, an increase in media use was more important and a decrease in media use was viewed as less important. These results support the claim made by MMT that the addition or subtraction of a medium from a strong tie relationship will have little effect on the relationship because other media are available for communication. For weak ties, however, the removal or addition of a medium will disrupt the communication patterns of a relationship and have a larger effect on their overall relationship. Although these hypotheses about tie strength (i.e., H2 and H3) received partial support, overall tie strength was less influential on the evaluation of the violation than predicted by MMT.

Following EVT (Burgoon & Hale, 1988), communication satisfaction served as an additional moderator of the violation, and significant moderating effects emerged for expectedness, importance, and valance, supporting H4 (i.e., that communication satisfaction would moderate the effect of medium condition). However, communication satisfaction did not likewise moderate tie strength, and thus H5 did not receive support. Satisfying communicators were viewed more positively when they increased media use frequency, yet participants perceived them more negatively when they decreased media use frequency. These results suggest that satisfying communicators might strengthen family ties when increasing the number of media used in their relationship, yet should exercise caution when decreasing frequency of media use, because such a decrease may bear a significant relational penalty. Additionally, increasing media use frequency for unsatisfying communicators was more unexpected and more important.

Conversely, when unsatisfying communicators decreased media use frequency it was viewed as less important and less unexpected than when a satisfying communicator performs the same action. Taken together, unsatisfying communicators should be careful when increasing media in a relationship because it may be viewed as more unexpected and less positive. If an unsatisfying communicator wishes to decrease media use with an individual, this action will likely have minimal relational consequences. Communication satisfaction influences the expectations individuals have for media use. Burgoon and Hale (1988) state individuals with high CRV will be evaluated more positively when violating norms rather than maintaining them, but for media use violation this does not appear to be the case. When a highly rewarding communicator decreases media use frequency, this is perceived more negatively than for a less-rewarding communicator. This is likely due to the fact that changes in media use frequency were the primary driver of the evaluation of the violation. Therefore, increases and decreases in media use have inherent values assigned to them. MMT offers a similar explanation regarding changes in media use, suggesting that increasing media use is inherently positive and decreasing is inherently negative because of how the change in media use will change a person's social network (Haythornthwaite, 2005).

Overall, then, communication satisfaction emerged as a more potent moderator than tie strength in determining how participants evaluated violations of media use expectations. These findings represent a significant departure from traditional MMT research that has continued to affirm tie strength as the most influential moderator of media use in relationships (e.g., Baym & Ledbetter, 2009). As a theory with roots in sociology, Haythornthwaite (2005) conceptualized tie strength as the combination of several different characteristics bound into one variable (cf. Granovetter, 1973). Yet, interpersonal scholarship has long conceived of relational quality more

broadly, distinguishing, for example, because the level of interdependence and satisfaction within a relationship (Ledbetter, 2010a). Embedded within the idea of tie strength is the notion that weak ties are less satisfying to communicate with than are strong ties. However, relational partners may share a strong tie, but they may also not find communicating with each other satisfying (e.g., feuding siblings). The inverse for weak ties is also true (e.g., a helpful second cousin). Despite their tie strength, an increase in media use for unsatisfying communication partners may be detrimental to the relationship because it increases connectivity to the unsatisfying individual. Communication satisfaction may have been a more salient construct in these findings than in previous work because extended family relationships, for the most part, are involuntary in nature (Baxter & Braithwaite, 2006). As a result, an individual may be strongly tied to a family member whom they find very unsatisfying.

Despite the value of Haythornthwaite's (2005) use of tie strength to explain multimodality, this research highlights the need for a more sophisticated conceptualization of interpersonal relationships within the theory. Tie strength primarily relates to resources in a social network. Given the original setting of organization/education for the development of MMT, resource allocation may be more salient to media use in such contexts than in family relations. Initial use of MMT in interpersonal scholarship used variables akin to tie strength, such as closeness and interdependence (Baym & Ledbetter, 2009; Ledbetter, 2008; Ledbetter 2009b). Interpersonal communication research needs to begin to tease out the variables embedded inside of tie strength because conflating all human relations to tie strength is not representative of the complexity of interpersonal relating. Apart from such clarification, our understanding of how dyads negotiate patterns of media use may lack accuracy. This is demonstrated in these results

with communication satisfaction, but many other variables exist in relationships to explore outside of tie strength.

Overall, then, these results pertaining to media use violations advance MMT literature in several ways. First, by separating out the constructs of media use patterns and media use expectations, this project offers an important clarification for understanding how enacted media use may differ meaningfully and consequentially from relevant cognitions toward use. As these results demonstrated, the medium selected for communication may not always be the optimal medium for the relationship. Media selection can violate relational norms, and media use violations can be interpreted in multiple ways, either benefiting or harming the violator; in other words, meeting or violating media use expectations matters. These findings affirm that matching the medium to the relationship may be an effective way of going about media selection (Ledbetter & Mazer, 2013). Second, these findings provide an additional lens to see the dispersion of modes of communication through a social network: communication satisfaction. Third, it showcases that the meaning of a violation derives most strongly from the direction of the change in media use. As such, the medium of communication itself appears to have meaning outside of message content (Haythornthwaite, 2005).

Limitations and Future Directions

The results extend current research efforts (e.g. Hall & Baym, 2012; Ledbetter & Mazer, 2013) to understand multimodality and develop MMT. As with all research, this study has strengths and limitations. It was unanticipated that so few respondents would report no use of email, video call (e.g. Skype), instant messaging, and postal mail with their extended family ties, and these media were not included in the cluster analysis identifying media use patterns. In addition, this study did not distinguish between different SNS (e.g., Facebook, Twitter, and

Instagram). Different types of SNS have unique properties (Papacharissi, 2009), and this study lays the theoretical groundwork to develop such a research project. Reports of media use with extended family were cross-sectional, and thus cannot be used to determine causality; in contrast, however, the experimental design for assessing the outcome of media use violations provides enhanced strength for causal claims. Nevertheless, reliance on hypothetical situations may raise questions about the external validity of the findings (Cohen, 2010). Although there was diversity among the type of relationship shared between the respondent and extended family member, the sample consisted primarily of young Caucasian undergraduate students. The generalizability of these findings to other populations is contingent upon future research.

The future of media multiplexity theory is bright because it offers a parsimonious and useful understanding of multimodality. Research should continue to focus on relationships where no organizationally established medium exists to determine where media use patterns and expectations arise from in interpersonal relationships (Ledbetter & Mazer, 2013). Media use patterns among friends offers a next potential step into the development of MMT. Furthermore, scholarship needs to continue to look outside of tie strength to determine how relational partners use media.

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Appendix

PLEASE NOTE: Returning this survey affirms that you have read, understand, and agree to the terms of the consent form.

Demographic Information

Directions: In the following spaces, please report the most appropriate response to each question. If there is a separate set of directions, please read those directions carefully and answer each question to the directions for that section of the questionnaire.

1. What is your age? _____
2. What is your biological sex?
 - 1 Male
 - 2 Female
3. What is your current classification in school?

1 Freshman	4 Senior
2 Sophomore	5 Graduate student
3 Junior	6 Other: _____
4. What is your ethnicity or race?

1 White	4 Native American
2 African American	5 Asian American
3 Hispanic American	6 Other (please specify): _____
5. Which of the follow best characterizes the relationship between your biological or adoptive parents?
 - 1 My biological or adoptive parents are married.
 - 2 My biological or adoptive parents are divorced.
 - 3 My biological or adoptive parents were never married.
 - 4 At least one or my biological or adoptive parents is deceased.
6. While growing up, who was your primary caregiver?
 - 1 Both biological or adoptive parents
 - 2 Biological or adoptive mother
 - 3 Biological or adoptive father
 - 4 Biological or adoptive mother, and stepfather
 - 5 Biological or adoptive father, and stepmother
 - 6 Grandparent or other extended family member
 - 7 Other (please specify): _____

Revised Family Communication Patterns (Koerner & Fitzpatrick, 2002)

Directions: For each item, please circle the number that best represents your level of agreement using the following scale. Please answer the questions with your FAMILY-OF-ORIGIN in mind (in other words, the immediate family in which you grew up).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

	SD			N			SA
1. In our family we often talk about topics like politics and religion where some persons disagree with others.	1	2	3	4	5	6	7
2. When anything really important is involved, my parents expect me to obey without question.	1	2	3	4	5	6	7
3. My parents often say something like “Every member of the family should have some say in family decisions.”	1	2	3	4	5	6	7
4. In our home, my parents usually have the last word.	1	2	3	4	5	6	7
5. My parents often ask my opinion when the family is talking about something.	1	2	3	4	5	6	7
6. My parents feel that it is important to be the boss.	1	2	3	4	5	6	7
7. My parents encourage me to challenge their ideas and beliefs.	1	2	3	4	5	6	7
8. My parents sometimes become irritated with my views if they are different from theirs.	1	2	3	4	5	6	7
9. My parents often say something like “You should always look at both sides of an issue.”	1	2	3	4	5	6	7
10. If my parents don’t approve of it, they don’t want to know about it.	1	2	3	4	5	6	7
11. I usually tell my parents what I am thinking about things.	1	2	3	4	5	6	7
12. I can tell my parents almost anything.	1	2	3	4	5	6	7
13. When I am at home, I am expected to obey my parents’ rules.	1	2	3	4	5	6	7
14. In our family we often talk about our feelings and emotions.	1	2	3	4	5	6	7
15. My parents often say things like “You’ll know better when you grow up.”	1	2	3	4	5	6	7
16. My parents and I often have long, relaxed conversations about nothing in particular.	1	2	3	4	5	6	7
17. I really enjoy talking with my parents, even when we disagree.	1	2	3	4	5	6	7
18. My parents often say things like “My ideas are right and you should not question them.”	1	2	3	4	5	6	7
19. My parents encourage me to express my feelings.	1	2	3	4	5	6	7
20. My parents often say things like “A child should not argue with adults.”	1	2	3	4	5	6	7
21. My parents tend to be very open about their emotions.	1	2	3	4	5	6	7
22. We often talk as a family about things we have done during the day.	1	2	3	4	5	6	7
23. My parents often say things like “There are some things that just shouldn’t be talked about.”	1	2	3	4	5	6	7
24. In our family, we often talk about our plans and hopes for the future.	1	2	3	4	5	6	7
25. My parents often say things like “You should give in on arguments rather than risk making people mad.”	1	2	3	4	5	6	7
26. My parents like to hear my opinion, even when I don’t agree	1	2	3	4	5	6	7

with them.

Communication Competence Scale (Guerrero, 1994)

Directions: We would also like to know your perception of your ability to listen and communicate your ideas. The scale ranges from 1 (strongly disagree) to 5 (strongly agree).

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1	2	3	4	5

1. I am a good communicator.	1	2	3	4	5
2. I am a good listener.	1	2	3	4	5
3. I do <u>not</u> solve problems effectively.	1	2	3	4	5
4. My communication is usually appropriate to the situation at hand.	1	2	3	4	5
5. I have a wide variety of social skills.	1	2	3	4	5
6. It is hard for me to communicate my feelings clearly.	1	2	3	4	5

Directions: Now, we would like you to think about YOUR EXTENDED FAMILY. Specifically, we'd like to know how you use communication technology with EXTENDED FAMILY MEMBERS. Please tell us how you use communication technology with YOUR EXTENDED FAMILY MEMBERS using the following scale:

Never (I don't use this technology with my extended family)	Used only with a few close extended family members				Used with many extended family members
0	1	2	3	4	5

1. Face to face	0	1	2	3	4	5
2. Voice telephone	0	1	2	3	4	5
3. Phone text messaging	0	1	2	3	4	5
4. E-mail	0	1	2	3	4	5
5. Instant messaging	0	1	2	3	4	5
6. Publicly via social networking websites (such as a Facebook wall post)	0	1	2	3	4	5
7. Video chat (e.g., Skype)	0	1	2	3	4	5
8. Other forms of online communication (such as discussion boards, online games, etc.)	0	1	2	3	4	5
9. Postal mail	0	1	2	3	4	5

[NOTE: At this point, the survey program will randomly direct the participant into one of four conditions:

- a) Relationally close, adding a medium
- b) Relationally close, subtracting a medium
- c) Relationally distant, adding a medium
- d) Relationally distant, subtracting a medium

For brevity, we provide examples of two conditions below.

Directions [CLOSE, SUBTRACTING CONDITION]: In the boxes below, please list three extended family members with whom you believe you have a strong, close relationship. The boxes will allow you to list their initials only (i.e., please do not list their full names).

Directions [DISTANT, ADDING CONDITION]: In the boxes below, please list three extended family members with whom you communicate at least occasionally, but aren't particularly close. The boxes will allow you to list their initials only (i.e., please do not list their full names).

[The next page of the survey will randomly select one of the names that the participant entered.]

We'd like to know more about how you communicate with the relative [INITIALS]. Except when directed otherwise, you will complete the rest of the survey with this extended family member in mind.

1. What is the sex of this extended family member?
 - 1 Male
 - 2 Female

2. About how old is this extended family member (in years)?

1 Less than 18 years old	5 45-54 years old
2 18-25 years old	6 55-64 years old
3 25-34 years old	7 65-75 years old
4 35-44 years old	8 More than 75 years old

3. Who is this person in relationship to you? This person is my...
 - 1 Cousin
 - 2 Aunt
 - 3 Uncle
 - 4 Niece
 - 5 Nephew
 - 6 Grandmother
 - 7 Grandfather
 - 8 Other (please specify): _____

4. How far away does this family member live from TCU's campus?
 - 1 Lives in the Dallas/Fort Worth metroplex.

- 2 Lives within a 1-3 hour drive.
 - 3 Lives within a 4-8 hour drive.
 - 4 Lives within a 9-12 hour drive.
 - 5 Lives farther away than a day’s drive, but in the United States.
 - 6 Lives outside the United States.
5. In general, would you consider this relationship with the extended family member to be a local or long-distance relationship?
- 1 Local when at college, long-distance when at home
 - 2 Long-distance when at college, local when at home
 - 3 Local both when at college and at home
 - 4 Long-distance both when at college and at home
 - 5 Other (please specify): _____

Directions: Please indicate how often you use each of the following communication media to communicate with this extended family member.

Never	Very Rarely		Sometimes		Very Frequently
0	1	2	3	4	5

1. Face to face	0	1	2	3	4	5
2. Voice telephone	0	1	2	3	4	5
3. Phone text messaging	0	1	2	3	4	5
4. E-mail	0	1	2	3	4	5
5. Instant messaging	0	1	2	3	4	5
6. Publicly via social networking websites (such as a Facebook wall post)	0	1	2	3	4	5
7. Video chat (e.g., Skype)	0	1	2	3	4	5
8. Other forms of online communication (such as discussion boards, online games, etc.)	0	1	2	3	4	5
9. Postal mail	0	1	2	3	4	5

Other than face-to-face, with which medium are you most likely to communicate with this extended family member? [Dropdown box with choices including the following media: Voice telephone, phone text messaging, e-mail, instant messaging, publicly via social networking websites, video chat]

Other than face-to-face, with which medium are you least likely to communicate with this extended family member? [Dropdown box with choices including the following media: Voice telephone, phone text messaging, e-mail, instant messaging, publicly via social networking websites, video chat]

[At this point, the survey program will have the participant focus on one of the media chosen above: for the subtracting condition, the medium used most often, and for the adding condition, the medium used least often. Below, the name of the media is listed as XXXXXX, but the survey program will replace the name with the proper text.]

Directions [CLOSE, SUBTRACTING CONDITION]: Let's say that your family member suddenly decreases communication with you through XXXXX (i.e., the medium you indicated they were most likely to communicate with you). After a week, how would you feel? Please respond using the measure below.

Directions [DISTANT, ADDING CONDITION]: Let's say that your family member suddenly increases frequency of communication with you through XXXXX (i.e., the medium you indicated they were least likely to communicate with you). After a week, how would you feel? Please respond using the measure below.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. This change in the relative's use of XXXXXX would be completely unexpected.	1	2	3	4	5	6	7
2. This change in the relative's use of XXXXXX would surprise me a great deal.	1	2	3	4	5	6	7
3. This change in the relative's use of XXXXXX would be a very important relationship event.	1	2	3	4	5	6	7
4. This change in the relative's use of XXXXXX would be a minor relational event.	1	2	3	4	5	6	7
5. This change in the relative's use of XXXXXX would make me feel a lot better about the state of our relationship.	1	2	3	4	5	6	7
6. This change in the relative's use of XXXXXX would make me feel like s/he does not care about me at all.	1	2	3	4	5	6	7
7. This change in the relative's use of XXXXXX would be a very positive behavior.	1	2	3	4	5	6	7
8. This change in the relative's use of XXXXXX would be a behavior I would not like at all.	1	2	3	4	5	6	7
9. I'd like to see much more of such behavior from this relative.	1	2	3	4	5	6	7
10. This change in the relative's use of XXXXXX would make me feel a lot less confident about the state of our relationship.	1	2	3	4	5	6	7
11. This change in the relative's use of XXXXXX would make me feel a lot more confidence in my predictions of his/her future behavior.	1	2	3	4	5	6	7
12. This change in the relative's use of XXXXXX would strongly increase my ability to accurately predict his/her future behavior.	1	2	3	4	5	6	7
13. Following this behavior, I would feel that I know him/her a lot better than I thought.	1	2	3	4	5	6	7
14. Following this behavior, I would become much less able to predict his/her attitudes.	1	2	3	4	5	6	7

15. This change in the relative's use of XXXXXX would probably be due to the situation at hand.	1	2	3	4	5	6	7
16. This change in the relative's use of XXXXXX would be very typical of his/her personality.	1	2	3	4	5	6	7
17. This change in the relative's use of XXXXXX would not be typical of how he/she acts in our relationship.	1	2	3	4	5	6	7

Communication Satisfaction (Hecht, 1976)

Directions: Please indicate the degree to which you agree or disagree that each statement describes typical conversations with this extended family member.

Strongly Disagree			Undecided			Strongly Agree
1	2	3	4	5	6	7

1. I feel as if I can talk about anything with this extended family member.	1	2	3	4	5	6	7
2. I feel like we can laugh easily together.	1	2	3	4	5	6	7
3. Our conversations flow smoothly.	1	2	3	4	5	6	7
4. We tend to talk about things I am NOT interested in.	1	2	3	4	5	6	7
5. This extended family member lets me know that I am communicating effectively.	1	2	3	4	5	6	7
6. This extended family member expresses a lot of interest in what I have to say.	1	2	3	4	5	6	7
7. I like to have conversations with this extended family member.	1	2	3	4	5	6	7
8. I find it easy to talk with this extended family member.	1	2	3	4	5	6	7

Directions: Now, we'd like to know your thoughts about XXXXXX as a communication medium. For each item, please circle the number that best represents your level of agreement using the following scale:

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. Misunderstanding through XXXXXX can easily lead to conflict.	1	2	3	4	5	6	7
2. If I lost access to XXXXXX, I think I would probably lose contact with many of my friends.	1	2	3	4	5	6	7
3. I feel tense and nervous when communicating through XXXXXX.	1	2	3	4	5	6	7
4. I would communicate less with my friends if I couldn't communicate with them through XXXXXX.	1	2	3	4	5	6	7
5. When receiving XXXXXX messages, it is easy to take meanings that the sender did not intend.	1	2	3	4	5	6	7
6. I feel like I can be more open when I am communicating	1	2	3	4	5	6	7

through XXXXXX I than when communicating by other means.							
7. When communicating through XXXXXX, I am comfortable disclosing personal information to a member of the opposite sex.	1	2	3	4	5	6	7
8. I cannot think clearly when I communicate through XXXXXX.	1	2	3	4	5	6	7
9. I feel like I can sometimes be more personal during XXXXXX conversations than when communicating by other means.	1	2	3	4	5	6	7
10. Sometimes people interpret XXXXXX communication more negatively than the message sender intended.	1	2	3	4	5	6	7
11. Without XXXXXX, my social life would be drastically different.	1	2	3	4	5	6	7
12. Losing XXXXXX would not change my social life at all.	1	2	3	4	5	6	7
13. Miscommunication occurs frequently through XXXXXX.	1	2	3	4	5	6	7
14. I am uncomfortable with the amount of nonverbal cues available through XXXXXX.	1	2	3	4	5	6	7
15. My words become confused and jumbled when I try to communicate through XXXXXX.	1	2	3	4	5	6	7
16. XXXXXX is fun.							
17. It is easy to disclose personal information through XXXXXX.	1	2	3	4	5	6	7
18. I am afraid to voice my opinions when interacting with others through XXXXXX.	1	2	3	4	5	6	7
19. XXXXXX is convenient.	1	2	3	4	5	6	7
20. When communicating through XXXXXX, lack of feedback from the other person can lead to misunderstandings.	1	2	3	4	5	6	7
21. I don't feel shy when I am communicating through XXXXXX.	1	2	3	4	5	6	7
22. I feel awkward when communicating through XXXXXX.	1	2	3	4	5	6	7
23. If I couldn't communicate through XXXXXX, I would feel "out of the loop" with my friends.	1	2	3	4	5	6	7
24. XXXXXX is not an important part of my social life.	1	2	3	4	5	6	7
25. XXXXXX is a stress-free way to get in touch with someone.	1	2	3	4	5	6	7
26. I feel nervous when sharing personal information through XXXXXX.	1	2	3	4	5	6	7
27. I feel apprehensive about communicating through XXXXXX.	1	2	3	4	5	6	7
28. When life gets busy, XXXXXX is a great way to communicate efficiently.	1	2	3	4	5	6	7
29. I don't feel embarrassed when sharing personal information with another person through XXXXXX.	1	2	3	4	5	6	7
30. I like that it is easy to get ahold of people through	1	2	3	4	5	6	7

XXXXXX.							
31. I enjoy communicating through XXXXXX.	1	2	3	4	5	6	7

Social influence scale [informed by Fulk, 1993]:

Directions: Please indicate your response to the following questions using the scale below.

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. My friends enjoy communicating through XXXXXX.	1	2	3	4	5	6	7
2. My friends think XXXXXX is inconvenient.	1	2	3	4	5	6	7
3. XXXXXX is popular among my friends.	1	2	3	4	5	6	7
4. My friends have a negative attitude toward XXXXXX.	1	2	3	4	5	6	7
5. My friends think using XXXXXX creates a positive social impression.	1	2	3	4	5	6	7
6. My friends think it is important to keep in touch using XXXXXX.	1	2	3	4	5	6	7
7. My family members enjoy communicating through XXXXXX.	1	2	3	4	5	6	7
8. My family members think XXXXXX is inconvenient.	1	2	3	4	5	6	7
9. XXXXXX is popular among my family members.	1	2	3	4	5	6	7
10. My family members have a negative attitude toward XXXXXX.	1	2	3	4	5	6	7
11. My family members think using XXXXXX sends a positive social message.	1	2	3	4	5	6	7
12. My family members think it is important to keep in touch using XXXXXX.	1	2	3	4	5	6	7

Shared Family Identity (Soliz & Harwood, 2006)

Directions: Please indicate the degree to which you agree with each of the following statements regarding your relationship with this extended family member using the scale below.

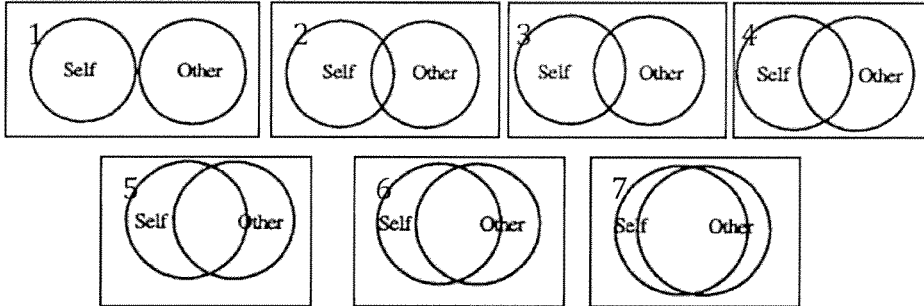
Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. I am proud to be in the same family as this person.	1	2	3	4	5	6	7
2. *My shared family membership with this person is not that important to me.	1	2	3	4	5	6	7
3. Above all else, I think of this person as a member of my family.	1	2	3	4	5	6	7

4. This person is an important part of my family.	1	2	3	4	5	6	7
5. I feel as if we are members of one family.	1	2	3	4	5	6	7
6. *I feel as if we are members of separate groups.	1	2	3	4	5	6	7

IOS Closeness Scale (Aron, Aron, & Smollan, 1992):

Directions: Please circle the picture below which best describes your relationship. In the diagrams below, you are “self” and the extended family member is “other.”



Closeness Measure (Vangelisti & Caughlin, 1997):

Directions: Please indicate the degree to which you agree with each of the following statements regarding this extended family member using the scale below.

Not at all							Very much
1	2	3	4	5	6	7	

1. How close are you to this extended family member?	1	2	3	4	5	6	7
2. How often do you talk about personal things with this extended family member?	1	2	3	4	5	6	7
3. How satisfied are you with your relationship with this extended family member?	1	2	3	4	5	6	7
4. How important is your relationship with this extended family member?	1	2	3	4	5	6	7
5. How much do you like this extended family member?	1	2	3	4	5	6	7
6. How important is this extended family member’s opinion to you?	1	2	3	4	5	6	7
7. How much do you enjoy spending time with this extended family member?	1	2	3	4	5	6	7

Thank you for your participation in this study!