# Communication Media Use in the Grandparent-Grandchild Relationship

By Jake Harwood

*This study surveyed college-aged grandchildren as to the frequency of their communication with a grandparent using various media. Face-to-face (FtF) and telephone communication were used more frequently than written media, but all were used fairly frequently. Communication using all media was more frequent when the grandparent or grandchild initiated interaction as opposed to the parent. Relationships in which the grandparent initiated contact featured more use of written media (letters, e-mail, cards). Frequency of communication using all media was positively associated with relational quality. Telephone communication best predicted relational quality when use of other media was controlled. In this paper, I discuss implications for media richness theory, the communication predicament of aging model, and future research on grandparent-grandchild relationships.*

This paper examines the grandparent-grandchild (GP-GC) relationship in the context of a growing literature concerning communication between older and younger adults that has enlightened us as to the processes and problems of such communication. The work of Hummert and her colleagues has provided new insights on the nature of intergenerational stereotypes and their role in influencing communication in intergenerational settings featuring elderly people (Hummert, 1994; Hummert, Shaner, Garstka, & Henry, 1998; see also Harwood, McKee, & Lin, 2000). Ryan, Giles, and their colleagues have provided important information concerning the determinants and consequences of patronizing speech in such settings (Harwood & Giles, 1996; Ryan, Giles, Bartolucci, & Henwood, 1986). Giles and collaborators have provided information on cross-cultural dimensions to the intergenerational communication process (Williams et al., 1997). Finally, N. Coupland, J. Coupland, and their coworkers have provided insights into the discoursal management of intergenerational relations (Coupland, Coupland, &

Giles, 1991). These literatures are comprehensively reviewed by Nussbaum and Coupland (1995).

The communication predicament of aging model (Ryan et al., 1986) has provided a basis for much of the literature on intergenerational communication, particularly insofar as intergenerational communication has an impact on older adults. The model describes a pattern whereby younger adults' stereotypes of older people lead to the production of patronizing communication to the elderly. This may lessen older adults' sense of control in the interaction and reduce their options for satisfying social interaction. In turn, this leads to reduced psychological activity and social interaction and eventually may cause physical and psychological declines in older people. Such declines may reinforce younger people's stereotypes of the older population and, hence, increase the chances of future patronizing speech (Ryan, Hummert, & Boich, 1995).

Throughout this literature, very little attention has been paid to a primary site in which communication between elderly and younger people occurs: the grandparent-grandchild (GP-GC) relationship. Indeed, with the notable exception of the work of Nussbaum and colleagues (Nussbaum & Bettini, 1994; Williams & Nussbaum, 2000), close relationships remain somewhat uncharted territory in the literature on communication and life-span development (Mares & Fitzpatrick, 1995; Rawlins, 1992).

The GP-GC relationship is crucial for a number of reasons. First, it may be the location in which most communication between young and old occurs. Little data exist on this, but this paper will provide some suggestive information (see also Baranowski, 1982; Ng, Liu, Loong, & Weatherall, 1999; Williams & Giles, 1996). Much work has examined, and bemoaned, the increasing age segregation in Western societies (Okraku, 1987). This relationship offers a context in which such segregation breaks down.

Second, the GP-GC relationship may be a place in which future intergenerational competencies are learned. Individuals (old and young) who are able to negotiate a successful intergenerational relationship within the family may stand a better chance of doing the same elsewhere (Kornhaber & Woodward, 1985; Silverstein & Parrott, 1997). This is not to suggest that a happy GP-GC relationship provides immunity against pejorative stereotyping in other contexts, but it may help (see Allport, 1954; Hewstone & Brown, 1986). Recent research has provided interesting contrastive data concerning intergenerational contacts within and outside of the family (Cai, Giles, & Noels, 1998; Ng, Liu, Weatherall, & Loong, 1997). This research demonstrates that accommodative behaviors and positive emotions are more frequent in intergenerational communication within the family in quite diverse cultural settings. Hence, this seems to be a context in which positive influences on general attitudes are a possibility and perhaps a point at which the communication predicament can be disrupted.

Third, there is good evidence that the GP-GC relationship is crucial for older adults (Kivnick, 1985, 1988; Thomas, 1990). As peer relationships are lost due to death and the ability or motivation to seek new relationships may decline, the grandchild may serve as a focus for both family pride and social interaction (Harwood & Lin, 2000). The GP-GC relationship is also valuable for grandchil-

dren, who may enjoy their grandparents' stories or the feeling of connection with a larger family that grandparents can provide (Brussoni & Boon, 1998). Research has also demonstrated the importance of the relationship for other aspects of grandchildren's development (e.g., emotional development and self-esteem, Tomlin, 1998).

Fourth, with increasing longevity, the GP-GC relationship is lasting longer, with increasing numbers of relationships extending well into the grandchild's adult life (Hodgson, 1998; Uhlenberg, 1996). Hence, this is a setting in which both parties may experience an intergenerational relationship that extends over a long period of time. Recent research outside the grandparenting context suggests that extended contact of this kind may be particularly influential in influencing intergroup attitudes (Hamberger & Hewstone, 1997; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997), in addition to the role that length of relationship may have in intensifying interpersonal intimacy—at least among those who maintain contact.

In a rare study of communication between grandparents and grandchildren, Nussbaum and Bettini (1994) tape-recorded conversations in which grandparents were asked to tell a story that captured the "meaning of life" to their grandchildren. They found that the vast majority of grandparents disclosed their age in the context of telling the story. Grandfathers tended to talk about health issues and youth experiences. In contrast, grandmothers told longer stories about family issues, in particular, family history. Besides the interesting gender issues raised by this study, it provides dramatic illustrations of the nature of GP-GC communication. Perhaps most striking is the fact that grandchildren were also instructed to tell stories, but rarely did. Instead, they listed values or qualities important in life. This points to the possibility that communication in the GP-GC relationship is somewhat asymmetrical, with each side filling prescribed roles with specific repertoires of behavior.

Beyond this study, systematic investigation of communication within the GP-GC relationship has been rare. Holladay et al. (1998) asked granddaughters to talk about turning points in their relationship with their maternal grandmother. Among other turning points, they found that negative communication behaviors by the grandmother (e.g., lying, interfering) were perceived in retrospect as having a negative impact on the GP-GC relationship. Downs (1989) showed that levels of mutual self-disclosure and grandparent storytelling in the GP-GC relationship are positively related to solidarity. Webb (1985) provided descriptive information on topics that predominate in GP-GC conversation. Finally, Harwood (2000) examined communicative predictors of solidarity in the GP-GC relationship, finding that grandparent and grandchild both viewed the other's level of accommodation as central to feelings of relational solidarity. In addition, overaccommodation (e.g., being "talked down to") by grandparents was a powerful (negative) predictor for grandchildren. Beyond these isolated studies, "the pivotal role communication plays in determining the nature of the grandparent-grandchild relationship has received very little scholarly attention" (Williams & Nussbaum, 2000).

To say that communication is important in relationships has become something of a truism; however, it bears repeating. If we wish to understand the GP-GC relationship, we must understand where and how communication occurs between

grandparents and their grandchildren. This paper investigates communication media use in GP-GC contact among college students. Obviously, college students are a convenience sample, however, they are of particular interest in this context. They are a group who are in the process of establishing independence from the parental home, which means that for the first time they may be in the position of being in control of how much they see their grandparents. Prior to this point, visits may have been determined by parents, and phone conversations may have occurred when the parent and grandparent were talking. Understanding the ways in which the GP-GC relationship is maintained as the grandchildren seek independence from the parental home is crucial in terms of understanding the ways in which this relationship may be carried into adulthood, or possibly lost (Kennedy, 1992).

## Interpersonal Relationships and Media Richness Theory

Studies of communication media use in personal relationships are rare, particularly research simultaneously examining the use of multiple media. Given that most US grandparents do not live with grandchildren, mediated communication is particularly crucial to the maintenance of this relationship. Notions of social presence and media richness are central to current understanding of communication media use, hence these perspectives are outlined next.

The notion of social presence was introduced by Short, Williams, and Christie (1976). They described social presence as the extent to which a communication medium provides access to the full range of social cues and hence the degree to which "a medium enables a communicator to experience communication partners as being psychologically present" (Straub & Karahanna, 1998, p. 161). A related perspective is that of media richness. Daft and Lengel (1984, 1986) suggest that media differ in the richness of information that they provide—defined in terms of their capacity for immediate feedback, visual and audio cues, whether they are of a "personal" nature, and whether they incorporate natural language (including "body language") as opposed to, for instance, formal numeric information.

Both perspectives suggest that the level of information conveyed by different media can be defined along a hierarchy. Research is unequivocal in concluding that face-to-face (FtF) communication is the richest (has the most social presence), with telephone somewhat lower, written documents even lower, and numeric data at the lowest end (e.g., Daft & Lengel, 1984; Rice, D'Ambra, & More, 1998; Short et al., 1976). The place of intermediate points such as videoconferencing or computerized discussion groups can be easily imagined. We will focus on media richness for the remainder of the paper, since this is the area in which theory has been most clearly developed.

Media richness theory (MRT) describes the ways in which a choice to use a particular medium is dependent upon the communication task being attempted. Daft and Lengel (1984) suggest that uncertainty and equivocality are two fundamental variables driving media choices. Uncertainty is a relatively basic need for specific pieces of information. Equivocality is a more abstract need for understanding that requires sense-making activities, probably through "rich, iterative,

negotiated discourse with other actors" (Rice et al., 1998, p. 4; Daft & Weick, 1984). Daft and Lengel (1984) describe a "domain of effective information processing" in which the equivocality of the situation matches the richness of the medium used to communicate about the situation. In the organizational context, they argue that the use of a medium that is too rich (e.g., FtF) for a low complexity task (e.g., simple data analysis) may result in "overcomplication"—the task is made more complex than it needs to be. Similarly, the use of an insufficiently rich medium (e.g., regular mail) for a task that is more equivocal (e.g., negotiating a detailed legal contract) may result in oversimplification. Subsequent research has provided support for this general notion, in that people express a desire to use richer media in more equivocal situations (e.g., Rice et al., 1998). Work surrounding the social presence construct also finds that users "fit" the social presence of the medium to that required by the task (Fulk, Steinfeld, Schmitz, & Power, 1987; Straub & Karahanna, 1998). Research also suggests that the ability to choose appropriate media for appropriate tasks can result in individual or organizational success (e.g., Daft, Lengel, & Trevino, 1987; Lind & Zmud, 1991).

Despite the focus of most of the media richness literature on organizational processes, the consequences for interpersonal relationships are apparent. It is possible to hypothesize a "domain of effective relational processing," in which the medium chosen for a particular interaction matches the complexity of the relational task being accomplished. For example, an e-mail might be fine for confirming an appointment, but it is probably not appropriate (or efficient) for discussing long-term relational problems. Individuals should select a medium for a relational interaction based on the equivocality of their goals within that interaction. To this extent, we predict that MRT will apply well in the context of interpersonal relationships.

However, a few provisos are worth noting. Within intimate relationships, it is likely that there will be a greater incidence of high equivocality goals that need to be addressed. Hence, intimate relationships should be associated with more use of high-richness media. That said, some intensely emotional communication within highly intimate relationships is transmitted via low-richness media (perhaps to minimize face threat or avoid what may be an overwhelming interaction. "Dear John" letters and steamy Valentine's day cards are examples.). Dialectical issues of balancing approach-avoidance or connectedness-separateness may play a role in the choice of a low-richness medium for such correspondence (Baxter & Montgomery, 1997; Shulman & Knafo, 1997). Highly intimate relationships will also include the exchange of rather mundane information, which might comfortably be exchanged over less rich media. Finally, issues relating to relational development will influence relational communication media choices. Research has shown that users learn to compensate for the low richness of computer-mediated communication, becoming able over time to achieve high levels of intimacy (Parks & Floyd, 1996; Schmitz & Fulk, 1991; Walther & Burgoon, 1992). Hence, within long-term relationships, there is a need to be sensitive to the ways in which individual dyads may have learned to use low-richness media to express highly intimate messages. These reservations point to the need for data concerning the use of technology in close relationships. MRT has the power to deal with certain rela-

tional issues, but in other areas modifications may be essential. Strategic face management concerns, dialectic tensions between connectedness and separateness, and relational history will all play into media choices in close relationships.

*Media Use in Intergenerational Interaction*

The current study investigated the role of various communication media in the GP-GC relationship. Although face-to-face (FtF) communication may be the prototypical pattern (and certainly the most researched in the area of intergenerational communication), it seems likely that the telephone also plays an important role in this relationship. Dimmick, Sikand, and Patterson (1994) and Hopper (1992) have noted that the telephone has been largely ignored in the study of interpersonal communication. In introducing this topic, it is worth noting that telephone conversations are almost exclusively dyadic (Drummond & Hopper, 1991), have highly scripted openings and closings with definite beginnings and endings (Hopper, 1989; Schegloff, 1968), and include verbal and paralinguistic cues, but no nonvocal cues (Drummond & Hopper, 1991). Many of these features cause telephone communication to be lower in richness than FtF interaction, but higher than other media (e.g., written communication). It has also been suggested that telephone conversations are somewhat more likely to be task-oriented than FtF conversations (Rutter, 1987), although certainly the telephone can be used for "purely" social interaction.

Ryan, Anas, Hummert, and Laver-Ingram (1998) have recently presented data on younger and older adults' attitudes towards telephone talk. Ryan et al. (1998) describe particular problems that may emerge for older adults in telephone interactions. First, older adults are not able to use visual cues to compensate for any hearing decline that they may be experiencing (Kline & Scialfa, 1996). In addition, recipients of telephone calls rarely have any warning and thus are unable to plan for them. This may be a challenging phenomenon for older adults who are experiencing reduced information-processing or working memory capabilities (Craik & Jennings, 1992; Ryan et al., 1998). In addition to such "physical" barriers, Ryan et al. also note potential negative consequences from younger adults' *expectations* of older adults' telephone competence. If younger adults believe that older adults have problems in telephone conversations (e.g., due to hearing deficits), it is likely that the young people will use speech patterns that may be perceived as patronizing. Negative consequences of such speech have already been described (e.g., Ryan et al., 1986, 1995).

In contrast to these potential pitfalls, Ryan et al. (1998) suggest that there may be some advantages for older adults in the nature of the telephone signal and the structure of telephone interaction (see also Holladay et al., 1997). For instance, older adult hearing loss tends to be experienced in high frequency ranges (Kline & Scialfa, 1996) that are not transmitted in telephone signals. In addition, much telephone conversation tends to be very scripted, allowing for easier inference of missed words or phrases (Hopper, 1989; Ryan et al., 1998). Ryan et al.'s (1998) participants (a group of active, well-educated seniors) provided evidence that older adults experience fewer problems with telephone talk than younger adults, and indeed fewer problems than were expected by younger adults. They also

found that younger and older adults used the telephone for different purposes—sociability and instrumentality for the younger respondents, reassurance for the older group. Additional research has found correlations between elders' use of the telephone and various measures of well-being (Bowling & Windsor, 1995; Holladay et al., 1997), again suggesting that the telephone may be a positive influence in older adults' lives. Therefore, the current study provides comparative data on the occurrence of FtF and telephone communication in the GP-GC relationship, as well as examining their connections with other relevant relational variables.

In addition to FtF and telephone communication, the current study also examined use of written media (e-mail, letters, cards) for GP-GC communication. I anticipated that written media would be used more rarely and be of less importance in the relationship than the two described above. Comparative data on written communication as compared to telephone or FtF interaction are rare in the literature. Hartshorne and Manaster (1982) provided some suggestive data. In a study of college students, they found that "in person" communication with grandparents was more common than contact by letter or telephone. Interesting issues for written communication media are raised by the growth in computer technology and the largely text-based interaction that ensues from that (see Giles & Condor, 1988, for a discussion of aging and technology).

*Research Goals*

This study had two primary goals. First, the research aimed to provide descriptive information concerning use of communication media in the GP-GC relationship. Given the consequences of media use for the relationship, and that we know so little about media use in family communication, descriptive information seemed essential. A second goal of the research was to examine the links between media use and other variables, most notably the quality of the relationship, from the perspective of MRT.

A series of research questions was developed to address these two goals. The first research questions ask about the relative frequency of communication across media types (FtF, telephone, written) and the extent to which frequency of communication through one medium is associated with frequency through another. This latter issue addresses the question of whether grandparents and grandchildren who communicate frequently use all available media or if they have relationships that are largely grounded in one particular medium.

> RQ1: To what extent does GP-GC contact occur in face-to-face encounters, over the telephone, and through written media?

> RQ2: Are face-to-face, telephone, and written communication media use associated with one another in the GP-GC relationship?

Third, it is clear that certain media (e.g., the telephone) are less sensitive to geographical distance than others (e.g., FtF). Hence, we might expect that increased geographical distance between grandparent and grandchild would result in different patterns of communication media use.

RQ3: Is communication media use associated with geographical distance?

Fourth, the literature on GP-GC relationships is replete with examinations of the effects of grandparent and grandchild sex and relational lineage (i.e., maternal versus paternal) on the GP-GC relationship (Folwell & Grant, 1999; Smith, 1991; Spitze & Ward, 1998). Whereas such examinations have revealed somewhat in-consistent results, it nevertheless seemed important to examine such variables in the current study. If the study uncovered radically different uses of media for interaction among males versus females, for instance, this might start to illuminate reasons for gender-based differences in the GP-GC relationship.

RQ4: Is communication media use associated with grandparent or grandchild sex, or relationship lineage?

Fifth, we examined whether media use was dependent upon the initiator of GP-GC contact. Within most relationships, it is likely that the grandparent, the grandchild, or the parent is primarily responsible for initiating contact. Therefore, we examined whether relationships in which one of those individuals initiated communication were more likely to feature communication through particular media.

RQ5: Is the use of various media related to the source who initiates GP-GC communication?

Finally, we aimed to understand more about whether communication media use is associated with the quality of the GP-GC relationship. As noted earlier, MRT offers some tentative predictions for this, but applications of MRT to personal relationships are extremely limited. Hence, a research question is posed.

RQ6: Is there a relationship between communication media use and GP-GC relational quality?

## Method

*Subjects*

College students ($N$ = 137) were recruited from an introductory public speaking class at a large, Midwestern U.S. public university. The class fulfills a university-wide requirement, hence a wide variety of majors are enrolled. In exchange for research credit, students completed a lengthy questionnaire asking about their television use, physical and psychological health, and various other issues. One section of the questionnaire asked students with at least one living grandparent to report on their relationship with one of their grandparents; those with more than one grandparent were specifically instructed to report on only one. Respondents with no living grandparents were instructed to skip this section of the questionnaire. This resulted in a final sample of 117 respondents. The mean age of these respon-dents was 20.12 years ($SD$ = 2.42), and they were 57% female, 85% White. Nineteen percent of the respondents had divorced parents, and most had one or two living grandparents in addition to the one on whom they reported ($M$ = 1.70, $SD$ = 1.23).

**Table 1. Frequency of Grandparent-Grandchild Communication Using Various Media**

|  | Telephone | Face-to-face | Written |
|---|---|---|---|
| Almost never | 14 | 12 | 40 |
| Less than once a year | 2 | 1 | 2 |
| Once a year | 2 | 14 | 12 |
| A few times a year | 45 | 44 | 33 |
| A few times a month | 46 | 38 | 25 |
| A few times a week | 8 | 8 | 5 |
| Almost daily | 1 | 0 | 1 |

*Measures*

First, subjects were asked to report the sex and lineage of the grandparent (they reported on 44% maternal grandmothers, 23% maternal grandfathers, 22% paternal grandmothers, and 11% paternal grandfathers). Then a series of yes-no questions asked about various levels of exchange with the grandparent. Four of these are particularly important to the current analysis: They asked whether the grandparent (or grandchild) had helped the other, or had asked the other for help in the previous 12 months. These questions were derived from Cherlin and Furstenberg's (1985) measure of GP-GC relationship types. In the current analysis, the four questions achieved good reliability (alpha = .73) and were summed to create a measure of exchange, treated here as a measure of GP-GC relational quality.

Following this, two questions asked about the geographical distance between the grandparent's home and the grandchild. The first asked about geographical distance during the school semester, and the other about during vacation time. Six options reflecting various distances (mostly in miles) were offered (end points: *same town–over 500 miles*).

Next, respondents were asked to estimate how often they had talked to this grandparent in the last year "on the telephone." Seven options were offered ranging from *almost daily* to *almost never*. The same options were offered for two subsequent questions asking how often they had talked "in person" and how often they had communicated "in some other way (e.g., letter, e-mail, etc.)"—that is, using written media.

Three questions then asked about the level of closeness in the relationship. On 5-point scales, the grandchildren were asked how well they "get along with" the grandparent (*very poorly–very well*), how emotionally close they felt to the grandparent (*very distant–very close*), and how good their communication with the grandparent was (*very poor–very good*). These questions achieved good reliability (alpha = .83) and were averaged to yield a closeness measure (a second measure of relational quality). Respondents with missing data on any of these questions were omitted from analysis involving this variable. The next two questions also assessed relational quality by asking about the frequency of agreements and frequency of disagreements with the grandparent in conversation on a 4-point scale

**Table 2. Correlations Between Geographic Distance and Frequency of GP-GC Communication Media Use**

|  | Telephone | Face-to-face | Written |
|---|---|---|---|
| Distance during semester | -.01 (*p* = .94) | -.38 (*p* < .001)** | .10 (*p* = .31) |
| Distance during vacations | -.26 (*p* = .005)* | -.52 (*p* < .001)** | -.04 (*p* =.68) |

Note. Exact *p*-values are provided for those interested. Conventional significance levels are flagged with asterisks for reader convenience. *N* ranges were 116–118 for all analyses.

\* *p* < .01,  \*\* *p* < .001

(*almost always, often, rarely, almost never*). These were the final two measures of relational quality. Finally, the grandchildren were asked who typically initiated contact with their grandparent (options: "your grandparent," "you," "your parent(s)," "someone else"), and how many other grandparents they had still living.

## Results

To answer RQ1, responses to the three media use questions were examined. Frequency distributions of all three media displayed a bimodal distribution (see Table 1). In each distribution a substantial minority of the grandchildren reported having virtually no contact with their grandparent. This minority is smaller for FtF and telephone communication and substantially larger for written media. For all media, the majority of the respondents reported communication either a few times a year or a few times a month. Very few respondents reported communication in either the "less than once a year" category, or more frequently than a few times a month. Only one respondent reported almost daily contact over the phone, and one other reported almost daily contact over a written medium. A within-subjects ANOVA examining the relative frequency of communication media use was significant, $F(2, 232) = 23.33$, $p < .001$, partial eta$^2$ = .17. Post hoc contrasts indicated that FtF ($M = 4.02$, $SD = 1.30$) and telephone ($M = 4.14.$, $SD = 1.37$) communication was more frequent than written comunication ($M = 3.17$, $SD = 1.74$; $p < .001$ for both comparisons). Frequency of phone and FtF communication did not differ ($p = .29$).

A correlation matrix of the three frequency measures was constructed to examine RQ2. All three measures were significantly, positively correlated. The strongest relationship was between telephone and FtF contact, $r(117) = .60$, $p < .001$. Contact via written media was significantly correlated with telephone contact, $r(118) = .32$, $p <.001$, and FtF contact, $r(117) = .27$, $p = .003$.

RQ3 asked whether frequency of contact was correlated with geographic distance between the grandparent and grandchild. Table 2 shows that geographic distance during the school semester was significantly related only to FtF contact. Distance during vacations (i.e., between the grandchild's home address and the grandparent) was significantly related to telephone and FtF contact. All significant

**Table 3. GP-GC Communication Media Use Media According to Initiation of Contact by Different Parties**

| Contact initiated by | Telephone | Face-to-face | Written |
|---|---|---|---|
| Parent ($N = 44$) | 3.77a | 3.73a | 2.66b |
| Grandparent ($N = 24$) | 4.25a | 4.04a | 4.08a |
| Grandchild ($N = 41$) | 4.63a | 4.44a | 3.07b |

Note. Means with different subscripts across rows are significantly different ($p < .05$).

relationships were negative, meaning that increased distance was associated with reduced communication frequency. No other relationships approached significance.

To examine RQ4, 2 (grandparent gender) x 2 (grandchild gender) x 2 (grandparent lineage: paternal vs. maternal) factorial ANOVAs were conducted for each of the three media use measures. No significant main effects or interactions emerged in any of the analyses (all $F$s < 2.60, all $p$s >.10). Frequency of communication media use is unrelated to gender and lineage variables in this sample.

To examine RQ5, a mixed model ANOVA was computed with media type (FtF, telephone, written) as the within-subjects factor and primary initiator of GP-GC communication (grandchild, parent, grandparent) as the between-subjects factor. Both main effects were significant. The main effect for the within-subjects factor simply repeated the earlier finding that telephone and FtF communication are more frequent than communication using written media, $F(2, 212) = 20.60$, $p < .001$, partial eta$^2$ = .16. The main effect for the between-subjects factor indicated that relationships in which grandparents or grandchildren initiated contact were characterized by more frequent interaction (respectively, $M = 4.13$ and $4.05$, $SE = .22$ and .17) than relationships in which parents initiated contact ($M = 3.39$, $SE = .16$), $F(2, 106) = 5.39$, $p = .006$, partial eta$^2$ = .09. The interaction effect was also significant, $F(4, 212) = 4.02$, $p = .004$, partial eta$^2$ = .07. As can be seen from Table 3, the interaction effect is a product of the use of written media in relationships in which grandparents generally initiated contact. Written media use is equal to use of FtF and telephone for relationships in which the grandparent initiates contact, whereas it is substantially lower in relationships in which grandchildren or parents generally initiate the contact. Put differently, relationships characterized by grandparent-initiated contact feature significantly more use of written media than would be expected based on the pattern of relationships featuring grandchild- or parent-initiated contact.

Finally, in order to answer RQ6, the four indexes of relationship quality described earlier were used: measures of closeness, exchange, agreement, and disagreement. First, partial correlations were computed between the measures of media use and relational quality. The two measures of geographic distance described above were partialed out. As can be seen from Table 4, use of all three media was significantly, positively correlated with closeness and exchange in the

**Table 4. Partial Correlations Between Communication Media Use and Relational Quality, Controlling for Measures of Geographic Distance**

|  | Telephone | Face-to-face | Written |
|---|---|---|---|
| Relational closeness | .40 ($p < .001$)** | .41 ($p < .001$)** | .33 ($p < .001$)** |
| Exchange | .38 ($p < .001$)** | .35 ($p < .001$)** | .25 ($p = .008$)* |
| Agreement | .17 ($p = .08$) | .09 ($p = .36$) | .17 ($p = .08$) |
| Disagreement | .01 ($p = .91$) | -.03 ($p = .77$) | -.05 ($p = .63$) |

Note. Across analyses, *N* ranges from 109–113.

* $p < .01$, ** $p < .001$

relationship. In all cases, more frequent communication was associated with more positive evaluations of the relationship. This effect was strongest for the relationship between FtF communication and closeness and weakest for the relationship between written media contact and exchange. Frequency of communication was not associated with perceived levels of agreement or disagreement. These were single-item measures, and it is possible that they accessed ambiguous phenomena (i.e., disagreement might characterize a poor relationship with little common ground, or a good relationship in which entertaining debates about numerous topics occur).

To elaborate on these associations, two hierarchical multiple-regression analyses were run with relational closeness and exchange as the criterion variables (agreement-disagreement items were dropped; see prior paragraph). In both analyses, the two geographic proximity variables were entered, followed by *simultaneous* entry of the three media use measures. This gave us an understanding of the relationship between relational quality and use of each medium, controlling for use of other media and geographic distance. Neither measure of geographical distance was significantly related to either measure of closeness, either when first entered or in the final equation. The three measures of communication frequency accounted for significant variation in closeness beyond the geographic distance measures, *F* change (3, 110) = 11.06, $p < .001$, $R^2$ change = .23. As shown in Table 5, telephone and written media use were both significantly related to closeness (each accounted for approximately 4% of closeness variance). Frequency of FtF communication approached significance ($p = .051$) and accounted for 3% of variance. The set of frequency measures also significantly predicted exchange, *F* change (3, 109) = 7.92, $p < .001$, $R^2$ change = .17. Frequency of telephone communication was a significant individual predictor of exchange, accounting for 5% of variance in the criterion. Use of FtF and written media did not approach significance in this analysis.

## Discussion

The results are discussed below, followed by their implications for MRT and the communication predicament of aging model. Suggestions for future research are provided throughout the discussion.

**Table 5. Regression Analyses Predicting Relational Closeness and Exchange From Media Use**

| Criterion variable | Predictor variables (Frequency of media use) | Beta | *t*  (*p*) | *pr*$^2$ |
|---|---|---|---|---|
| Relational closeness | Face-to-face | .25 | 1.97 (*p* = .051) | .03 |
| | Telephone | .22 | 2.01 (*p* = .047)* | .04 |
| | Written | .18 | 2.07 (*p* = .041)* | .04 |
| Exchange | Face-to-face | .18 | 1.35 (*p* = .181) | .02 |
| | Telephone | .26 | 2.32 (*p* = .022)* | .05 |
| | Written | .11 | 1.24 (*p* = .219) | .01 |

Note. For both analyses, the two measures of geographical distance were entered prior to entry of the three frequency of communication variables. All three frequency variables were entered simultaneously. *pr*$^2$ indicates the squared partial correlation coefficient.

* *p* < .05

The first message from the frequency data (RQ1) is that communication in the GP-GC relationship is relatively frequent. Only ten subjects (8.5%) described communicating once a year or less across all media, and 74 (62.7%) reported contact a few times a month or more via at least one medium. These reports, it should be remembered, are for only one grandparent. Such frequencies speak to the importance of understanding communication processes in this relationship and considering the influence of such processes on intergenerational communication outside of the family. The frequency of communication using written media was higher than expected, although slightly lower than the other media. Older adults are one of the fastest growing groups of Internet users (Seniornet/Charles Schwab, 1998), and we should be aware that new forms of GP-GC relationship may be developing with the growth of this new medium. In addition, whether by e-mail or traditional mail, this is written communication. This raises exciting prospects for grandparents' and grandchildren's evaluations of each others' written abilities and styles. It seems likely that there are well-developed stereotypes of writing abilities associated with age. Future research might examine the extent to which these are borne out in GP-GC written communications, and how evaluations of the relationship are influenced by such evaluations. More generally, it is interesting that among our respondents, GP-GC interaction is occurring more frequently through less rich channels (telephone and written media combined), as I discuss further below.

The findings related to geographic distance (RQ3) are worthy of comment. At the outset, I anticipated that FtF contact might be particularly susceptible to influence by geographical distance, and this is borne out by the findings. Moderate to large negative correlations are present, indicating that FtF contact becomes significantly less frequent with increased geographical distance. However, a significant negative correlation is also present between geographical distance and frequency of telephone communication. The larger the distance between the grandchild's and the grandparent's home, the less frequent their communication by phone. It is likely that some complex reciprocal relationships underlie these findings. Geo-

graphical distance during the length of the relationship will influence media choices and overall frequency of contact. These will affect the closeness of the relationship, which in turn will influence media choices. Disentangling such relationships requires more detailed retrospective reports or longitudinal data. It should also be noted that there are no relationships between geographical distance and relational closeness in the current data, despite such relationships being found in previous literature on the GP-GC relationship (Fischer, 1983; Holladay et al., 1998). It is likely that these geographical influences decline with increased grandchild age— by late adolescence the level of GP-GC relational closeness is probably established and therefore more resistant to the influence of geographical distance (Somary & Stricker, 1998).

Examination of RQ5 revealed that communication across all media was more frequent if contact was initiated by grandparents or grandchildren as opposed to parents. This speaks to the crucial nature of the college years in maintaining the GP-GC relationship. If both parties are relying on the middle generation to maintain the relationship, then contact may be reduced and intimacy diminished. Perhaps most interesting, the relationships in which the grandparent initiated the majority of the contact were characterized by particularly high use of written media. It is possible that the effect is partly a function of greeting card exchanges (religious holidays, birthdays, and the like), but the high frequency cases probably involved exchanges of e-mails and letters. In this context, we should be aware of cohort effects. Certain generations may be more familiar and comfortable with certain communication media. The grandparents in the current study grew up sending and receiving personal letters and were taught letter writing as a valued skill. With the growth of the telephone, subsequent generations probably have less skill and experience in the exchange of personal letters. Interestingly, with the growth of computer-mediated communication, written communication may be increasing in importance as a central mode of interpersonal interaction (although it is possible that Internet-based telephone or videophone systems may soon supersede text-based interaction on the Internet).

Finally, we must examine associations between quality of relationship and media use (RQ6). As might be expected, all significant relationships were positive, indicating more frequent communication in closer relationships. Interestingly, the associations were of approximately similar magnitude across all media: In the correlation analysis, quality of relationship and frequency of communication are not connected more strongly in a particular medium. However, the regression analysis revealed telephone communication to have the strongest unique association with relational closeness and exchange. Frequency of FtF communication did not reach traditional levels of significance in predicting closeness or exchange when other media use was controlled. This finding, along with others described above, presents some challenges for the theoretical perspectives outlined in the introduction.

### Challenges for Media Richness Theory

A number of findings deserve discussion in the context of media richness theory (MRT). In particular, there are repeated suggestions in these data that low-richness media are particularly important in the GP-GC relationship. The overall frequency

data indicate that low-richness media are more frequently used for GP-GC communication than is FtF communication. Also, relationships in which the grandparent initiates most contact are characterized by particularly high levels of written media use. Finally, telephone use is related to GP-GC relational closeness even when statistical controls are implemented, but FtF communication is not. According to Daft and Lengel's (1984) domain of effective processing principles, low-richness media are appropriate for situations involving relatively simple exchanges of information, not the negotiation of complex issues. However, such principles are based on a task-based model, not a relational model (see Walther, 1995, 1997, for more general discussion of relational consequences of electronic communication). So, what is the role of these low-richness media in the GP-GC relationship?

It is possible that these media may be seen as appropriate for building shared understanding within a relationship that does not involve daily contact. The grandchild's transition to college may be a difficult period of readjusting norms in the GP-GC relationship. Individual communication between the parties may have been relatively rare, independent of the middle generation, and low-richness media may serve very well in negotiating the status of the relationship.

The point made in the previous paragraph can be stated more generally. MRT suggests that as the complexity of a communication task increases, high-richness media become more effective. However, within relationships, the communication itself is often the task at hand, and when that task becomes complex (e.g., at times of relational redefinition), low-richness media may offer precisely the type of communication environment that is desired by the participants. Such media offer more opportunity for reflection before communication, for rephrasing or deletion, and for expressing emotions with minimal face risk or threat. A similar suggestion has been made by Furnham (1982), who also provides some suggestive data (see also Williams, 1975). Within interpersonal relationships, then, we might hypothesize that media choices will be determined by task complexity (as defined within MRT), as well as levels of uncertainty concerning norms and roles within the relationship. Low-richness media will be preferred for the mundane tasks that are common in intimate relationships, but also for situations in which definitions of a relationship are highly uncertain and messages require careful construction (e.g., as GP and GC negotiate their relationship in the absence of the middle generation). High-richness media will be preferred for moderately complex tasks within relationships with well-established norms and rules. In such relationships, construction of messages in real-time will be a more comfortable process than in relationships undergoing redefinition or with uncertain roles. There are interesting links here to relational perspectives such as uncertainty reduction theory (Berger & Bradac, 1982; Gudykunst, 1995) that might be pursued in future research. Do couples early in a dating relationship or those communicating with individuals from other cultures prefer low-richness media, and do those media result in more satisfaction, less uncertainty, or less anxiety within the developing relationship?

Future research should also elaborate on the specific types of written media (i.e., distinguishing e-mail, personal letters, greeting cards, and the like), both in terms of the frequency and depth (length, intimacy) of these communications. Is e-mail, with the potential for quicker feedback, perceived as "richer" than written

letters or cards, which might be perceived as more personal? In addition, the use of cards as an effective "substitute" for real communication should be examined. To what extent are the small space and prewritten greetings on cards used as a tool to avoid having to generate meaningful messages, and are evaluative judgments of communication made on that basis? Of course, cards may also be used to send detailed messages, enclose other materials (e.g., photographs, press clippings, money), and the like. Such variation should be addressed. It will also be important to examine the *intimacy* of information being exchanged, and the ways in which intimacy is expressed differently across different media. The notion that media choice relates to relational intimacy is not negated by this point, but it does illustrate the need to examine the "what" of communication in tandem with the "how." We must examine the actual messages being sent (e.g., topics of communication, terms of address), and the relational partners' subjective interpretations of those messages [e.g., perceptions of (over/under)accommodation].

Finally, future research should examine grandparents' and grandchildren's motives for using different media in communication with each other (see Perse & Courtright, 1993; Westmyer, DiCioccio, & Rubin, 1998). Can we access a goal of balancing or reducing intimacy by using less rich media for such communication? Are perceptions of face threat or protection associated with decisions to use particular media? Is relational uncertainty related to communication media choices? As increasing numbers of older and younger adults are on-line, there are increasing choices available to both grandparents and grandchildren in communicating with one another. Telephone and e-mail, for instance, are both available to communicate in geographically distant relationships, and both are relatively low cost. However, they are distinctly different media in terms of richness (Rice et al., 1998). The choice of one over the other may be impacted by, or may itself influence, the nature of the relationship. Similarly, greeting cards may be used as a way to avoid in-depth communication, to attempt to maintain or resurrect communication in an emotionally distant relationship, or as a complement to numerous other types of communication in an intimate relationship.

### Challenges for the Communication Predicament of Aging Model

The current paper has made reference to the GP-GC relationship in the context of the intergenerational communication literature and, specifically, the communication predicament of aging model. That model is predicated on the assumption that the younger person in an intergenerational interaction views the older person in terms of their age (i.e., the interaction is meaningfully "intergroup"). The extent to which this is true in the GP-GC relationship is yet to be examined in the literature. We might predict that individuating cues would overcome group-based stereotypes in such a personal relationship. However, it is certainly possible to maintain a relationship with a high degree of interpersonal familiarity, while remaining highly cogniscent of the partner's social group memberships (Giles & Hewstone, 1982; Hamberger & Hewstone, 1997). Unpublished data from a group of college student respondents suggest that age may be a salient variable in GP-GC interactions, at least for some grandchildren. Using a 7-point scale measuring the salience of age in such interactions, approximately a third of grandchildren reported

a level of salience above the midpoint, and about 10% provided ratings of six or above (unpublished data from author). Information is forthcoming on the communicative determinants of such levels. Based on such data, we would claim that it is appropriate to apply the predicament model in this relationship, albeit that the application should take into account the unique aspects of a family connection between the parties.

The focus of the current study raises the issue of whether stereotyping and the use of patronizing communication are more likely over certain media. Ryan et al. (1998) suggest that telephone communication might make patronizing speech more likely (for instance, due to younger adults' stereotypes of older people's hearing abilities). In contrast, Lea and Spears's (1992) social identification-deindividuation (SIDE) model suggests that social group memberships may be particularly salient in on-line communication, and that this may lead to negative intergroup behaviors (Postmes, Spears, & Lea, 1998; Spears, Lea, & Lea, 1990). They argue that e-mail communication may precipitate deindividuation and a reliance on negative stereotypes. However, other research suggests that reliance on stereotypes is most likely in situations in which task demands are highest (Macrae, Milne, & Bodenhausen, 1994). Given the richness of cues available in FtF interaction, it is not unreasonable to think that this might be the situation in which task demands are highest, and hence stereotypes are most likely to be activated. These contrasting perspectives argue for research examining specifically the relative salience of group memberships and experience of feeling stereotyped across different media. Indeed, any research examining the prevalence of patronizing communication within this relationship would be valuable at this stage (Harwood, 2000).

*Limitations*

The sample used in the current study is obviously limited. The use of college students provides us with only a particular temporal slice of the GP-GC relationship, providing no information about how this relationship might develop over time. In addition, this group is restricted in terms of cultural diversity, somewhat skewed toward females, and probably lacking variation in socioeconomic status. It is worth noting that cultural differences in the role of the grandparent and the nature of GP-GC interaction can be quite pronounced (Cai et al., 1998; Hunter & Taylor, 1998; Ikels, 1998; Kamo, 1998; Ng et al., 1997; Williams & Torrez, 1998). As one can imagine, kinship patterns, extended family living arrangements, and broad societal attitudes concerning aging can profoundly influence the nature of the GP-GC relationship.

As noted earlier, subjects also tended to respond with regard to grandmothers more than grandfathers. This is, in part, a function of availability. As people age, they become considerably more likely to have grandmothers than grandfathers. Unpublished data from a comparable sample of college students indicate that 28% are likely to have no living grandfather, while only 7% have no living grandmother (see Uhlenberg & Kirby, 1998, for similar data). It may also be a function of relational closeness. There is evidence from other research that young adults are closer to their grandmothers (particularly maternal grandmothers) than grandfa-

thers (Creasey & Koblewski, 1991; Kennedy, 1992). In a situation in which they could pick any grandparent, there may have been a tendency to pick one to whom they felt closest. Asking about relationships with all grandparents, or specifying a particular grandparent for the response, would result in more representative responses.

Finally, to reduce subject burden, we collapsed questions on written media. In part, this was because we expected relatively low use of these media. The current data indicate that they may be more frequently used than we anticipated, and therefore that they should be examined separately in the future.

## Conclusion

Given the geographical distance that often separates grandparents and grandchildren, media are likely to play a crucial role in maintaining this relationship and helping it survive, particularly as children transition away from the parental home (see Holladay et al., 1998). Maintenance of this relationship will be important for both parties in terms of gaining a broader perspective on the world (through intimate contact with somebody of a radically different age), and in understanding their own family's history and future. The ways in which communication media are used in the relationship should provide fertile ground for those who wish to understand how individuals make media choices in the new communication environment. This paper has taken a first step toward understanding communication media choices in the GP-GC relationship and in extending MRT to family relationships.

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