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# An Exploratory Study of Relational, Persuasive, and Nonverbal Communication in Requests for Tissue Donation

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*This study explores the effects of tissue requesters' relational, persuasive, and nonverbal communication on families' final donation decisions. One thousand sixteen (N = 1,016) requests for tissue donation were audiotaped and analyzed using the Siminoff Communication Content and Affect Program, a computer application specifically designed to code and assist with the quantitative analysis of communication data. This study supports the important role of communication strategies in health-related decision making. Families were more likely to consent to tissue donation when confirmational messages (e.g., messages that expressed validation or acceptance) or persuasive tactics such as credibility, altruism, or esteem were used during donation discussions. Consent was also more likely when family members exhibited nonverbal immediacy or disclosed private information about themselves or the patient. The results of a hierarchical log-linear regression revealed that the use of relational communication during requests directly predicted family consent. The results provide information about surrogate decision making in end-of-life situations and may be used to guide future practice in obtaining family consent to tissue donation.*

Family consent is a critical factor in tissue transplantation just as it is for solid organ donation. Whereas organ donation consent rates currently average 50–60% (Siminoff, Arnold, & Hewlett, 2001; Siminoff, Mercer, Graham, & Burant, 2007), estimates for tissue donation consent range from 35% to 81%, depending on the type of tissue requested (Geissler, Paoli, Maitrejean, & Durand-Gasselin, 2004; Haire & Hinchliff, 1996; Lawlor, Dobbins, Thomas, & Billson, 2006; Pont et al., 2003; Siminoff, Arnold, Caplan, Virnig, & Seltzer, 1995). Nearly 30,000 donors provide tissue for more than 2,000,000 tissue grafts in the United States each year (American Association of Tissue Banks, 2010). Donated tissue may be used in a variety of life-saving and life-enhancing capacities including skin grafts to help prevent infection and fluid loss for burn victims and heart valves to repair or replace diseased

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or defective valves (Kent, 2007; Rodrigue, Scott, & Oppenheim, 2003). Similarly, corneal tissue is used to stave off or cure blindness and donated bone, cartilage, and tendons improve or restore mobility (Kent; Rodrigue et al.).

However, the current rates of consent to tissue donation are paradoxically low given that the pool of potential tissue-eligible donors is much larger than the approximately 18,500 brain dead potential organ donors (Sheehy et al., 2003). The pool of potential tissue donors includes both individuals eligible for solid organ donation and patients who have died outside the hospital setting (e.g., in personal residences, nursing homes, or hospices), in acute care settings, or of heart failure (Kent, 2007). It is estimated that tens of thousands of potential tissue donors are lost each year through poor identification and request practices (Evans, Orians, & Ascher, 1992). Research that elucidates the factors affecting consent is crucial to increasing the number of potential tissue donors converted to actual donors and to saving and improving American lives.

## The Communication in Requests for Donation

A growing body of evidence has demonstrated the effect of organ procurement organization requesters' communicative behaviors on family consent to solid organ donation (Frutos et al., 2005; Haddow, 2004; Rodrigue, Cornell, & Howard, 2006; Siminoff, Gordon, Hewlett, & Arnold, 2001; Siminoff et al., 2009). It stands to reason that tissue requesters' communication practices are also influential on tissue donation behaviors. Watzlavick, Beavin, and Jackson (1967) contend that purposeful communication, like that of obtaining consent to tissue donation, has two overarching functions—*report* and *command*. The report function serves to exchange information, whereas the command function signifies status, involvement, intimacy, and a host of other aspects of the relationship between interactants (Watzlawick et al.). A major challenge for tissue requesters is providing families with enough information in a comprehensible, compassionate manner such that decisions are informed and voluntary.

Another challenge for requesters is identifying the need for and successfully using strategies of interpersonal influence to persuade families who are initially unsure or unfavorable toward tissue donation to consider donation. Persuasion comes in many forms including the evocation of emotion and appeals to reason; it need not be manipulative or coercive (Beauchamp & Childress, 1989). Such strategies may take the form of persuasive arguments for donation (Campbell, 1996) or compliance-gaining tactics that can motivate families to consent by invoking feelings of altruism or obligation without arousing guilt or fear (Marwell & Schmitt, 1967). Indeed, simple refutation or correction of myths or wrongly held beliefs about donation is a form of persuasion that, when used appropriately, may lead to increased rates of family consent (Winkel & Huismans, 1986). If used incorrectly, attempts to persuade families to donate may backfire and strengthen antidonation sentiment and/or result in refusal (Boster, Levine, & Kazoleas, 1993; Kazoleas, 1993). Thus, an understanding of how and when to apply persuasive tactics during requests is critical to obtaining family consent.

In addition to managing the report aspects discussed earlier, requesters must also foster and maintain a professional relationship with tissue-eligible patients' families. Relational communication such as expressions of dominance, formality, composure, immediacy, receptivity, and similarity continually change the way

tissue requesters and families "view each other, their relationship, and themselves within the context of the relationship" and may ultimately affect the outcome of the request (Burgoon & Hale, 1984; Burgoon et al., 1987, p. 308). Although these relational elements may be communicated through verbal confirmations or validations and acceptance of family members' opinions, thoughts, and feelings (Laing, Phillipson, & Lee, 1966; Rogers, 1957), they are most often communicated nonverbally (Ekman & Friesen, 1969; Harrigan & Rosenthal, 1986). For instance, immediacy (i.e., interpersonal closeness or liking; Mehrabian, 1966) is largely communicated via tone and inflection of voice, rate of speech, and hesitancy (Richmond & McCroskey, 1987). This is of particular importance because at least half of requests for tissue are made by telephone (Gain et al., 2002; Geissler et al., 2004; Rodríguez-Villar et al., 2007). This situation is the result of the lengthy time permitted between a person's death and procurement of eligible tissue (up to 48 hours after a patient's death).

## Relational, Persuasive, and Nonverbal Communication and the Decision to Donate

Although the information exchanged during requests for tissue donation has garnered some attention in recent years (Department of Health and Human Services, Office of the Inspector General, 2001; Haire & Hinchliff, 1996; Hoeyer, Olofsson, Mjörndal, & Lynöe, 2004; National Donor Family Council and National Kidney Foundation, 2000; Rodrigue et al., 2003), there is a dearth of research on the use and effects of relational, persuasive, and nonverbal communication in requests for tissue donation. However, past research has demonstrated the importance of relational and nonverbal communication in other health care contexts. Richmond et al. (2001), for example, found strong positive relations between health care providers' nonverbal immediacy and patient satisfaction with the physician and the medical care received. In addition, studies by Hall and colleagues (Hall, Horgan, Stein, & Roter, 2002; Hall, Roter, & Rand, 1981) have highlighted the effect physicians' affect has on these same outcomes. Numerous studies have also observed associations between physicians' interpersonal skills (e.g., sensitivity, partnership building, empathy, concern) and improved patient cooperation and adherence to a prescribed medical regimen, and improved symptom recovery, anxiety, and pain (for reviews, see Stewart et al., 1999; Street, 2003).

Studies examining the use of persuasive strategies in prodonation messages on donation-related behaviors have found positive effects as well. For example, research by Ford and Smith (1991) supported refutational messages over one-sided messages in motivating college students to sign organ donor cards. Reinhart, Marshall, Feeley, and Tutzauer (2007) tested the effects of altruistic and guilt appeals (i.e., message framing) on a university student sample. Over three studies, students receiving a gain-framed message about organ donation (i.e., altruistic appeal) were more likely to register or enroll as an organ donor than students reading a loss-framed message (i.e., guilt appeal). Research examining the use of narrative (i.e., anecdotal account) and statistical (i.e., numeric information) messages promoting organ donation has been inconclusive. Whereas work by Kopfman, Smith, Ah Yun, and Hodges (1998) found support for statistically oriented prodonation messages, Feeley, Marshall, and Reinhart's (2004) study found no difference between statistical or narrative messages on students' behavior. Although these studies focus on the

individual's intent to become an organ donor by indicating such on an organ donor card or enrolling on a registry, rather than the decision to donate tissue made by a surrogate decision maker at the time of a patient's death, these findings are applicable here. Indeed, research by Siminoff and colleagues (Siminoff, Arnold, et al., 2001; Simonoff, Gordon, et al., 2001; Siminoff et al., 2007, 2009) and others (Batten & Prottas, 1987) indicates that tactics such as the persuasive argument and refutation increase the likelihood of family consent to solid organ donation.

This study sought to explore whether and how relational, persuasive and nonverbal communication affected consent to tissue donation. Specifically, we use a unique data set of audiorecorded requests for tissue donation to identify the aspects of tissue requesters' and family decision makers' relational, persuasive, nonverbal communication associated with family consent to tissue donation.

## Method

### *Study Sites*

Sixteen tissue procurement organizations were randomly selected to participate in this study; all agreed to the collaboration. The organizations varied by type (e.g., organ procurement organization or tissue bank), catchment area (e.g., regional or national), and the use of an outside service organization for family contact and requests. The participating organizations collectively request donations from the families of more than 20,000 tissue-eligible patients in 16 states each year. Specifically, two tissue organizations were located in the northeast, four in the southeast, three in the Midwest, five in the southwest, and two in the northwest.

Data collection activities spanned from February 2004 through February 2006. Because of the large volume of requests for tissue donation made each year, each month the study sites were randomly assigned data collection days. As is standard procedure at most organ and tissue procurement organizations, all requests for donation were audiorecorded for quality assurance purposes. Data collection entailed obtaining the audiorecordings made on each organization's designated data collection days.

### *Tissue Requester and Family Decision Maker Sample*

Tissue bank and organ procurement organization staff who requested donation from the families of deceased patients on data collection days comprised the requester sample. Family members making the final decision to donate were identified through requester call logs. A random sample of family decision makers was sent letters explaining the purpose of the study and requesting permission for the collection and analysis of the audiorecorded requests. In all, 1,016 (43.2%) family decision makers agreed to participate and also gave permission for use of the audiotaped requests; of those, 606 (59.6%) had consented to tissue donation and 410 (40.4%) had refused. The study was approved by the appropriate institutional review board and informed consent was obtained from tissue requesters and family decision makers.

### *Data Coding*

The audiorecorded requests for tissue were timed and coded using the Siminoff Communication Content and Affect Program (SCCAP), a program designed specifically for the purpose of coding and analyzing conversational data (Siminoff

& Step, 2011). Seven coders were extensively trained in the use of SCCAP and application of the coding definitions over a period of 3 months. Coders assigned each utterance made by requesters and family decision makers to 1 of 10 content codes corresponding to the information being exchanged. Table 1 displays the content codes and definitions. An *utterance* was defined as a speech segment containing a single thought or idea (Ong, De Haes, Hoos, & Lammes, 1995). Each utterance was then classed as 1 of 18 communication types (see Tables 2 and 3). Communication types were grouped as relational or persuasive, depending on whether the utterance attempted to provide confirmation or disconfirmation of the other party, or convince the decision maker to consent to donation.

Confirmational communication recognizes and validates another person's sense of self (Laing et al., 1966) and includes, among other behaviors, approvals, reassurances, apologies, and positive laughter (Siminoff & Step, In press). Sarcastic, defensive, or offensive statements or disagreement between the requester and family member were coded as *disconfirmation*. Interruptions and use of personal examples, by both parties, were also coded as measures of *relational communication*. Codes for persuasive communication included the use of persuasive arguments, refutations, the foot-in-the-door strategy (Freedman & Fraser, 1966), credibility, and emotional

**Table 1.** Siminoff communication content and affect program content codes and definitions

| Content domain | Coding definition |
|---|---|
| Introduction (self) | Introduction of tissue requester (name, title, role, etc.). |
| Introduction (topics) | Topics discussed at the beginning of the conversation, including the reason for the call, condolences, cause and circumstances of death. |
| Today's call | Purpose of the call, amount of time needed for discussion, next-of-kin's comfort level, etc. |
| Tissue | Mention/discussion of specific tissues in relation to donation or procurement (skin, whole eye, cornea, heart valves, etc.). |
| Basic donation information | Introductory donation information such as autopsy issues, the costs of donation, storage and processing, distribution, procurement, etc. |
| Consent form | Discussion of the legal consent document with next of kin. |
| Uses of donated tissue | Discussion of the use of donated tissue for cosmetic purposes, treatment of disease or injury, research, to save lives, etc. |
| Psychosocial donation information | Talk of the next of kin's emotional state, cultural, religious or spiritual beliefs, or funeral issues, treatment of the body during procurement. |
| Medical history | Review of the patient's medications, illnesses/diseases, surgeries, transplantations, etc. |
| Social history | Review of the patient's drug/alcohol/tobacco use, sexual history, occupational history, travel, tattoos/piercings, etc. |

**Table 2.** Relational communication types and definitions

| Communication type | Coding definition |
|---|---|
| Confirmation | |
| Partnership | Statement or affect that conveys alliance between the tissue requester or Tissue Bank and families.<br>*"You're not in this alone"; "We'll get you through the donation process together."* |
| Approval | Requester provides agreement or indications that the decision maker is doing the right thing and/or expressions of gratitude.<br>*"That's ok that you said no"; "This is a generous gift."* |
| Reassurance | Statements that are in response to fear or concern, and/or alleviate anxiety.<br>*"We would treat (patient) with the utmost respect."* |
| Repetition | Statements repeated for emphasis or clarity.<br>*"Like I said, I work as a liaison with the hospital."* |
| Legitimize | Indicates decision makers' emotions or behaviors are understandable and/or normal.<br>*"A lot of people feel that way."* |
| Concern | An emotional response that recognizes the scope of the situation.<br>*"How are you and your family doing?"* |
| Laughter | Jokes or moments of laughter.<br>*Requester: "It [skin] is, it is..." NOK: "For burn patients?" Requester: "Oh, you're good."* |
| Empathy | Requesters' statements that paraphrase, interpret, recognize, or name decision makers' emotional state.<br>*"I understand that it is a long, detailed process to go through at such a difficult time."* |
| Apology | Requesters' admissions of error or discourtesy that are accompanied by expressions of regret.<br>*"I apologize for missing our call earlier."* |
| Offer of service | Requester offers a service, above and beyond the normal scope of duty (e.g., call coroner).<br>*"I'll get in touch with the hospital for you."* |
| Disconfirmation | |
| Disapproval | Requesters' expressions of disagreement or difference related to values, beliefs, thoughts, or opinions of family member; use of sarcastic, offensive, or defensive statements by either requester or family member.<br>*"You don't want to do bone donation?" (incredulous)* |

appeals (e.g., esteem, guilt, altruism). Coding for the aforementioned communication types and each of the following communicative elements was performed as they occurred throughout each audiorecorded donation discussion. For all scales, item scores were summed to create a composite score; higher scores indicate greater levels of each measured variable.

**Table 3.** Persuasive strategies and definitions

| Persuasive strategy | Coding definition |
|---|---|
| Argument | Factual statements by the tissue requester that indicate expertise, evidence, or reference a value system.<br>*"That [skin] would go to help burn victims heal because they have no skin of their own . . ."* |
| Refutation | Factual responses of the tissue requester that seek to dispel myths held by the decision maker.<br>*"No, you will still be able to have an open casket at the funeral."* |
| Altruism | Reference to helping others, or to being unselfish, generous, or providing a gift.<br>*"He'll be able to help 30 to 40 other people."* |
| Esteem | Remarks by the tissue requester on the self-worth or self-integrity of the decision maker.<br>*"I think you are a really good person for donating."* |
| Guilt/debt | Statements made by the requester that point out the negative consequences of not donating.<br>*"If you don't donate, many will die."* |
| Credibility | Requester attempts to gain trust by citing affiliation, professional credentials, or goodwill.<br>*"I'm a family support coordinator and I work on behalf of [Tissue Bank]."* |
| Foot in the door | Requester immediately follows a small request with a larger one.<br>*"The tissues you've consented for are tissues to be used for transplant, to transplant to other recipients. Are you interested in donating any tissues for research purposes?"* |

Coders rated three dimensions of requesters' and family members' nonverbal communication: immediacy, comfort, and affect. Requesters' nonverbal immediacy (e.g., degree of closeness) was assessed using six 7-point Likert-type items. The items measured requesters' rate of speech, level of intonation, spontaneity, clarity, dominance, and hesitancy, with the endpoints reflecting unusually low and high levels of each item and the midpoint reflecting normal levels. The scale was collapsed to 4 points ranging from 1 (*nonnormal*) to 4 (*normal*). Decision makers' immediacy was assessed using five of the six items used for requesters; spontaneity was not assessed for family members. Internal consistency reliability as estimated from coefficient alpha (Cronbach's $\alpha$) for both scales was poor ($\alpha = .24$). Subsequent factor analyses revealed a three-factor solution for requesters: clarity/control ($\alpha = .48$), rate/hesitancy ($\alpha = .26$), and monotone/spontaneity ($\alpha = .11$), with reliabilities ranging from moderate to low. For decision makers, the factor analysis yielded mixed results, with clarity and control loading ($>0.40$) on multiple factors. Therefore, we conceptualized these items as heterogeneous characterizations of nonverbal immediacy for both requesters and family decision makers.

Requesters' comfort introducing donation, providing donation-related information, and answering questions was rated with three 7-point scales. We used a

similar two-item scale to assess decision makers' comfort responding to donation- and procurement-related information during the requests. Requesters' and decision makers' comfort scores ranged from 3 to 21 ($\alpha = .85$; $M = 17.81$, $SD = 2.40$) and 2 to 14 ($\alpha = .63$; $M = 11.10$, $SD = 2.10$), respectively.

We used eight 7-point scales to rate tissue requesters' and decision makers' affective tone (e.g., irritation, compassion, engagement, sincerity, dominance, friendliness, animation, expressiveness) during the donation discussion. Because the scales represented a continuum from unusually low levels to unusually high, the scales were collapsed. Item scores for requesters' and decision makers' affective tone ranged from 7 to 28; internal consistency reliabilities for the scales were 0.70 ($M = 30.28$, $SD = 6.21$) and 0.76 ($M = 26.03$, $SD = 9.91$), respectively.

Requesters' direct communication, encouragement of talk, and use of fillers and inclusive pronouns were coded as measures of verbal communication. Each item was assessed using a 4-point Likert-type scale; item scores ranged from 4 to 16 ($\alpha = .47$; $M = 6.78$, $SD = 1.64$). We assessed family decision makers' verbal communication using three items: direct communication, use of fillers, and use of inclusive pronouns. We used the same 4-point scale described earlier; item scores ranged from 3 to 12 ($\alpha = .34$; $M = 9.88$, $SD = 2.17$).

Last, tissue requesters' relational communication skill was measured using a shortened, 14-item version of Burgoon and Hale's (1987) relational communication scale. This measure of relational communication is distinguished from that described earlier in that the former is a function of each utterance made by either the tissue requester or family decision maker. This measure assesses tissue requesters' relational communication abilities. The scale items were sampled from five of Burgoon and Hale's (1984) original 12 dimensions: dominance, trust, composure, involvement, and task orientation; these items were chosen for their applicability to the tissue request scenario. We used a 7-point Likert-type scale of agreement for each item. Scores for requesters' communication skill ranged from 14 to 98 ($\alpha = .89$; $M = 72.63$, $SD = 12.39$).

### *Interrater Reliability*

A sample of 50 (5%) audiotapes was randomly chosen for double coding and evaluation of rater reliability. After initial coding was completed, a second, randomly assigned coder independently rated each tape. All coders received training in the SCCAP as described earlier. Interrater reliability was assessed through percent agreement and averaged .88 for the content codes, communication types, and comfort ratings, and .85 and .77 for affect and immediacy ratings, respectively (Siminoff & Step, 2011). SCCAP has also been used to assess patient–provider communication in oncology consultations with similarly high levels of reliability (Siminoff, Step, & Rose, 2008).

### *Statistical Analysis*

We used frequency counts and measures of central tendency to characterize the relational communication exhibited by tissue requesters and family decision makers during tissue donation requests. To compare tissue requesters' communication with families who consented to donation to that of families who ultimately refused,

we used a chi-square test for nominal- or ordinal-level data, and Student's $t$ test for interval- or ratio-level data.

We performed a hierarchical log-linear regression to examine the relation between (a) family consent to tissue donation and (b) requesters' and decision makers' sociodemographic and communication characteristics. The analysis was chosenfor its ability to account for the nested sampling scheme (e.g., family decision makers nested within tissue requesters and tissue requesters nested within tissue banks) while controlling for the time requesters' spent discussing donation with families. The analysis began with the creation of eight factors representing conceptual domains for the independent variables. Because decision makers who refused to donate spent little time interacting with requesters, many ($n = 207$) were unable to provide assessments of requesters' relational communication skill. We performed multiple imputation (Rubin, 1987) to construct a complete data set. We then used bivariate techniques to identify variables having significant associations with consent; only these were retained for use in subsequent steps of the analysis. We performed separate linear and logistic regression analyses, regressing the consent variable on each domain. This resulted in eight variables representing the estimated probability of consent for each domain. Each variable was transformed into a dichotomous variable, using its median as a cut point. We performed a hierarchical log-linear analysis to analyze the interrelations between these eight dichotomous variables and consent to tissue donation. In addition, we performed a second analysis using the nonimputed data set for comparison. Analyses were conducted using SPSS (Version 16.0) for Windows and SAS (Version 9.2).

## Results

### *Sample*

Table 4 presents tissue requesters' and family decision makers' sociodemographic characteristics. Of the 226 requester participants, the majority were female (68.1%) and Caucasian (77.0%), with a mean age of 34.3 years (range = 21–67 years). Requesters were almost evenly divided between single (45.2%) and married (42.9%) participants. A plurality reported their religious affiliation as Protestant (37.6%) followed by Catholic (27.9%). Requesters had a mean of 15.6 years of education (range = 12–26 years); half (50.4%) of the requesters had a degree in a health-related field. On average, requesters had 18 months of job experience (median = 8 months; range = < 1 month–17 years). The majority of family decision makers were also Caucasian (83.3%), female (72.2%), and Protestant (50.3%). On average, decision makers were 52.1 years of age (range = 18–91 years) with 13.9 years of education (range = 5–22 years). Nearly half of the decision makers sampled reported their marital status as widowed (47.9%). Most decision makers also reported yearly incomes in excess of $30,000 (72.4%).

### *Donation Discussions*

The tissue donation consent rate was 59.6% ($n = 606$). Requests for donation ranged from 1 to 240 minutes, with a median duration of 20 minutes ($M = 14.6$ minutes; $SD = 3.13$). Consenting families spent considerably more time discussing donation

**Table 4.** Tissue requester and family decision maker characteristics

| Demographic characteristic* | Tissue requester ($n = 226$) | Family decision maker ($n = 1{,}016$) |
|---|---|---|
| Age (years) | | |
| *M* (*SD*) | 34.3 (9.6) | 52.1 (13.6) |
| Gender | | |
| Male | 72 (31.9%) | 262 (25.8%) |
| Female | 154 (68.1%) | 733 (72.2%) |
| Race | | |
| White | 172 (76.1%) | 846 (83.3%) |
| Non-White | 54 (23.9%) | 169 (16.7%) |
| Marital status | | |
| Single | 102 (45.2%) | 75 (7.4%) |
| Married/cohabit | 97 (42.9%) | 345 (34.0%) |
| Divorced/separated | 27 (11.9%) | 95 (9.4%) |
| Widowed | 0 (0.0%) | 477 (47.0%) |
| Religion | | |
| Protestant | 85 (37.6%) | 511 (50.3%) |
| Catholic | 63 (27.9%) | 231 (22.8%) |
| Other | 44 (19.5%) | 138 (13.6%) |
| None | 34 (15.0%) | 135 (13.3%) |
| Education (years) | | |
| *M* (*SD*) | 15.6 (1.9) | 13.9 (2.4) |
| Health-related degree | | |
| Yes | 114 (50.4%) | — |
| No | 112 (49.6%) | — |
| Experience (months) | | |
| *M* (*SD*) | 18.0 (25.1) | — |

*Values expressed as count (percentage) unless noted otherwise.

than did families who refused ($M = 21.9$ minutes, $SD = 14.6$ versus $M = 3.6$ minutes, $SD = 3.6$; $t(711) = 29.6$, $p < .001$, Cohen's $d = .08$).[1]

### *Relational Communication in Tissue Requests*

Relational communication, in the form of confirmational or disconfirmational messages, was found in 968 (95.3%) donation discussions. On average, 4.5 ($SD = 2.3$) relational messages were used per request; decision makers who consented to donation received more relational messages than did those who refused ($M = 5.4$, $SD = 2.5$ versus $M = 3.0$, $SD = 2.0$; $t(973) = 16.8$; $p < .001$, $d = .03$). Donation discussions with families ultimately consenting to donation also included significantly more confirmational messages than did discussions with family members who refused ($M = 5.2$, $SD = 2.3$ versus $M = 2.8$, $SD = 2.0$; $t(965) = 18.1$, $p < .001$, $d = .04$; see Table 5). Requesters commonly attempted to assuage families' fears or

[1]The observed drop in degrees of freedom was a consequence of a significant Levene's test (e.g., the assumption of equality of variances was not met).

**Table 5.** Communication content codes, by donation decision

| Content domain | Family consented | Family refused | Test statistic | *p* | Effect size |
|---|---|---|---|---|---|
| Confirmational messages* | 5.2 (2.3) | 2.8 (2.0) | 18.1 | <.001 | .04 |
| Reassurance | 488 (79.9) | 123 (20.1) | 260.4 | <.001 | .51 |
| Laughter | 355 (83.5) | 70 (16.5) | 173.2 | <.001 | .41 |
| Concern | 393 (76.8) | 119 (23.2) | 125.6 | <.001 | .35 |
| Repetition | 400 (72.3) | 153 (27.7) | 81.2 | <.001 | .28 |
| Apology | 374 (72.1) | 145 (27.9) | 68.0 | <.001 | .26 |
| Approval | 401 (69.4) | 177 (30.6) | 52.6 | <.001 | .23 |
| Partnership | 143 (78.6) | 39 (21.4) | 33.0 | <.001 | .18 |
| Offer of service | 195 (72.0) | 76 (28.0) | 23.3 | <.001 | .15 |
| Legitimize | 110 (70.5) | 46 (29.5) | 9.0 | .003 | .09 |
| Empathy | 300 (62.5) | 180 (37.5) | 3.1 | .08 | — |
| Disconfirmational messages* | 0.5 (1.5) | 0.5 (1.0) | 0.01 | .99 | — |
| Disagreement/disapproval | 138 (22.8) | 122 (29.8) | 6.3 | .01 | .08 |
| Tissue requester | | | | | |
| Communication skill* | 79.3 (8.9) | 73.3 (10.0) | 9.9 | <.001 | .02 |
| Nonverbal immediacy* | | | | | |
| Intonation | 2.81 (0.68) | 2.83 (0.66) | 0.36 | .72 | — |
| Rate of speech | 3.16 (0.75) | 3.18 (0.70) | 0.42 | .67 | — |
| Spontaneity | 2.88 (0.75) | 2.77 (0.79) | 2.2 | .03 | .00 |
| Clarity | 2.83 (0.85) | 2.90 (0.84) | 1.2 | .24 | — |
| Control | 2.76 (0.77) | 2.94 (0.78) | 3.6 | <.001 | .01 |
| Hesitancy | 2.42 (0.72) | 2.38 (0.85) | –.71 | .48 | — |
| Comfort* | 18.1 (2.4) | 17.4 (2.4) | 4.6 | <.001 | .01 |
| Affect* | 30.1 (6.2) | 27.9 (6.1) | 5.4 | <.001 | .01 |
| Verbal communication* | 10.4 (1.9) | 9.1 (2.2) | 10.2 | <.001 | .03 |
| Self-disclosure | 85 (91.4) | 8 (8.6) | 42.9 | <.001 | .21 |
| Interruptions | 399 (65.8) | 207 (34.2) | 57.9 | <.001 | .24 |
| Decision maker | | | | | |
| Nonverbal immediacy* | | | | | |
| Intonation | 2.92 (0.73) | 3.01 (0.73) | 2.0 | .05 | .00 |
| Rate of speech | 3.36 (0.60) | 3.34 (0.61) | –.43 | .67 | — |
| Clarity | 3.08 (0.76) | 3.05 (0.78) | –.68 | .50 | — |
| Control | 3.25 (0.64) | 3.10 (0.77) | –3.4 | .001 | .01 |
| Hesitancy | 2.55 (0.82) | 2.42 (0.92) | –2.4 | .02 | .00 |
| Comfort* | 11.8 (1.8) | 10.1 (2.2) | 12.5 | <.001 | .03 |
| Affect* | 26.5 (10.2) | 25.4 (9.4) | 1.8 | .08 | — |
| Verbal communication* | 7.1 (1.5) | 6.2 (1.6) | 8.9 | <.001 | .02 |
| Self-disclosure | 178 (80.9) | 42 (19.1) | 52.8 | <.001 | .23 |
| Maker interruptions | 412 (68.0) | 194 (32.0) | 42.4 | <.001 | .20 |

*Values expressed as *M* (*SD*); Student's *t* test statistic; Cohen's *d*. All other values expressed as count (percentage); chi-squared test statistic; phi ($\varphi$).

concerns (i.e., reassurance, 60.1%), expressed approval of family members' donation decision or gratitude for consenting to donation (56.9%), emphasized or clarified statements using repetition (54.4%), offered apologies (51.1%), or expressed concern (50.4%). Last, tissue requesters' relational communication skills were also important. Skillful requesters were more likely to obtain family consent than were those who were rated as less skilled in relational communication ($M = 79.3$, $SD = 8.9$ versus $M = 73.3$, $SD = 10.0$; $t(808) = 9.9$, $p < .001$, $d = .02$).[2] Disconfirmation (i.e., disapproval) was found in approximately one quarter (25.6%) of the donation discussions. We found no significant difference in the mean number of disconfirmational messages received between families consenting to tissue donation and those refusing to donate ($t(1012) = .01$, $p = .99$). However, when disconfirmation was used, families were more likely to refuse donation than consent (29.8% vs. 22.8%; $\chi^2 = 6.3$, $p = .01$, $\varphi = .08$).

Tissue requesters interrupted or cut off family decision makers while speaking less often than decision makers interrupted requesters (25.6% vs. 59.7%; $\chi^2 = 32.1$, $p < .001$, $\varphi = .18$). In addition, families were significantly more likely to consent when the requester never interrupted the family decision maker (65.8% vs. 34.2%; $\chi^2 = 57.9$, $p < .001$, $\varphi = .24$). Conversely, the likelihood of consent increased when decision makers interrupted the requester (68.0% vs. 32.0%; $\chi^2 = 42.4$, $p < .001$, $\varphi = .20$).

Tissue requesters and family decision makers disclosed personal information in 93 (9.2%) and 220 (21.7%) requests, respectively. Of interest is that when requesters related personal stories or anecdotes, families were significantly more likely to consent than to refuse (91.4% vs. 8.6%; $\chi^2 = 42.9$, $p < .001$, $\varphi = .21$). Similarly, consent occurred more often when family members disclosed personal information about themselves or about the patient (80.9% vs. 19.1%; $\chi^2 = 52.8$, $p < .001$, $\varphi = .23$).

### *Nonverbal Communication in Tissue Requests*

Family members' and requesters' nonverbal communication (e.g., nonverbal immediacy, comfort, affect) during donation discussions was also assessed (see Table 5). Nonverbal immediacy represents the level of closeness generated by the participants during a communication event. Two characteristics of requesters' nonverbal immediacy were related to consent: spontaneity and control. Requesters exhibiting more spontaneity during donation discussions were significantly more likely to obtain consent to tissue donation, as compared with requesters who were less spontaneous ($M = 2.77$; $SD = 0.79$; $t(1,014) = 2.22$, $p = .03$, $d = .00$). Conversely, requesters exhibiting high levels of control ($M = 2.94$, $SD = 0.78$) were less likely to obtain consent than were those who were less controlling ($M = 2.76$, $SD = 0.77$; $t(1,014) = 3.60$, $p < .00$, $d = .01$). Examination of decision makers' nonverbal immediacy revealed three statistically significant associations with consent. Specifically, family members exhibiting more intonation were less likely to donate tissue ($M = 3.01$, $SD = 0.73$) than those who did not ($M = 2.92$, $SD = 0.73$; $t(1,014) = 1.97$, $p = 0.05$, $d = .00$). However, decision makers displaying more conversational

[2]Families who refused to donate held significantly shorter discussions about donation with tissue requesters. As such, many ($n = 209$) felt they were unable to answer questions regarding the tissue requester's relational communication skill. Hence, a degrees of freedom of 809.

control ($M = 3.25$, $SD = 0.64$ vs. $M = 3.10$, $SD = 0.77$) and hesitancy ($M = 2.55$, $SD = 0.92$ vs. $M = 2.42$, $SD = 0.82$) were more likely to donate ($t(1,014) = -3.43$, $p = .001$, $d = .01$; and $t(1,014) = -2.39$, $p = .02$, $d = .00$, respectively). The remaining measures of requesters' and decision makers' nonverbal immediacy were not statistically associated with family consent.

Requesters and family decision makers demonstrated high levels of comfort during the donation discussions. Requesters who obtained family consent displayed higher levels of comfort than did those who did not when introducing donation, providing donation-related information and answering family members' questions ($M = 18.1$, $SD = 2.4$ vs. $M = 17.4$, $SD = 2.4$; $t(1014) = 4.62$, $p < .001$, $d = .01$). In addition, family members consenting to donation displayed greater comfort than did family members who refused consent when responding to donation- and procurement-related information ($M = 5.8$, $SD = 1.0$ vs. $M = 5.3$, $SD = 1.2$; $t(752) = 12.5$, $p < .001$, $d = .03$).[3]

Requesters' affect, or emotional content of the donation discussions, was also associated with consent (see Table 5); the more overall affect exhibited, the more likely decision makers were to agree to donation ($M = 30.1$, $SD = 6.2$ vs. $M = 27.9$, $SD = 6.1$; $t(1014) = 5.4$, $p < .001$, $d = .01$). Specifically, requesters who exhibited more compassion, involvement, sincerity, dominance, friendliness, and verbal expressiveness in donation discussions were more successful at obtaining consent to donation. No significant difference was found in the global affect scores of family members who consented and those who refused ($t(1014) = 1.8$, $p = .08$), although family members who were rated as more involved in the donation discussion and more sincere, friendly, animated and expressive were significantly more likely to donate.

### *Persuasive Communication in Tissue Requests*

We thought that tissue requesters might use persuasive tactics during requests to convince or encourage family members to consent (see Table 6). Overall, some form of persuasive communication was found in 68.8% of the requests ($n = 699$). The most commonly used tactic requesters used was "credibility strategy," wherein tissue requesters initiated the conversation by establishing credibility and suggesting that the family wanted or expected to be phoned about donation (49.3%). Requesters also attempted to persuade families to donate by referring to the altruistic nature of donation (26.6%), or by arguing in favor of donation through the use of factual statements (10.6%) or refutations of false information (10.5%). The foot-in-the-door tactic occurred in 86 (8.5%) requests. Requesters using this persuasive strategy followed a request for a specific type of tissue or of tissue for a specific use with a larger request of additional types of tissue or tissue for other uses. Strategies that evoked feelings of guilt (5.9%) or positive self-esteem (1.7%) were used less often.

Although we found no significant differences in the frequency of requesters' overall use of persuasive communication between donors and nondonors ($t(1014) = 1.10$, $p = .27$), there were significant differences in consent when certain tactics were used. Specifically, families were significantly more likely to consent when either the credibility or the foot-in-the-door strategies were used and when requesters commented on the family decision maker's altruistic nature or integrity (e.g., esteem).

[3]See Note 1.

**Table 6.** Persuasive communication content codes, by donation decision

| Content domain | Family consented | Family refused | Test statistic | *p* | Effect size |
|---|---|---|---|---|---|
| Persuasive* | 1.6 (1.8) | 1.5 (1.7) | 1.1 | .27 | — |
| Foot in the door | 84 (97.7) | 2 (2.3) | 56.5 | .000 | .24 |
| Altruism | 192 (71.1) | 78 (28.9) | 20.1 | .000 | .14 |
| Credibility | 268 (53.5) | 233 (46.5) | 15.5 | .000 | .12 |
| Esteem | 14 (82.4) | 3 (21.4) | 3.7 | .05 | .06 |
| Persuasive argument | 61 (56.5) | 47 (43.5) | 0.5 | .48 | — |
| Refutation | 55 (51.4) | 52 (48.6) | 3.4 | .07 | — |
| Guilt/debt | 39 (65.0) | 21 (35.0) | 0.8 | .38 | — |

*Values expressed as *M* (*SD*); Student's *t* test statistic. All other values expressed as count (percentage); chi-squared test statistic; phi ($\varphi$).

### *Effects on Consent*

We performed a hierarchical log-linear regression to examine the interrelations among factors (see Table 7 for a full list of variables constituting each factor) representing eight domains we hypothesized were associated with consent to tissue donation. Table 8 presents the results of this analysis. The results revealed that six of the eight factors were directly related to consent. The strongest association was found between the time spent discussing donation and consent. Families spending more time engaged in conversation about donation were nine times more likely to donate (adjusted odds ratio = 9.10; 95% confidence interval = 5.83–14.19). Similarly,

**Table 7.** Variables constituting factors used in the hierarchical log-linear regression analyses

| Factors | Variables |
|---|---|
| 1. Decision maker sociodemographics | Gender, race, age, education, religion |
| 2. Tissue requester sociodemographics | Gender, race, age, experience, degree, marital status, religion |
| 3. Decision maker tissue donation attitudes | Attitudes toward tissue donation, willing to donate tissue, signed organ donor card/license |
| 4. Decision maker communication | Affect, comfort, self-disclosure, nonverbal immediacy, verbal communication |
| 5. Tissue requester communication | Relational communication skill, affect, comfort, self-disclosure, nonverbal immediacy, verbal communication |
| 6. Relational communication | Partnership, approval, reassurance, repetition, legitimize, concern, laughter, empathy, apology, offer of service, disapproval (disconfirmation) |
| 7. Persuasive communication | Argument, refutation, altruism, esteem, guilt/debt, foot in the door, threat |
| 8. Time | Time discussing tissue donation |

**Table 8.** Results of hierarchical log-linear regression

| Significant two-way interactions in model* | Adjusted odds ratio† | 95% confidence interval |
|---|---|---|
| Time – consent | 9.10 | [5.83, 14.19] |
| Relational communication – time | 4.13 | [2.84, 6.00] |
| Relational communication – consent | 3.98 | [2.68, 5.92] |
| Tissue requestor communication – decision maker communication | 3.92 | [2.94, 5.22] |
| Decision maker tissue donation attitudes – consent | 3.47 | [2.59, 4.64] |
| Decision maker communication – consent | 3.11 | [2.16, 4.48] |
| Tissue requestor communication – time | 2.12 | [1.50, 2.98] |
| Decision maker sociodemographics – decision maker tissue donation attitudes | 1.86 | [1.42, 2.44] |
| Persuasive communication – time | 1.78 | [1.12, 2.83] |
| Decision maker sociodemographics – consent | 1.73 | [1.30, 2.29] |
| Persuasive communication – consent | 1.66 | [1.02, 2.74] |
| Relational communication – persuasive communication | 1.64 | [1.12, 2.41] |
| Tissue requestor communication – relational communication | 1.58 | [1.15, 2.18] |
| Tissue requestor communication – decision maker tissue donation attitudes | 1.47 | [1.13, 1.93] |
| Time – decision maker communication | 1.44 | [1.00, 2.08] |

*Factors were examined in relation to each other and the donation decision. Only statistically significant interactions are reported.

†Adjusted odds ratio is the odds ratio after controlling for other factors in the model.

donation discussions exhibiting increased relational and persuasive communication were four and three times more likely to result in donation, respectively, than discussions in which relational and persuasive communication occurred less frequently. In addition, decision makers' sociodemographic characteristics and tissue donation attitudes were positively associated with consent as were the verbal and nonverbal aspects of decision makers' communication. We also found significant associations among the individual factors. We found only one difference when the regression was repeated using a smaller data set in which subjects with missing values were removed ($n = 809$). In this analysis, the relation between the persuasive communication factor and consent was not statistically significant.

## Discussion

This study is the first to examine elements of relational, persuasive and nonverbal communication during requests for tissue donation using a unique data set of actual conversations between requesters and family decision makers. Our results highlight the importance of relational and persuasive communication in this context. The results of the bivariate analyses and of the regression analyses support the use of relational communication and persuasive tactics during donation discussions to

improve consent to tissue donation. Other elements of decision makers' and requesters' communication, including self-disclosure and interruptions, were also related to consent. Consistent with past research in organ donation, decision maker sociodemographic characteristics and tissue donation attitudes as well as the time discussing donation were also predictive of consent (Rodrigue et al., 2006; Siminoff, Gordon, et al., 2001). This offers evidence of the reliability of these findings.

Although the sum total use of confirmational messages during requests for donation was highly significant, it had a negligible effect on consent. However, we found specific categories of confirmational communication to have considerable effects on consent. We found the largest effect sizes for reassurance, laughter, and concern. Thus, requesters who demonstrated concern for decision makers and their families, who were comfortable discussing the topic and/or interacting with family members enough to incorporate light banter and/or humor into requests, and who appropriately addressed decision makers' concerns were most likely to obtain consent. Table 2 offers examples of requesters' statements in each category. Repeating information, for emphasis or clarity (i.e., repetition), offering apologies for a faux pas committed by the requester, making statements in support of decision makers' thoughts or behaviors (i.e., approval), and offering allegiance (i.e., partnership) or assistance (i.e., offer of service) also increased the likelihood of family consent, although with a smaller effect. These findings are not surprising given the context in which requests for donation are made. As noted previously, families are presented with the option of donation up to 48 hours after the death of a family member. This is at a time of high levels of stress, anxiety, and grief for families (Haddow, 2004; Pelletier, 1992; Sque & Payne, 1996). This research suggests that decision makers respond positively to request staff who exhibit supportive and comforting communicative behaviors during requests.

The research also points to a positive relation between self-disclosure and consent. Although we found few instances of requesters' or decision makers' disclosure of personal information in the discussions examined in this research, the results demonstrated such disclosures increased the likelihood of consent. Revealing personal information likely facilitated the development of liking and trust between the two interactants (Collins & Miller, 1994). We examined only one dimension of self-disclosure (i.e., the amount). Altman and Taylor (1973) and others (Tardy, Hosman, & Bradac, 1981; Wheeless, 1978; Wheeless & Grotz, 1976) contend that self-disclosure is multidimensional. Thus, future research examining self-disclosure in this context should also measure its intentionality, depth, valence.

A similar statement might be made about the occurrence of interruptions during requests. Interruptions positively affected consent, but only when made by decision makers. Interruptions serve a multitude of purposes, both positive and negative. For example, they may function as power displays used to control the course of the conversation (Ferguson, 1977; Hawkins, 1991); alternately, interruptions may also signal rapport, spontaneity, engagement in the conversation and acknowledgement of the speaker and his or her ideas (Goldberg, 1990; Hurley, 1981; Kennedy & Camden, 1983). This is another avenue for future research as it is unclear why requesters and decision makers may have interrupted one another.

Although we found disconfirmational messages in almost a third of the donation discussions, and a significant bivariate association between their use and consent, we would be remiss to overlook discussion of our conceptualization and operationalization of this construct. Disagreements or differences related to values, beliefs,

thoughts or opinions occurring in the donation discussions as well as the use of sarcastic, defensive, or offensive statements were coded as disapproval or disconfirmation. The use of only one coding option for the variety of behavioral manifestations of disconfirmation listed earlier is a limitation of this research. In addition, the original version of SCCAP was not designed to identify the message producer for this communication type. Although these issues have been resolved in the latest version of the SCCAP software, disconfirmation may have come from either the requester or the decision maker, in any of the aforementioned forms. Thus, the findings may simply be an artifact of our conceptualization and measurement of disconfirmational messages. Future research should seek to clearly define and operationalize the various types of disconfirmational communication that may be found in donation discussions.

The command aspects (e.g., nonverbal immediacy, affect) of requesters' and decision makers' communication, had significant, but negligible effects on consent as well. We found these same results for requesters' and decision makers' comfort during requests. Recall that these constructs were observer-rated along 7-point Likert-type scales of agreement. Alternate operationalizations of these variables may have yielded different results. For instance, rate of speech might have been quantified as the number of syllables or utterances per unit time (e.g., seconds, minutes; Goldman-Eisler, 1958). Sillars and Parry (1982) used this as a measure of speech rate and hesitancy. These authors also measure hesitancy as a function of response rate, or the average length of time a speaker takes to begin talking. We recommend that future investigations use more direct measures of nonverbal communication or incorporate multiple measures that may be verified through triangulation.

The results of the regression analyses yielded mixed results regarding the association between the use of persuasive communication and consent. Furthermore, although we found no association between the sum total use of persuasive communication in requests and consent, we found significant associations or three specific persuasive tactics. By far, the most effective persuasive tactic was the foot-in-the-door strategy. Requesters employing this strategy followed a large request for tissue with a smaller request for tissue of a different type or use. Table 3 provides an example of a requester's effective use of each suasory tactic. Appeals to requesters' credibility and to the altruistic nature of donation were also effective, but to a much lesser degree. (See Table 3 for examples of the use of these tactics as well.) Although common sense and past research examining the effects of persuasive tactics on organ donation hint at a positive relation between persuasive communication and consent, additional research in this area is warranted.

It is surprising that appeals to reason (i.e., the persuasive argument) and refutation of misinformation about tissue donation were not associated with family consent. That these tactics were found in only a fraction of requests may explain this finding. Fewer persuasive strategies were put to use with families who ultimately refused donation as well. This is likely because donation discussions with families who ultimately refused donation were considerably shorter in length than were the conversations with families who consented. This suggests, however, that requesters are failing to seize the opportunity to persuade families who may be either unsure of or unfavorable toward donation to donate. Thus, it is critical that requesters keep families engaged in the donation discussion long enough to identify and address the source of families' reluctance to donate. Because so many refusals happen within the first few minutes of the approach, requesters skilled in relational communication

may be best poised to establish a productive, sustained dialogue with surrogate decision makers. Future researchers might explore the specific timing of the use of relational and persuasive communication during requests. Opening requests for tissue with offers of service, support and/or comfort, for instance, may prove fruitful in converting likely refusers into donor families.

Given the results of the present research, the use of relational and persuasive communication during requests for tissue donation warrant further investigation. These combined results also point to a need for improving tissue requesters' relational and persuasive communication skills. The already difficult task of obtaining consent to tissue donation is exacerbated by the need to contact most families by telephone. Tissue requesters must not only provide decision makers with information about tissue donation and its benefits, they must also foster and maintain a relationship of trust, demonstrate care and concern, exhibit empathy,and, when necessary, choose among a variety of tactics to persuade families to donate. Training programs that emphasize these communicative elements may help increase the number of families consenting to tissue donation. For the best results, training might combine didactic information on the best practices for obtaining consent with active strategies, such as role playing, to reinforce the new skills (Davis, Thomas, Oxman, & Haynes, 1992, 1995).

Another potential limitation of the study is the number of minorities represented in the sample. Of the 1,016 family members participating in the research, only 16.7% were non-White—10.6% were of African American descent and 6.1% were Asian or multiracial. Although this is representative of the demographic profile of the United States (U.S. Census Bureau, 2000), future studies might attempt to deliberately oversample minorities.

Whereas the present research had some limitations, as indicated earlier, the SCCAP program provided a wealth of reliable data on the communicative behaviors of family decision makers and tissue requesters during donation discussions. Moreover, this is the first study to obtain and use a large sample of recorded requests for tissue donation for research purposes. This allowed examination of relational, persuasive, and nonverbal communication as they naturally occurred in these discussions. Using this data set, a comprehensive coding system, and sophisticated data reduction techniques, we were able to present a holistic picture of these three overarching forms of communication during donation discussions along with their effect on family consent.

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