The Grandparent–Grandchild Relationship
Implications for Models of Intergenerational Communication

KAREN ANDERSON
University of North Texas
JAKE HARWOOD
University of Arizona
MARY LEE HUMMERT
University of Kansas

We report two studies which examine the age stereotypes in interactions model of intergenerational communication. We investigate whether stereotyping processes mediate the effects of various predictors on communication outcomes. Support emerges for the mediating role of stereotyping. The studies also examine relational factors finding support for the argument that relational factors deserve more attention in models of intergenerational communication. Central variables emerging as predictive of intergenerational communication or stereotyping include perceived health of an older adult interlocutor, relational closeness, the nature of the relationship (grandparent versus older adult acquaintance), reciprocal self-disclosure, and age salience.

As interest in interactions between younger and older adults has grown, theories and models to explain communication interactions between the generations have also expanded. Theories and models built around stereotypes are central in intergenerational communication research; the majority of such models attempt to explain the ways in which stereotypes influence intergenerational communication, as well as the ensuing consequences (generally negative) for phenomena such as older adult health. Through a review of the primary models

---

Karen Anderson (Ph.D., University of Kansas) is an assistant professor and basic course director in the communication studies department at the University of North Texas. *Jake Harwood* (Ph.D., University of California, Santa Barbara) is an associate professor in the communication department at the University of Arizona. *Mary Lee Hummert* (Ph.D., University of Kansas) is a professor in the communication studies department at the University of Kansas. The authors would like to thank Adrianne Kunkel, Diana Carlin, the two anonymous reviewers, and the editor for their comments and suggestions as well as Jordan Soliz and Joy Koesten for their assistance coding. This paper is based on the first author's dissertation. An earlier version of this paper was presented at the 2004 National Communication Association Convention. Address correspondence to the first author at: University of North Texas, Department of Communication Studies, P. O. Box 305268, Denton, TX 76203; Email: kanders@unt.edu.

Human Communication Research, Vol. 31 No. 2, April 2005 268–294

in this area, we build the argument that these models have failed to incorporate the relationship between the interlocutors as a key factor. The hypotheses guiding our research examine the ways in which the grandparent relationship may be incorporated into models of intergenerational communication to specify more carefully the likely outcomes of such interaction. In other words, we attempt to add some relational context to models that have assumed intergenerational communication to occur in something of a relational vacuum.

Communication Predicament of Aging Model

The communication predicament of aging (CPA) model (Ryan, Giles, Bartolucci & Henwood, 1986) contends that young people's interactions with older adults are informed by negative stereotypes, and that the communicative consequences of stereotyping lead to a negative cycle for the participants. Communication accommodation theory (Giles, Coupland, & Coupland, 1991) provides the theoretical frame for the CPA model. The cycle in the model begins with the recognition of certain age cues, which make the negative age stereotype salient to a younger person. Vocal cues (Giles, Henwood, Coupland, Harriman, & Coupland, 1992), facial signs of age (Hummert, Garstka, & Shaner, 1997), and nonverbal behaviors (Montepare & Zebrowitz-McArthur, 1988) all can influence age categorization (see review by Hummert, Garstka, Ryan, & Bonnesen, 2004). These cues trigger age stereotypes related to older adults' communication abilities and needs (e.g., reduced cognitive ability or difficulty hearing; Ryan, Kwong See, Meneer, & Trovato, 1992). Thus, younger individuals may adapt their communication to older persons based upon these beliefs, in effect overaccommodating to the age stereotype, for instance, by producing patronizing speech (Hummert, Shaner, Garstka, & Henry, 1998; Hummert & Shaner, 1994). According to the model, this kind of speech has negative consequences for older adults' self-esteem and self-worth and can lead to negative self-stereotyping. Recipients of overaccommodating and patronizing communication are generally perceived to be less competent by others (Harwood, Ryan, Giles, & Tysoki, 1997) and have lower evaluations of their own communication competence (Kemper & Harden, 1999).

Age Stereotypes in Interactions Model

Within the framework of the CPA model, stereotyping is portrayed as an inappropriate behavior that has negative socioemotional consequences for older adults. Empirical research, however, shows that stereotypes of older adults are positive as well as negative (Brewer, Dull, & Lui, 1981; Hummert, 1990; Hummert, Garstka, Shaner, & Strahm, 1994; Schmidt & Boland, 1986). Positive stereotypes include the lively, adventurous, and

alert *golden ager,* and the kind, loving, and family oriented *perfect grandparent* (Hummert et al., 1994). Negative stereotypes include the slow-thinking, incompetent, and feeble *severely impaired* type, and the complaining, ill-tempered, and bitter *curmudgeon.* These findings have led to a second model of intergenerational communication and stereotyping, the age stereotypes in interactions model (ASI, Hummert, 1994; Hummert et al., 2004). The ASI model is grounded in a social cognitive perspective (Hamilton & Trolier, 1986), viewing stereotypes as knowledge structures employed in the processing of social information. It outlines the psychological and situational factors that can influence the valence of the age stereotypes activated in interpersonal communication and the consequences of their activation for communication behavior.

The ASI model (See Figure 1) considers three key factors involved in stereotype activation: the *self-system of the perceiver*, *characteristics of the older adult* target, and the *context in which the interaction occurs*. Under the self-system of the perceiver, the model includes the age of the perceiver (older perceivers have more complex age stereotype sets and are less likely to associate age cues with negative age stereotypes than are younger perceivers: Brewer & Lui, 1984; Hummert et al., 1994; Hummert et al., 1997), the quality of previous contact with older adults (higher quality is associated with positive stereotyping: Hale, 2000), and cognitive complexity (higher levels are associated with "person-centered" communication strategies and so should be related to less reliance on stereotypes; Burleson, 1984). Characteristics of the older adult in the model include physical characteristics (physique, physiognomic cues to age, and personal appearance) and communication behaviors. Both age cues and age-related communication behaviors such as painful self-disclosures have been linked to negative stereotyping (Bonnesen & Hummert, 2002; Coupland, Coupland, Giles, Henwood, & Wiemann, 1988; Hummert et al., 1997). In general, the ASI model predicts that negative stereotyping is more likely when the target's characteristics imply advanced old age and behavioral signs of decline mentally (e.g., forgetting) or physically (e.g., using a walker). The context in which the interaction occurs also comes into play, with institutional settings that make age salient increasing the likelihood of negative stereotyping (Caporael, 1981; Hummert et al., 1998).

Under the ASI model, these factors influence whether negative or positive stereotypes are activated. The stereotypes in turn influence beliefs about how to communicate with the older adult, thus affecting communication behaviors (Harwood & Williams, 1998; Hummert, Garstka, & Shaner, 1995; Hummert et al., 1998). In other words, stereotyping acts as a mediator between a set of predictors and communication outcomes. Negative stereotyping leads to age-adapted speech (as in the CPA model; See Figure 1), and positive stereotyping leads to a more "normal adult

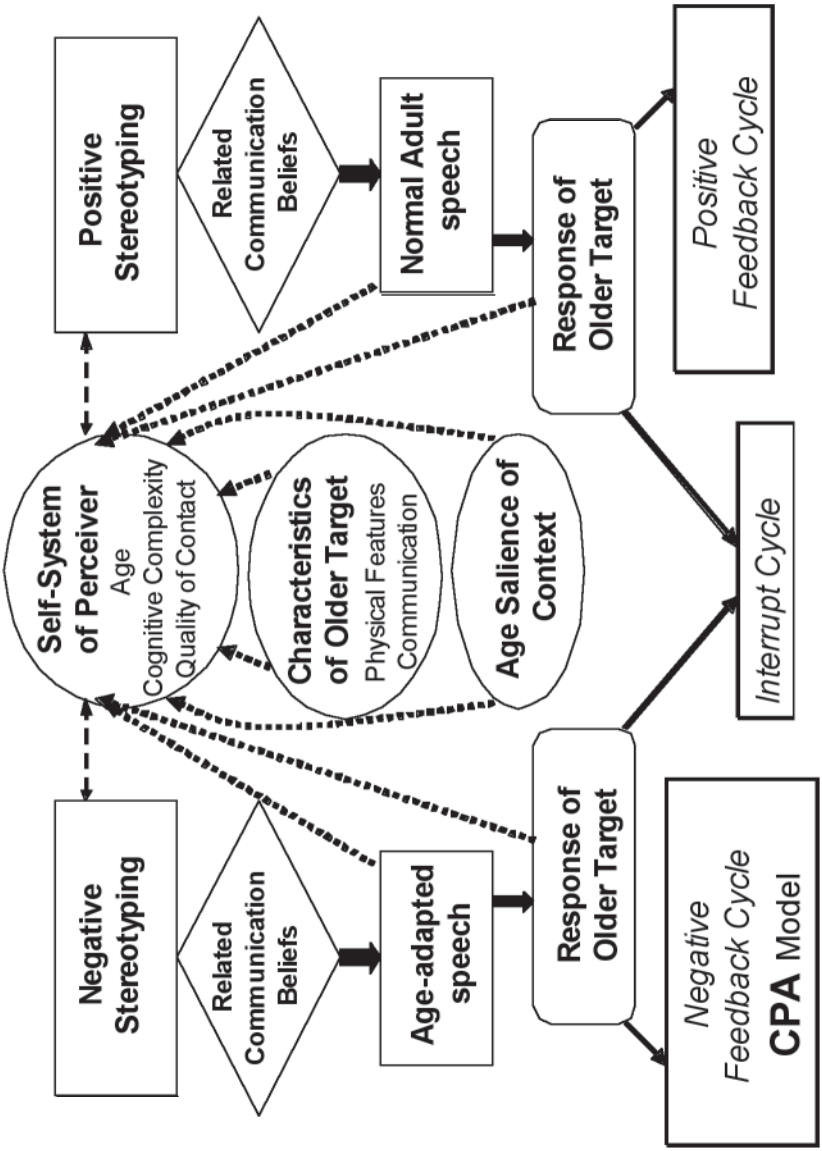

Figure 1. Age Stereotypes in Interactions Model (ASI; Hummert et al., 2004) as Adapted from Hummert (1994) to Highlight Perceiver Perspective and the ASI Model's Relationship to the Communication Predicament of Aging Model (CPA)

NOTE: The likelihood of negative stereotyping and age-adapted speech is greatest (a) in a young perceiver with low cognitive complexity and low quality contact with older adults, (b) who encounters an older target whose physical features and communication suggest advanced age and poor health, and (c) in an age salient context.

conversation" style (Harwood & Williams, 1998; Hummert et al., 1998). Age-adapted communication behaviors may include various forms of patronizing communication or elderspeak (Kemper & Harden, 1999) such as secondary baby-talk (Caporael, 1981) and controlling or directive talk (Lanceley, 1985; Hummert et al., 1998).

The bulk of the research testing the ASI model has been experimental, examining predictions regarding perceiver age, the characteristics of the older target and stereotyping (Hummert et al., 1997) and the links between perceiver age, stereotypes, context, communication beliefs and communication behaviors (Harwood & Williams, 1998; Hummert et al., 1995; Hummert et al., 1998; Hummert & Shaner, 1994). Predictions regarding the role of individual differences in cognitive complexity and interpersonal contact have not been tested. Further, research has been limited to intergenerational communication in stranger, acquaintance, or institutional relationships. Most intergenerational communication, however, occurs between individuals within a defined relationship: that between grandparents and grandchildren (Ng, Liu, Weatherall, & Loong, 1997; Williams & Giles, 1996). The next sections, therefore, discuss the nature of the grandparent relationship, as well as the ways in which it might be incorporated into the models described above.

The Grandparent–Grandchild Relationship

As should be clear from the discussion above, minimal attention has been paid to personal relationships in the literature on intergenerational communication (Williams & Nussbaum, 2001). A small body of work examines the ways in which contact with grandparents influences attitudes concerning aging and intergenerational relationships (Harwood, Hewstone, Paolini, & Voci, in press; Silverstein & Parrott, 1997; Soliz & Harwood, 2003).

A positive grandparent–grandchild (GP–GC) relationship is mutually beneficial to young and older adults. Grandchildren who report having close relationships with their grandparents are more likely to engage in activities with their grandparents, see benefits to spending time with their grandparents, and are likely to be influenced by their grandparent's values and beliefs (Brussoni & Boon, 1998). Grandparents may function as a source of social support (Lin, Harwood, & Bonnesen, 2002; Nussbaum & Bettini, 1994) and family history (Harwood, 2004; Harwood, McKee, & Lin, 2000) for grandchildren. Additionally, the GP–GC relationship is a source of pride (Harwood & Lin, 2000) for grandparents and is something that "keeps them young" (Harwood et al., 2000). The internal communication dynamics of the GP–GC relationship have been largely ignored, although recent research has begun to examine evaluations of this relationship as compared to intergenerational communication outside

of the family (Cai, Giles, & Noels, 1998; Ng et al., 1997). Such work tends to find more positive evaluations of intergenerational relations within the family. Pecchioni and Croghan (2002) found more positive stereotypes of grandparents, concluding that closer grandparent relationships are associated with more positive stereotyping than less close grandparent relationships. They contended that this may indicate that closer GP–GC relationships may facilitate a shift from stereotyping as an intergroup function to judgments based on an interindividual level.

Rationale

As indicated above, existing models of stereotypes' role in intergenerational interactions do not take into account the crucial relationship between the younger adult and older adult. Indeed, many examinations of these models have been experimental and have deliberately reduced the relationship between the participants to that of strangers. No systematic attempt has been made to test the ASI model within the context of specific relationship types. To rectify this situation, we first predicted that the nature of the relationship (grandparent versus older adult acquaintance) would influence stereotyping of an older adult target. Given the previous research demonstrating more positive communication and evaluation of grandparents than other older adults, it seemed reasonable to predict that grandparents would be stereotyped more positively than other older adults. Relational closeness may also play an important role in the stereotyping process (Pecchioni & Croghan, 2002). Specifically, closer relationships are likely to be associated with more positive evaluations, and hence less negative stereotyping:

H1: Young adults are more likely to engage in positive stereotyping of their grandparents than of older adult acquaintances.
H2: Young adults reporting higher levels of closeness in the relationship examined are more likely to positively stereotype their relational partners than young adults reporting lower levels of closeness.

As noted earlier, being a grandchild is a role with distinct social expectations. Specifically, it may be socially inappropriate to negatively stereotype a grandparent. Thus, when a young adult is reporting on a grandparent, the influence of closeness on stereotyping might be minimized: Even not-close grandparents are not stereotyped negatively. When reporting on an older adult acquaintance, however, lower levels of relational closeness will predict negative stereotyping given the greater acceptability of negative stereotyping outside the family. Relational closeness, therefore, could moderate the effect of the relationship type on stereotyping:

H3: There will be a significant interaction effect between relationship type (grandparent versus older adult acquaintance) and relational closeness, such that the relationship between closeness and positive stereotyping will be stronger for older adult acquaintances than for grandparents.

The ASI model (Hummert, 1994; Hummert et al., 2004) maintains that the self-system of the perceiver, the characteristics of the older adult target, and the situation all influence stereotyping. Stereotyping in turn influences communication behaviors. The structure and logic behind The ASI model places stereotypes as mediators of the association between the predictors (self-system, older adult characteristics, and our relationship variables) and communication behavior outcomes (age-adapted speech versus normal adult conversation). This mediated relationship, however, has not been tested. The following hypothesis will specifically examine this mediated relationship:

H4: The self-system of the perceiver, the physical characteristics of the older adult, and the relationship between the perceiver and the older adult will be associated with age-adapted communication behaviors, but this relationship will be mediated by stereotyping.

STUDY 1

Method

Participants ($N = 217$) received extra credit in communication courses at a large midwestern U.S. university in exchange for completing a questionnaire. Four questionnaires were eliminated because the participants were over 25 years of age (and thus did not fit the criteria of young adult), and five were dropped because they had not communicated with an older adult acquaintance or a grandparent in the prior 6 months (see below). Of the 208 participants included in the analysis, 115 (55%) of the participants were female, and 93 (45%) of the participants were male. Most respondents were White or European Americans (91%), or African American (5%); the remaining 4% indicated Latino or Hispanic, Asian, or mixed race.

Procedures and Materials

Participants completed a two-part survey. The first part assessed the participants' demographics (i.e., sex, age, and ethnicity) and the self-system variables (i.e., cognitive complexity and quality of contact with older adults in general). Participants completed the Role Category Questionnaire (RCQ) measure of cognitive complexity (Crockett, 1965). They

wrote 5-minute descriptions of two acquaintances of their age, one of whom they like and one of whom they dislike. The descriptions were coded to identify the number of interpersonal constructs used, and the total number of identified constructs was an index of cognitive complexity (Burleson & Caplan, 1999). The RCQ has good test–retest reliability and is a valid measure of cognitive complexity (Burleson & Waltman, 1988). In the current study, two coders were trained to identify and count the total number of constructs in the descriptions: Scott's (1955) $\pi = .92$. Quality of contact with "older adults (60 years and older)" was assessed with four semantic differential items (i.e., pleasant–unpleasant, satisfying–unsatisfying, enjoyable–unenjoyable, and high quality–low quality: $\alpha = .90$). Finally, the participants were asked if they had communicated (either in person or via phone, email, or letter) with their paternal grandfather, paternal grandmother, maternal grandfather, maternal grandmother, or an older adult acquaintance in the past 6 months. (As described above, five respondents who had not communicated with any potential target were dropped.)

The second part of the survey, which was administered immediately following the first part of the survey, asked a more detailed set of questions about the nature of communication with one of the older individuals with whom the respondent had communicated in the previous 6 months (the "older target"). In an attempt to maintain a balanced distribution between relationship types (grandparents versus acquaintances), a quasi-random assignment procedure was used. We randomly assigned to relationship type conditions for the first group of participants. If an individual indicated communication with both a grandparent and an older adult acquaintance, either the grandparent or acquaintance condition was randomly assigned. Furthermore, individuals assigned to the grandparent condition who had communicated with more than one grandparent were randomly assigned to report on one of the available grandparents. After the first data collection session, assignment to the relationship type condition in each subsequent group of participants was modified to achieve balanced cells for the relationship type variable. After each group completed the survey, the following group of participants was under or over assigned to conditions as needed. This procedure was designed to balance the desires for randomization and equal cells. The final sample reported on 105 (50.5%) older adult acquaintances and 103 (49.5%) grandparents.

Part two of the survey sought information about the older target including demographics (i.e., age, sex, and ethnicity), physical characteristics, stereotypes, and the participants' age-adapted communication behaviors with the target. Male targets constituted 52% of the sample ($N = 109$) and 48% of the sample ($N = 99$) were female. The majority of targets were White or European Americans (91%) and African American (6%).

There were no differences between grandparents and older acquaintance targets in terms of gender mix, χ^2 (1, N = 208) = 1.00, $p > .05$. The acquaintance targets were significantly younger (M = 68.57; SD = 7.55) than the grandparents (M = 75.85; SD = 6.72), t (206) = 7.38, $p < .001$. Thus, age of older adult was added to the analysis. Participants' perceptions of the physical characteristics of the older target were assessed with items concerning physiognomic cues to age (the physical appearance of the individual's face, skin, and hair) (α = .61), physique (general health, posture, and mobility) (α = .80), and personal appearance (attire and grooming) (α= .84). Higher numbers on these scales indicated older facial features, a healthier physique, and a more well-groomed appearance.

To determine the degree of relational closeness, we used the support and depth subscales of Pierce, Sarason, and Sarason's (1991) Quality of Relationship Inventory (QRI). The perceived support aspect of the scale is a relationship-specific measure which evaluates the belief that one is loved, valued, and cared for in such a way that others would help regardless of personal circumstances. The depth of relationship aspect gauges beliefs about commitment and security in a relationship—the strength of the interpersonal bond between the two relationship partners. In previous research, these dimensions have been substantially intercorrelated (i.e., relationship closeness is a sense of being cared for and loved by others and beliefs about others' commitment to provide support; Pierce, 1994). Thus, the scales were combined and demonstrated good reliability (α = .93).

We used 16 semantic differential items to create a measure of stereotyping of the older adult. The traits were selected from Hummert et al.'s (1994) positive and negative stereotypes of older adults. Negative traits that had obvious opposites on the positive traits list were included (e.g., sad–happy; sedentary–active; miserly–generous). If an obvious antonym was not present then one was created (i.e., depressed–not depressed, unhealthy–healthy, lonely–not lonely, incompetent–competent, dependent–independent, disagreeable–agreeable, fearful–not fearful, not sociable–sociable, hopeless–hopeful, inarticulate–articulate, selfish–unselfish, incapable–capable, and ill–tempered–good-natured). Ratings on these traits were combined to create a single continuous measure from positive to negative (α = .91) with higher ratings indicating positive stereotyping.

The final portion of the survey examined the participant's age-adapted communication behaviors with the older adult target. We used 16 Likert-type items to determine the degree to which the participant engaged in age-adapted speech behaviors (α = .86). Items in this measure were adapted from Harwood's (2000) work on accommodation in the grandparent–grandchild relationship. Items asked for participants to report on specific communication behaviors, such as topic choice (e.g., "I avoid certain topics" and "I talk about topics she/he enjoys"); vocal modifications (e.g., "I

TABLE 1
Means, Deviations, and Correlations Among Variables in Study 1 (*N* = 208)

	M	SD	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1. Physiognomic cues to age	2.98	1.01	—	-.47**	-.26**	.37**	.03	.08	-.22**	-.30**	.25**
2. Healthy physique	3.99	1.12		—	.39**	-.42**	-.07	.01	.15*	.60**	-.31**
3. Personal appearance	4.42	.70			—	-.13	-.10	.27**	.38**	.53**	-.39**
4. Age of older adult	72.18	8.01				—	.12	.09	-.01	-.23**	.15*
5. Cognitive complexity of younger adult	23.32	8.41					—	-.05	-.09	.05	.00
6. Quality of contact with older adults	4.12	.76						—	.40**	.27**	-.41**
7. Closeness of relationship	2.59	.72							—	.42**	-.61**
8. Positive stereotyping of older adult	4.18	.70								—	-.57**
9. Age-adapted communication behaviors	3.62	.72									—

NOTE: * $p < .05$, ** $p < .01$.

speak louder than normal" and "I speak slower than normal"); and grammatical modifications (e.g., "I use simpler words than normal"and "I try to speak using short sentences") used with older adults. Means, standard deviations, and correlations of main variables are shown in Table 1.

Exploratory factor analysis (principal component extraction, varimax rotation) of all multi-item scales was conducted to examine the dimensionality of those scales. In all cases but one, the factor analysis yielded a single factor solution or a multifactor solution in which the eigenvalue for the first factor was dramatically higher than that for subsequent factors (e.g., the stereotyped traits scale yielded an eigenvalue for the first factor of 7.4 and for the second factor 1.7). Both scenarios suggest that a single factor is an appropriate interpretation. The age-adapted communication behavior scale yielded a multi-factor solution without a clear indication of a dominant first factor in the eigenvalues. Specifically, underlying the items appears to be an interpretable four factor solution consistent with previous work examining these items (Williams & Giles, 1996). The factors relate to themes of overaccommodation (e.g., I speak louder than normal), engagement (e.g., I share personal thoughts and feelings),

TABLE 2
Summary of Regression Analysis for Standardized Variables Predicting Younger Adults' Positive Stereotyping of Grandparents and Acquaintances (N = 208)

Variable	B	SE B	β	sr^2
Step 1				
Physiognomic cues to age	.04	.06	.04	.00
Healthy physique of older adult	.47	.06	.47**	.14
Personal appearance of older adult	.25	.06	.25**	.04
Age of older adult	.01	.06	.01	.00
Cognitive complexity of younger adult	.15	.05	.14*	.02
Quality of contact with older adults	.10	.05	.09	.01
Closeness of relationship	.28	.06	.28**	.05
Type of relationship	-.32	.11	-.16*	.02
Step 2				
Physiognomic cues to age	.03	.06	.03	.00
Healthy physique of older adult	.47	.06	.46**	.14
Personal appearance of older adult	.25	.06	.25**	.04
Age of older adult	.02	.06	.02	.00
Cognitive complexity of younger adult	.15	.05	.15*	.02
Quality of contact with older adults	.09	.05	.09	.01
Closeness of relationship	.06	.15	.06	.00
Type of Relationship	-.32	.11	-.17**	.02
Relationship type x closeness	.15	.10	.23	.01

NOTE: * $p < .01$, ** $p < .001$. $R^2 = .57$ ($p < .001$) for Step 1; $\Delta R^2 = .01$ ($p > .05$) for Step 2. sr^2 is squared semi-partial correlation. Type of relationship dummy coding: acquaintance = 0; grandparent = 1.

reluctant young accommodation (e.g., I don't always say what I think), and respect (e.g., I show respect). Nevertheless, given the strong coefficient alpha and the underlying theoretical thrust of the model this scale was treated as a single dimension in the current analysis, with higher numbers indicating greater use of age-adapted communication.

Results

We tested the hypotheses using multiple regression. Prior to the analysis the variables were centered and an interaction term of relationship type and closeness was created. In the first step of the regression procedure the predictors outlined earlier (and in Step 1 in Table 2) were entered to

predict the stereotype index. H1 proposed that young adults were more likely to engage in positive stereotyping of their grandparents than of older adult acquaintances. Table 2 shows that type of relationship significantly predicted stereotyping. The direction, although significant, was in contrast to the hypothesis. Young adults positively stereotyped the older adult acquaintance ($M = 4.27$) more than their grandparents ($M = 4.09$). Thus, H1 was not supported. H2 projected that relational closeness would be associated with positive stereotyping, and support for this was found in the analyses (Table 2).

With regard to the more general test of the model, support emerged that many (though not all) variables in the ASI model (Hummert, 1994; Hummert et al., 2004) do indeed predict unique variance in younger adults' stereotyping of older interlocutors. In terms of the self-system of the perceiver, increased cognitive complexity of the respondent was associated with positive stereotyping, but quality of contact with older adults in general did not predict stereotyping. In terms of the older adult characteristics, healthier physique and more well-groomed appearance were significant predictors; physiognomic cues, however, were not. Age of the older adult was not a significant predictor. The significant results were all in the direction predicted by the ASI model.

H3 was concerned with the interaction between relationship type (grandparent versus older adult acquaintance) and relational closeness. Power to detect relatively small effects ($f^2 = .05$) of the moderator terms was good (.88) (Cohen, 1988). The interaction term was added to the analysis in Step 2 of the regression procedure. As Table 2 shows, H3 was not supported.

H4 was tested using a multiple regression procedure appropriate for examining mediation (Baron & Kenny, 1986; Judd & Kenny, 1981). Specifically, we examined whether stereotyping mediated the relationship between the set of predictors and communication behaviors. A series of three regression analyses is used. The first establishes the relationship between the predictors and the criterion, and the second establishes the relationship between the predictors and the mediator. The final analysis examines the simultaneous influence of predictors and mediator on the criterion.

The first regression analysis found that four of the eight initial variables significantly predicted communication (Table 3). In accord with Baron and Kenny (1986), the remaining variables were dropped from the model. In the second analysis, the significant variables from the first regression were regressed on stereotyping (the mediator). All four significantly predicted stereotyping (Table 4). The third regression analysis tested explicitly for mediation. The significant predictors from the first regression and stereotyping were predictors and communication behavior was the criterion. As predicted by H4, the effects of physique and

TABLE 3
Summary of Hierarchical Regression Analysis for Variables Predicting Younger Adults' Age-Adapted Communication Behaviors with Grandparents and Acquaintances ($N = 208$)

Variable	B	SE B	β	sr^2
Physiognomic cues to age	.04	.04	.05	.00
Healthy physique of older adult	-.10	.04	-.15*	.01
Personal appearance of older adult	-.09	.06	-.09	.00
Age of older adult	.00	.01	.03	.00
Cognitive complexity of younger adult	-.01	.00	-.09	.01
Quality of contact with older adults	-.19	.06	-.20*	.03
Closeness of relationship	-.50	.06	-.49**	.16
Type of relationship	.17	.09	.12*	.01

NOTE: $R^2 = .48$ ($p < .001$); type of relationship dummy coding: acquaintance = 0; grandparent = 1. sr^2 is squared semi-partial correlation. * $p < .05$, ** $p < .01$.

type of relationship on communication were fully mediated by stereotyping—when stereotyping was controlled these variables did not explain any unique variance in communication. We conducted analyses to determine whether the predictor variables accounted for significantly less variance in the criterion after the inclusion of the mediator (Goodman, 1960). This demonstrated that the effects of physique [Goodman (I) test = 4.33, $p < .001$] and type of relationship [Goodman (I) test = 2.20, $p = .02$] were significantly reduced by the introduction of the mediator. In contrast, the effects of quality of contact with older adults and relational closeness were not significantly changed by the inclusion of stereotyping in the model (Table 4).

Discussion

The overarching notion of the ASI model (Hummert, 1994; Hummert et al., 2004) is that variables relating to the self-system of the perceiver and characteristics of the older adult both influence stereotyping, which then influences age-adapted communication behaviors. In general, this was supported. Specifically, cognitive complexity (self-system) and the older adult's physique and personal appearance all predicted stereotyping. In addition, stereotyping significantly predicted age-adapted communication behaviors. A number of variables, however, did not predict stereotyping in the ways predicted by the ASI model, and some variables influenced communication in ways that were not mediated by stereotyping.

TABLE 4
Mediation Analysis of Variables Predicting Positive Stereotyping and Age-Adapted Communication Behaviors (*N* = 208)

	Positive Stereotyping			*Age-Adapted Communication Behaviors*		
Predictor Variable	B (SE)	β	sr^2	B (SE)	β	sr^2
Healthy physique of older adult	.33 (.03)	.53*	.26	-.03 (.04)	-.04	.00
Quality of contact with older adults	.13 (.05)	.14*	.02	-.15 (.05)	-.16*	.02
Closeness of relationship	.31 (.05)	.32*	.08	-.42 (.06)	-.42**	.12
Type of relationship	-.20 (.07)	-.15*	.02	.12 (.08)	.09	.01
Positive stereotyping	—	—	—	-.33 (.07)	-.31**	.05

NOTE: The table represents two regression analyses. On the left, positive stereotyping is the criterion variable, $R^2 = .50$ ($p < .001$). On the right, positive stereotyping is included as a predictor and communication behaviors are the criterion, $R^2 = .51$ ($p < .001$). Type of relationship dummy coding: acquaintance = 0; grandparent = 1. sr^2 is squared semi-partial correlation. * $p < .01$, ** $p < .001$.

The most notable variables not to predict stereotyping or age-adapted communication behaviors are the age of the older adult and physiognomic cues. The most likely explanation for the lack of predictive power of these variables is that there is substantial overlap between a number of the predictors. As can be seen in Table 1, these variables are substantially correlated with stereotyping and communication outcomes. They are also correlated with other predictors such as physique or personal appearance of the older adult, and they are intercorrelated with one another. Hence, they do not account for unique variance in the outcome variables. Further, the questionnaire methodology used in this study necessitated separating physical characteristics into three subscales, whereas in natural settings perceivers attend to these cues as a whole. The studies that have demonstrated a link between physiognomic cues to age and negative stereotyping have used visual stimuli (drawings or photographs) that varied in perceived age rather than actual age (Hummert et al., 1997; Montepare & Zebrowitz-McArthur, 1988). Hummert et al. found, for example, that photos of people who were perceived to be in their 80s or older were associated with negative age stereotypes of poor health. Actual age may be a predictor of negative stereotyping in the absence of other information (Ryan et al., 1992); however, the ASI

model does not include it as a predictor but, instead, posits that negative stereotyping occurs to the extent that the physical characteristics as a set suggest advanced age and poor health. Even though our study did not include a direct measure of perceived age, the strong correlation of physiognomic cues and the physique dimension (which included health) is consistent with the model.

The fact that our physique measure predicted communication behaviors and was also a significant predictor of stereotyping (excluding for now the relational variables) nevertheless suggests that the health of an older adult interlocutor may trump other variables in terms of predicting evaluations of and communication with that person. Health appears to be a marked variable in this context, perhaps the key differentiator between positive and negative stereotyping, as well as between accommodative and nonaccommodative behaviors. In questionnaire studies, then, the physique measure may be sufficient to assess the role of physical features in the stereotyping process.

Finally, only two of the ASI model's predictors yielded the mediated pathway predicted by the model. Specifically, physique of the older adult's effect on communication behaviors was fully mediated by stereotyping, and general quality of contact with older adults was partially mediated by stereotyping. Even though greater cognitive complexity did predict more positive stereotyping, it did not predict age-adapted communication. Hence, the general pattern predicted by the ASI model did emerge, but not in a wholesale fashion for the full set of predictors.

The relational variables are the key development of this study over previous work—and also provide some of the most intriguing findings from Study 1 that were pursued in Study 2.

Relationship of Young Adult and Older Adult

The relationship of the young adult and older adult were examined in two key ways: the type of relationship and closeness of the relationship. Two key findings emerged from our examination of these variables. First, closeness was a significant predictor of stereotyping and age-adapted communication behaviors, but its influence on age-adapted communication behaviors was only not mediated by stereotyping. Second, type of relationship predicted stereotyping and age-adapted communication behaviors even when relational closeness was controlled, but its influence on age-adapted communication behaviors was fully mediated by stereotyping. Interestingly, the effect is counter to what was predicted: Young adults' stereotypes of their grandparents were significantly less positive than their stereotypes of older adult acquaintances. Equally interesting is that there appears to be something about the relationship type itself that influences stereotyping over and above the level of closeness in the

relationship. Hence, Study 2 investigated potentially important relational factors that might account for why relationship type, per se, should influence stereotyping over and above relational closeness. First, we considered other relational factors not accounted for in Study 1 that might differentially affect how young adults stereotype grandparents versus acquaintances. Second, we considered a broader psychological construct (i.e., age salience), which has been shown to influence relational communication and be tied to stereotypes.

Potential Explanations for the Effect of Relationship Type on Stereotyping

A possible explanation for the findings in Study 1 is that participants reporting on their grandparents have a deeper understanding of the older adult target than participants reporting on older adult acquaintances. Participants reporting on grandparents might have more extensive and detailed relational knowledge of the individual rather than generalized stereotypic reactions to a nonfamily older target. It is also likely that they have more intimate and frequent contact with grandparents than other older adults (Baranowski, 1982; Ng et al., 1997). Additionally, the shared family association of the GP–GC relationship could provide deeper knowledge of the older adult based on the common ingroup association (Gaertner et al., 2000). This depth of knowledge distinction could also explain why older adult acquaintances were more positively stereotyped than grandparents. Linville's (1982) complexity–extremity effect argues that the more knowledge we have of a particular group the less extreme our evaluations are about that group. Applied at the individual level, this effect implies that the deeper GP–GC relationship could mean a more informed and complex understanding of the relational partner and hence less extreme views of that individual. The stereotypical evaluations of the older adult targets in this study were largely positive. As a result, the less extreme views that we hypothesize to accompany more complex knowledge of the grandparent would translate to less positive evaluations on the stereotype scale—that is, the pattern from Study 1.

For Study 2, therefore, we incorporated two new variables that might tap the depth of the relationship—the extent to which the partners have complex and diverse knowledge of one another. In addition to closeness and relationship type (from Study 1), we also measured reciprocal self-disclosure and quantity of contact with the target.

Through reciprocal self-disclosure individuals gain knowledge of one another (Laurenceau, Barrett, & Pietromonaco, 1998). Additionally, reciprocal self-disclosure provides insight into the level of social penetration of the relationship (Mannarino, 1976; Parker & Gottman, 1989). In line with Reis and Shaver's (1988) interpersonal process model of intimacy, we believe that self- and partner-disclosure of emotional information are

foundational in the building of intimacy and depth. A higher level of reciprocal self-disclosure between young adults and their grandparents is expected due to the more personal, intimate, and family nature of the GP–GC relationship (Baranowski, 1982; Ng et al., 1997).

Quantity of contact provides insight into the duration and frequency of interaction. Pettigrew (1998) argues that positive contact is a function of long-term close relationships rather than acquaintanceships. Contact may be more frequent in grandparent than acquaintance relations due to the family connections and the inherent longevity of the relationship. More frequent contact may mean that contact has occurred in multiple contexts, yielding more diverse experience on which to draw in forming impressions of the older adult target. Thus, a greater quantity of contact in the GP–GC relationship should be an indicator of increased complexity of the younger adults' perceptions. As noted above, this diversity should yield somewhat less positive evaluations due to the complexity–extremity effect. Hence, we predict that both of these variables will differ between grandparents and older adult acquaintances; this difference will account for the effects of relationship type on stereotyping observed in Study 1.

H5: Young adults will report higher levels of reciprocal self-disclosure in their relationships with grandparents than with older adult acquaintances.
H6: Young adults will report higher quantity of contact with their relationships with grandparents than with older adult acquaintances.
H7: The inclusion of quantity of contact and/or reciprocal self-disclosure will remove the significant effects of relationship type observed in Study 1.

An additional explanation for the association between relationship type and stereotyping involves age salience (awareness and consciousness of age difference). If the older adults' age is not salient in interaction then they will not be treated as a member of that group, and therefore stereotyping processes will not occur (Richards & Hewstone, 2001). If the older adults are not categorized as elderly, then evaluations of them will occur on an individual basis or an alternative categorical basis. Given the availability of shared family identity as an alternative categorization in the case of grandparents (Banker & Gaertner, 1998), we hypothesized that age was more likely to be salient with nonfamily members (e.g., acquaintances). Thus, differences in age salience between the targets might account for the stereotyping differences in Study 1.

H8: Young adults will perceive their grandparents to have lower levels of age salience than older adult acquaintances.
H9: The inclusion of age salience will remove the significant effects of relationship type observed in Study 1.

STUDY TWO

Method

Participants ($N = 269$) received extra credit in communication courses at a large midwestern U.S. university in exchange for completing a questionnaire. Eighteen questionnaires were not analyzed because the participants were over 25 years of age or did not complete a portion of the survey (final $N = 251$). The mean age of the participants was 21 years old ($SD = 1.66$), 149 (59%) of the participants were female, and 102 (41%) were male. Most respondents were White and European (86%), African American (3%), Asian (3%), or Hispanic or Latino (3%).

Procedures and Materials

Participants completed a questionnaire very similar to that in Study 1. As before, we assigned them to an older adult target in a quasi-random fashion. In this study, all five possible targets (four grandparent relationships and older adult acquaintance) were listed and participants used the first one with whom they had communicated as their target. We randomly assigned participants to different orderings of potential targets, thereby resulting in a quasi-random assignment to older targets. As with Study 1, complete random assignment was not possible, because some participants had not interacted with some potential targets.

Of the 251 targets reported on, 103 (41%) were male and 148 (59%) were female. The majority of older adults were White or European Americans (90%), African American (2.5%), Asian (3%), or Hispanic or Latino (2%), while approximately 2.5% were from other ethnic groups or ethnicity was not reported. Eighty (32%) of the targets were older adult acquaintances, while 171 (68%) were grandparents. There was not a significant difference across relationship type for gender, $\chi^2(1, N = 251) = .38$, $p > .05$. As with Study 1, the older adult acquaintances ($M = 68.95$; $SD = 6.18$) were significantly younger than the grandparents ($M = 73.84$; $SD = 6.81$), $t(249) = 5.46$, $p < .001$. Age of older adult was added to the analysis.

Measures of quality of contact with older adults ($\alpha = .90$), physique of older adult ($\alpha = .82$), closeness of relationship ($\alpha = .93$), stereotypes of older adult ($\alpha = .76$), and age-adapted communication behaviors with the older adult ($\alpha = .80$) were the same as used in Study 1. A reciprocal self-disclosure measure was derived from Laurenceau et al. (1998; Harwood, Soliz, & Lin, in press). Three of the items gauged the participants' level of self-disclosure to the specific older target, while the other three included perceptions of the older adults' level of self-disclosure ($\alpha = .83$). A one-item measure to determine quantity of contact asked participants how often they had interacted face-to-face with the older adult in the past 5 years (*almost daily–almost never*). An eight-item measure based

TABLE 5
Means, Deviations, and Correlations Among Variables in Study 2 ($N = 251$)

	M	SD	1	2	3	4	5	6	7	8	9
1. Healthy physique of older adult	3.78	1.19	—	-.40**	-.02	.16*	.02	.07	-.31**	.68**	-.32**
2. Age of older adult	72.28	6.99		—	.08	.14*	.03	.03	.19**	-.29**	.06
3. Quality of contact with older adults	3.19	1.32			—	.09	.06	.08	.08	.04	-.01
4. Closeness of relationship	2.69	.72				—	.40**	.59**	-.21**	.32**	-.43**
5. Quantity of contact	3.54	1.24					—	.24**	-.13*	.05	-.10
6. Reciprocal self-disclosure	3.05	.87						—	-.14*	.26**	-.45*
7. Age salience	4.17	.99							—	-.30**	.34**
8. Positive stereotyping	3.91	.59								—	-.53**
9. Age-adapted communication behaviors	3.74	.61									—

NOTE: * $p < .05$, ** $p < .01$.

on Harwood et al. (in press) was used to gauge age salience. A seven-point semantic differential scale (1 = *very little*; 7 = *great deal*) asked young adults to rate their awareness of the age difference between themselves and the older adult (e.g., "When communicating with this individual, how much does your age matter?") and to rate how representative the older adult is of their age group (e.g., "To what extent is this individual like other older adults?") ($\alpha = .80$). Means, standard deviations, and correlations among the variables are reported in Table 5.

Unidimensionality for multi-item scales was examined and established in the same ways as Study 1. All scales met our criteria for clear unidimensionality, except for the age-adapted communication behaviors scale and the age salience measure. For the age-adapted communication scale, a four factor solution resembled that from Study 1; however, the engagement and respect factors were somewhat less distinguishable. For age salience, a two- factor solution emerged. This reflected a distinction between pure awareness of age and age-typicality. Interestingly, these two dimensions have not been clearly distinguished in the literature, although our data appear to demonstrate some conceptual differentiation.

TABLE 6
Summary of Hierarchical Regression Analysis for Variables Predicting Younger Adults' Age-Adapted Communication Behaviors with Grandparents and Acquaintances ($N = 251$)

Variable	B	SE B	β	sr^2
Healthy physique of older adult	-.10	.03	-.19**	.03
Age of older adult	-.01	.01	-.06	.00
Quality of contact with older adults	.01	.03	.02	.00
Closeness of relationship	-.20	.07	-.24**	.02
Type of relationship	.18	.09	.13*	.01
Reciprocal self-disclosure	-.20	.05	-.29**	.05
Age salience	.12	.03	.20**	.03
Quantity of contact with older adults	.03	.03	.07	.00

NOTE: * $p < .05$, ** $p < .01$. $R^2 = .36$ ($p < .001$) ; type of relationship dummy coding: acquaintance = 0; grandparent = 1. sr^2 is squared semi-partial correlation.

Again, theoretical concerns and the strength of the coefficient alphas led us to retain unidimensional scales for age-adapted communication behaviors and age salience.

Results

In contrast to the prediction of H5, reciprocal self-disclosure did not differ significantly across relationship type, $t(249) = -.76$, $p > .05$. Quantity of contact, however, did differ significantly across relationship type, $t(249) = -2.61$, $p < .05$. In support of H6, participants reported more contact with their grandparents ($M = 3.40$; $SD = .95$) than with the older adult acquaintances ($M = 3.01$; $SD = 1.35$). In contrast to the prediction of H8, age salience did not differ significantly across relationship type, $t(249) = -.46$, $p > .05$.

We conducted a series of regression analyses to test H7 and H9. Even though these hypotheses were concerned with the influence of relationship type on stereotyping, we examined the full mediated model to remain consistent with the analysis from Study 1 and understand the stability of the findings from Study 1. Thus, a series of three regression analyses tested whether stereotyping mediates the relationship between eight initial variables (listed in Table 6) and the reported age-adapted communication behaviors of young adults with older adults.

The first regression analysis established the relationship between the eight initial variables and the outcome variable of age-adapted communication behaviors. Five of the eight initial variables significantly predicted age-adapted communication behaviors (Table 6). In accordance

TABLE 7
Mediation Analysis of Variables Predicting Positive Stereotyping and Age-Adapted Communication Behaviors (*N* = 251)

	Positive Stereotyping			*Age-Adapted Communication Behaviors*		
Predictor Variable	B (SE)	β	sr^2	B (SE)	β	sr^2
Healthy physique of older adult	.29 (.02)	.58**	.26	.03 (.04)	.05	.00
Closeness of relationship	.19 (.05)	.23**	.03	-.30 (.05)	-.35**	.08
Type of relationship	-.20 (.07)	-.16*	.02	.15 (.08)	.12	.01
Reciprocal self-disclosure	.06 (.04)	.09	.00	—	—	—
Age salience	-.03 (.03)	-.05	.00	—	—	—
Positive stereotyping	—	—	—	-.44 (.08)	-.43**	.08

NOTE: The table represents two regression analyses. On the left, positive stereotyping is the criterion variable, $R^2 = .54$ ($p < .001$). On the right, stereotyping is included as a predictor and communication behaviors are the criterion, $R^2 = .36$ ($p < .001$). Type of relationship dummy coding: acquaintance = 0; grandparent = 1. sr^2 is squared semi-partial correlation.
* $p < .01$, ** $p < .001$.

with Baron and Kenny's (1986) procedures the variables that were not significant predictors (quality of contact with older adults in general, age of the older adult target, and quantity of contact with the older adult target) were dropped from the model. Of the remaining variables, only physique of older adult, closeness of relationship, and relationship type significantly predicted stereotyping (Table 7). In the third analysis, physique of older adult, closeness of relationship, type of relationship, and stereotyping were predictors and age-adapted communication behavior was the criterion. As shown in Table 7, the influence of physique of older adult and type of relationship on age-adapted communication behaviors was fully mediated by stereotyping. Again, analysis demonstrated that the effects of physique [Goodman (I) test = 5.13, $p < .001$] and type of relationship [Goodman (I) test = 2.50, $p = .01$] were significantly reduced by the inclusion of stereotyping in the model, but the effect of closeness was not significantly reduced by the mediator. The addition of age salience, reciprocal self-disclosure, and quantity of contact did not change the association between relationship type and stereotyping. Thus, H7 and H9 were not supported.

Discussion

Three key findings surface from Study 2. First, there is a similar level of support for the ASI model (Hummert, 1994; Hummert et al., 2004) as emerged in Study 1, and it generally appears for the same variables. Specifically, physique of older adult and relationship type again appear as central predictors of stereotyping, and their relationship with age-adapted communication behaviors is fully mediated by stereotyping. In contrast, closeness of relationship influences age-adapted communication behaviors in ways that are not mediated by stereotyping. Quality of contact is replaced as a predictor in Study 2 by age salience, which is related to age-adapted communication behaviors in ways that are not mediated by stereotyping. Age of the older adult did not emerge as an important variable in either study, a result that is consistent with the ASI model.

Second, with regard to the changes implemented for Study 2, the addition of self-disclosure and age salience did not affect the association between relationship type (grandparent or acquaintance) and stereotyping in the ways predicted by H7 and H9. Hence, the question of why relationship type predicts stereotyping remains unanswered. We view this as an important theoretical issue. Understanding why people might stereotype grandparents differently from acquaintances will provide important information about differences between intergenerational communication within and outside the family. A productive avenue for addressing these issues might be to examine issues of shared group identification or role expectations as a result of the family membership.

Third, the addition of reciprocal self-disclosure and age salience, while not yielding quite the results expected, did produce some interesting findings. Self-disclosure significantly predicted age-adapted communication behaviors, but did not predict stereotyping of older adults. Furthermore, reciprocal self-disclosure did not differ significantly across type of relationship. The reciprocal self-disclosure measure is reported communication behavior, so it is possible that some of that variable's influence on age-adapted communication behaviors is due to some redundancy in the measures. Despite this possible overlap, reciprocal self-disclosure appears to be tapping into other important characteristics about the relationship itself that influences the presence or absence of accommodative communication behaviors.

Greater age salience significantly predicted age-adapted communication behaviors, but it did not predict stereotyping (see Table 6). The degree to which age was perceived to be salient, however, did not differ significantly across relationship type. This finding was unexpected. Gaertner et al.'s (2000) common ingroup identity model would suggest that family provides a potential "common ingroup" for grandparents and grandchildren—and therefore the importance of age differences in the relationship

would be reduced compared to acquaintances or strangers. Our results imply instead that respondents viewed grandparents and older acquaintances alike as members of a different age group. Even though this finding could be an artifact of focusing participants' attention on their relationship with an older person, it also may reflect the powerful role of age cues in person perception (Brewer & Lui, 1989; Milord, 1978). We also note that this study did not measure the presumed opposite of age salience in Gaertner's model: respondents' shared family (ingroup identity) with grandparents and shared identities with acquaintances (e.g., members of same congregation). Shared family identity may vary greatly within a family or between family members. Future research should explore the variables which moderate the extent to which a grandparent is viewed as an ingroup member on the family dimension and the ways in which shared family identity is related to age salience.

GENERAL DISCUSSION

The current studies were limited in that they were based on self-reports, used a convenience sample of younger respondents, and did not measure the context in which the encounters occurred. In contrast, the ASI model focuses on predicting actual age-adapted communication behavior, not merely self-reports of behavior. The ASI model also includes the age of the perceiver and the situational context as factors relevant to positive or negative age stereotyping. Our interest in the role of relational processes in intergenerational communication has nevertheless revealed some interesting implications for future theorizing and research, suggesting that the relational context and its associated communication behaviors may be important influences neglected by prior research.

Overall, the results of the two studies indicate that the stereotyped perceptions, closeness of relationship, reciprocal self-disclosure, and age salience are key predictors of age-adapted communication behaviors in reported intergenerational interactions within existing relationships. In both studies, health of the older adult and relationship type are central to invoking stereotypes. The replication of most of these findings across two studies gives us confidence that future research should examine these variables in detail. Future work should continue to examine the mediational role of stereotyping, which is clearly valid, although more complex than previously considered, in that some variables' influence on age-adapted communication is not mediated.

Our data, however, also offer convincing evidence that more attention should be paid to relational variables in the study of intergenerational communication. Relational closeness is a stable predictor of stereotyping,

relational depth (as indexed by self-disclosure) appears to influence reports of other age-adapted communication behaviors in interesting ways, and the type of relationship (grandparent or acquaintance) continued to explain variance in stereotyping, even when other variables were added in an attempt to eliminate its effects. In other words, we see a central role for relational variables in models of intergenerational communication and view their inclusion as essential to understanding real-world interactions between older and younger people. Incorporation of relational variables is especially important if the models are to describe adequately the GP–GC relationship, the most common intergenerational interaction for younger adults with older adults (Ng et al., 1997; Williams & Giles, 1996).

At the same time, we strongly endorse the idea that group memberships and collective cognitions are operating and crucially important in this context. The interesting findings that emerged concerning age salience and the central role played by stereotyping reinforce this belief. In other words, as we attempt to include relational variables in future theoretical models of the intergenerational relationship, this should not be done at the expense of losing the key role played by group cognitions (Harwood et al., in press). In this, we strongly endorse current trends toward considering the role played by traditional interpersonal–relational and intergroup variables simultaneously (Mackie & Smith, 1998; Pettigrew & Tropp, 2000). In most aspects of our lives, we do indeed deal with each other simultaneously as individuals and as representatives of various groups and collectives. It is time for our models to incorporate both of those aspects.

REFERENCES

Banker, B. S., & Gaertner, S. L. (1998). Achieving stepfamily harmony: An intergroup–relations approach. *Journal of Family Psychology, 12*, 310–325.

Baranowski, M. D. (1982). Grandparent-adolescent relations: Beyond the nuclear family. *Adolescence, 15*, 575–584.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research. *Journal of Personality and Social Psychology, 51*, 1173–1182.

Bonnesen, J. L., & Hummert, M. L. (2002). Painful self-disclosures of older adults in relation to aging stereotypes and perceived motivations. *Journal of Language and Social Psychology, 21*(3), 275–301.

Brewer, M. B., Dull, V., & Lui, L. (1981). Perceptions of the elderly: Stereotypes as prototypes. *Journal of Personality and Social Psychology, 41*, 656–670.

Brewer, M. B., & Lui, L. (1984). Categorization of the elderly by the elderly. *Personality and Social Psychology Bulletin, 10*, 585–595.

Brewer, M. B., & Lui, L. (1989). The primacy of age and sex in the structure of person categories. *Social Cognition, 7*, 262–274.

Brussoni, M. J., & Boon, S. D. (1998). Grandparental impact in young adults' relationship with their closest grandparents: The role of relationship strength and emotional closeness. *International Journal of Aging and Human Development, 46*, 267–286.

Burleson, B. R. (1984). Age, social-cognitive development, and the use of comforting strategies. *Communication Monographs, 51*, 140–153.

Burleson, B. R., & Caplan, S.E. (1999). Cognitive complexity. In J. C. McCroskey, J. A. Daly, & M. M. Martin (Eds.), *Communication and personality: Trait perspectives* (pp. 233–284). Cresskill, NJ: Hampton Press.

Burleson, B. R., & Waltman, M. S. (1988). Cognitive complexity: Using the Role Category Questionnaire Measure. In C. H. Tardy (Ed.) *A handbook for the study of human communication* (pp. 1–35). Norwood, NJ: Ablex.

Cai, D., Giles, H., & Noels, K. (1998). Elderly perceptions of communication with older and younger adults in China. *Journal of Applied Communication Research, 26*, 32–51.

Caporael, L. R. (1981). The paralanguage of caregiving: Baby-talk to the institutionalized aged. *Journal of Personality and Social Psychology, 40*, 867–884.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale, NJ: Erlbaum.

Coupland, N., Coupland, J., Giles, H., Henwood, K., & Wiemann, J. (1988). Elderly self-disclosure: Interactional and intergroup issues. *Language and Communication, 8*, 109–131.

Crockett, W. H. (1965). Cognitive complexity and impression formation. In B. A. Maher (Ed.), *Progress in experimental personality research* (Vol.II, pp. 47–91). New York: Academic Press.

Gaertner, S. L., Dovidio, J. F., Nier, J. A., Banker, B. S., Ward, C. M., Houlette, M., & Loux, S. (2000). The common ingroup identity model for reducing intergroup bias. In D. Capozza & R. Brown (Eds.), *Social identity processes: Trends in theory and research* (pp. 133–148). London: Sage.

Giles, H., Coupland, N., & Coupland, J. (1991). Accommodation theory: Communication, context, and consequence. In H. Giles, J. Coupland, & N. Coupland, (Eds.), *Contexts of accommodation: Developments in applied linguistics* (pp. 1–68). Cambridge, UK: Cambridge University Press.

Giles, H., Henwood, K., Coupland, N., Harriman, J., & Coupland, J. (1992). Language attitudes and cognitive mediation. *Human Communication Research, 18*, 500–527.

Goodman, L. A. (1960). On the exact variance of products. *Journal of the American Statistical Association, 55*, 708–713.

Hale, N. M. (2000). Effects of age and interpersonal contact on stereotyping of the elderly. *Current Psychology: Developmental, Learning, Personality, Social, 17*, 28–47.

Hamilton, D. L., & Trolier, T. K. (1986). Stereotypes and stereotyping: An overview of the cognitive approach. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 127–163). Orlando, FL: Academic Press.

Harwood, J. (2000). Communicative predictors of solidarity in the grandparent–grandchild relationship. *Journal of Social and Personal Relationships, 17*, 743–766.

Harwood, J. (2004). Relational, role, and social identity as expressed in grandparents' personal web sites. *Communication Studies, 55*, 268–286.

Harwood, J., Hewstone, M., Paolini, S., & Voci, A. (2005). Grandparent–grandchild contact and attitudes towards older adults: Moderator and mediator effects. *Personality and Social Psychology Bulletin, 31*, 393–406.

Harwood, J., & Lin, M-C. (2000). Affiliation, pride, exchange and distance in grandparents' accounts of relationships with their college-age grandchildren. *Journal of Communication, 50*(3), 31–47.

Harwood, J., McKee, J., & Lin, M.-C. (2000). Younger and older adults' schematic representations of intergenerational conversations. *Communication Monographs, 67*, 20–41.

Harwood, J., Ryan, E. B., Giles, H., & Tysoki, S. (1997). Evaluations of patronizing speech and three response styles in a nonservice-providing context. *Journal of Applied Communication Research, 25*, 170–195.

Harwood, J., Soliz, J., & Lin, M.-C. (in press). Communication accommodation theory: An intergroup approach to family relationships. In D. O. Braithwaite & L. Baxter (Eds.), *Family communication theories*. Thousand Oaks, CA: Sage.

Harwood, J., & Williams, A. (1998). Expectations for communication with positive and negative subtypes of older adults. *International Journal of Aging and Human Development, 47*, 11–33.

Hummert, M. L. (1990). Multiple stereotypes of elderly and young adults: A comparison of structure and evaluations. *Psychology and Aging, 5*, 183–193.

Hummert, M. L. (1994). Stereotypes of the elderly and patronizing speech. In M. L. Hummert, J. M. Wiemann, & J. F. Nussbaum (Eds.), *Interpersonal communication in older adults: Interdisciplinary research* (pp. 162–184). Newbury Park, CA: Sage.

Hummert, M. L., Garstka, T. A., & Shaner, J. L. (1995). Beliefs about language performance: Adults' perceptions about self and elderly targets. *Journal of Language and Social Psychology, 14*, 235–259.

Hummert, M. L., Garstka, T. A., & Shaner, J. L. (1997). Stereotyping of older adults: The role of target facial cues and perceiver characteristics. *Psychology and Aging, 12*, 107–114.

Hummert, M. L., Garstka, T. A., Shaner, J. L., & Strahm, S. (1994). Stereotypes of the elderly held by young, middle-aged and elderly adults. *Journal of Gerontology: Psychological Sciences, 49*, 240–249.

Hummert, M. L., Garstka, T. A., Ryan, E. B., Bonnesen, J. L. (2004). The role of age stereotypes in interpersonal communication. In J. F. Nussbaum & J. Coupland (Eds.), *Handbook of communication and aging research* (2nd ed.) (pp. 91–115). Mahwah, NJ: Erlbaum.

Hummert, M. L., & Shaner, J. L. (1994). Patronizing speech to the elderly as a function of stereotyping. *Communication Studies, 45*, 145–158.

Hummert, M. L., Shaner, J. L., Garstka, T. A., & Henry, C. (1998). Communication with older adults: The influence of age stereotypes, context, and communicator age. *Human Communication Research, 25*, 125–152.

Judd, C. M., & Kenny, D. A. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation Review, 5*, 602–619.

Kemper, S., & Harden, T. (1999). Experimentally disentangling what's beneficial about elderspeak from what's not. *Psychology and Aging, 14*, 656–670.

Lancely, A. (1985). Use of controlling language in the rehabilitation of the elderly. *Journal of Advanced Nursing, 10*, 125–135.

Laurenceau, J.-P., Barrett, L. F., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process. *Journal of Personality and Social Psychology, 74*, 1238–1251.

Linville, P. W. (1982). The complexity-extremity effect and age-based stereotyping. *Journal of Personality and Social Psychology, 42*, 193–211.

Lin, M.-C., Harwood, J., & Bonnesen, J. L. (2002). Topics of conversation in the Grandparent–Grandchild relationship. *Journal of Language and Social Psychology, 21*, 302–323.

Mackie, D. M., & Smith, E. R. (1998). Intergroup relations: Insights from a theoretically integrative approach. *Psychological Review, 105*, 499–529.

Mannarino, A. P. (1976). Friendship patterns and altruistic behavior in preadolescent males. *Developmental Psychology, 12*, 555–556.

Milord, J. T. (1978). Aesthetic aspects of faces: A (somewhat) phenomenological analysis using multidimensional scaling methods. *Journal of Personality and Social Psychology, 36*, 205–216.

Montepare, J. M., & Zebrowitz-McArthur, L. A. (1988). Impressions of people created by age-related qualities and their gaits. *Journal of Personality and Social Psychology, 55*, 547–556.

Ng, S. H., Liu, J. H., Weatherall, A., & Loong, C. F. (1997). Younger adults' communication experiences and contact with elders and peers. *Human Communication Research, 24*, 82–108.

Nussbaum, J. F., & Bettini, L. (1994). Shared stories of the grandparent–grandchild relationship. *International Journal of Aging and Human Development, 39*, 67–80.

Parker, J. G., & Gottman, J. M. (1989). Social and emotional development in a relational context. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relationships in child development* (pp. 95–131). New York: John Wiley.

Pecchioni, L. L., & Croghan, J. M. (2002). Young adults' stereotypes of older adults with their grandparents as the targets. *Journal of Communication, 52*(4), 715–730.
Pettigrew, T. (1998). Intergroup contact theory. *Annual Review of Psychology, 49*, 65–85.
Pettigrew, T. F. & Tropp, L. (2000). Does intergroup contact reduce prejudice? Recent meta-analytic findings. In S. Oskamp (Ed.), *Reducing prejudice and discrimination: Social psychological perspectives* (pp. 93–114). Mahwah, NJ: Erlbaum.
Pierce, G. R. (1994). The quality of relationships inventory: Assessing the interpersonal context of social support. In B. R. Burleson, T. L. Albrecht, & I. G. Sarason (Eds.), *Communication of social support: Messages, interactions, relationships and community* (pp. 247–266). Thousand Oaks, CA: Sage.
Pierce, G. R., Sarason, I. G., & Sarason, B. R. (1991). General and relationship-based perceptions of social support. *Journal of Personality and Social Psychology, 61*, 1028–1039.
Reis, H. T., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. Duck (Ed.), *Handbook of personal relationships* (pp. 367–389). Chichester, UK: Wiley.
Richards, Z., & Hewstone, M. (2001). Subtyping and subgrouping. *Personality and Social Psychology Review, 5*, 52–73.
Ryan, E. B., Giles, H., Bartolucci, G., & Henwood, K. (1986). Psycholinguistic and social psychological components of communication by and with the elderly. *Language and Communication, 6*, 1–24.
Ryan, E. B., Kwong See, S., Meneer, W. B., & Trovato, D. (1992). Age-based perceptions of language performance among young and older adults. *Communication Research, 19*, 423–443.
Schmidt, D. F., & Boland, S. M. (1986). The structure of impressions of older adults: Evidence for multiple stereotypes. *Psychology and Aging, 1*, 255–260.
Scott, W. A. (1955). Reliability of content analysis. *Public Opinion Quarterly, 19*(3), 321–325.
Silverstein, M., & Parrott, T. M. (1997). Attitudes toward public support of the elderly: Does early involvement with grandparents moderate generational tensions? *Research on Aging, 19*, 108–132.
Soliz, J., & Harwood, J. (2003). Communication in a family relationship and the reduction of intergroup prejudice. *Journal of Applied Communication Research, 31*, 320–345.
Williams, A., & Giles, H. (1996). Intergenerational conversations: Young adults' retrospective accounts. *Human Communication Research, 23*, 220–250.
Williams, A., & Nussbaum, J. F. (2001). *Intergenerational communication across the lifespan*. Mahwah, NJ: Erlbaum.