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THE INTERPERSONAL PROCESS AND PREDICTORS OF CONSENT IN TISSUE  
DONATION REQUESTS

A dissertation submitted in partial fulfillment of the requirements for the degree of  
Doctor of Philosophy at Virginia Commonwealth University

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## **Abstract**

### **THE INTERPERSONAL PROCESS AND PREDICTORS OF CONSENT IN TISSUE DONATION REQUESTS**

By Lindsey Dorflinger, M.S.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2011.

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The present study examined the interpersonal process during tissue donation requests and evaluated demographic and interpersonal/behavioral predictors of consent or refusal to donate. One hundred and two audiorecordings of tissue donation requests were evaluated using several different observer measures of interpersonal behavior and decision making. Results showed that tissue requesters (TRs) and next-of-kin (NOKs) tended to match one another's level of affiliation, and complemented one another on interpersonal dominance. TRs infrequently used negative or disapproving statements during the request, but when they did NOKs were less friendly, more disapproving, and more likely to express concern. Overall there were few differences in interpersonal behavior as a function of demographic variables, however female NOKs and those with more education were perceived as more affiliative, and TRs with more



experience used more statements of approval and support during requests than those with less experience. There were also few differences in interpersonal behavior related to gender or race “match” between TRs and NOKs. Consistent with hypotheses, results showed significant correlations between positive/collaborative behavior of the TR and NOK. Logistic regressions were used to examine predictors of consent or refusal to donate. NOKs were more likely to consent to donation when they were themselves more willing to donate their own tissues or organs, and when TRs did not use negative/disapproving statements, asked fewer questions, were more supportive, and discussed with NOKs that donation would not result in mutilation or significant change to the deceased’s body. The findings suggest that each interactant’s interpersonal behavior during tissue donation requests elicits certain responses from the other, and that some interpersonal variables significantly predict the NOKs donation decision. The findings indicate that training for tissue requesters that addresses interpersonal behavior and discussion of certain key topics may impact consent rates.

## The Interpersonal Process and Predictors of Consent in Tissue Donation Requests

In general, the majority of the population supports the idea of tissue and organ donation (Rocheleau, 2001; Radecki & Jaccard, 1997; Sanner, 2006; Lopes, 1990). However, the level of public support for tissue donation alone in situations in which organ donation is not an option is uncertain because there has been a dearth of research on this subject. Most studies of donation assess public support and frequency of consent only for organ donation, perhaps because it is more commonly viewed as lifesaving and therefore considered a more significant gift to the recipient as well as a bigger sacrifice for the family of the deceased. The lack of research on tissue donation, as well as the lack of public education campaigns to inform communities about the needs for and uses of donated tissues, is unfortunate because families are more often offered a chance to donate tissues than organs; whereas organs must be procured while the patient is officially brain dead but on a respirator (Sanner, 2006) (a relatively uncommon situation for the family to find itself in), tissues are generally procured within 24 hours after the patient expires (Southeast Tissue Alliance, 2009).

Despite the lack of research and public knowledge about tissue donation, tissue transplantation is becoming more frequent. Tissue banks accredited by the American Association of Tissue Banks (AATB) distribute approximately two million allografts and transplant one million tissues from more than 30,000 donors each year (AATB, 2011). Transplanted tissue has many uses. For example, donated bone can replace bone damaged by injury or disease, such as cancer, veins can be used in femoral and coronary bypass surgeries, skin can help treat burn patients, and corneas can be transplanted for patients with corneal blindness or to help treat glaucoma (SETA, 2009). Tissues that are recovered that are not

suitable for transplantation can be used for research and education. They provide excellent training materials for future physicians and surgeons as there are substantial benefits to learning on, for example, the human eye vs. substituted practice materials (Dixon, 2009). However, priority is given to transplantation, and tissues are used for research and education only if transplantation is not possible and if the family consents to their use in this manner.

There is a large discrepancy between the number of organs needed and the number of organs donated annually. As a result every year patients on waiting lists pass away because of the lack of available organs for transplant (Siminoff, Lawrence, & Arnold, 2003; Rocheleau, 2001; Shanteau & Harris, 1990). Although there is little research focused specifically on the need for and donation of tissues, it has been reported that several thousand Americans are on waiting lists for cornea transplants, and tens of thousands are on waiting lists for other types of tissue, such as skin, bone, and heart valves (Caplan, Siminoff, Arnold, & Virnig, 1991). Research on predictors of consent to donation is therefore valuable because it can inform researchers and organ and tissue procurement organizations of which individuals and families are most likely to donate and why, and which groups of individuals should be targeted in the future for educational and informational campaigns about donation. Past research suggests that demographic characteristics, knowledge of the deceased's wishes regarding donation, topics discussed during the request and discussion with the next-of-kin, and the communication process between the family and requester are all related to the family's likelihood of donation of organs. However, very little research has focused on how these factors relate to the likelihood of donating tissue.

The current study will attempt to further our knowledge of how the tissue donation request process and the interaction between the tissue requester and the deceased's next-of-kin relate to either consent or refusal to donate tissue. More specifically, the study will examine the

nature of the interaction between requester and next-of-kin and will examine how the interpersonal relationship and decision-making process (drawing on the literature on patient-physician decision-making) affect the family's decision to consent to or refuse donation.

### **Discrepancies in Support for Donation, Donation Status, and Family Consent for Donation**

The majority of the population supports organ and tissue donation (Rocheleau, 2001; Radecki & Jaccard, 1997; Sanner, 2006; Lopes, 1990). However, large discrepancies exist among individuals' feelings regarding the future donation of their own tissues and organs, and actual donation intention status, such as signing a donor card or indicating in a legal document that one requests that their tissues and organs be donated if the opportunity arises. While the majority of Americans support donation and would like to be the recipient of a donation if the need arises, only about half feel positively about donating their own organs and tissues (Radecki & Jaccard, 1997; Sanner, 2006) and only about one-fourth have signed a donor card or registered as a donor at the DMV (Sanner, 2006; Christmas, Burris, Bogart, & Sing, 2008).

Further, many individuals are much more likely to be hesitant when considering donating the organs or tissues of a loved one, and feel less positively about donating loved ones' organs and tissues than about donating their own (Sanner, 2006). This hesitancy may be related to a lack of knowledge about loved ones' preferences regarding organ donation, and next-of-kin may feel that when they are unsure of the deceased's wishes the "safe" alternative is to refuse donation. Research suggests that when donation preference is unknown, the majority of individuals feel that donation should not take place (Harris, Jasper, Shanteau, & Smith, 1990). In fact, one study reports that 20% of families do not even consider how the deceased may have felt about donation when considering consent or refusal of a donation request, with most of these families ultimately refusing donation (Siminoff & Lawrence, 2002). Unfortunately, this results

in a significant loss of potential tissues, as many individuals never discuss donation beliefs and preferences with their families (Rocheleau, 2001; Rubens, 1996; Radecki & Jaccard, 1997).

In most states there are now first-person consent laws in place which assure that individuals who indicate their desire to be a donor either on their license or through other formal means of documentation do indeed become donors if eligible. The failure to follow the individual's wishes as indicated by a signed donor card can be viewed as a violation of the individual's autonomy. In cases in which the deceased has not signed documentation of intention to be a donor but has expressed desire to be a donor in the past to family members, the next-of-kin is still the decision-maker regarding donation. Since the majority of the population has not signed documentation regarding preferences about being a donor, more often than not the next-of-kin must make a decision regarding donation if the deceased was eligible to be a donor.

### **Donation Requests**

There are 58 organ procurement organizations (OPOs) in the United States, all of which are required to be members of the national Organ Procurement and Transplantation Network. Each OPO is assigned by the government to a specific geographical region, and each OPO is responsible for procurement requests at all hospitals in its given region (Nathan et al., 2003). In the past, hospitals and health care providers tended to be the ones to identify eligible donors and speak with families; however, health care providers could not reliably identify which patients were eligible for donation, did not always approach families of eligible patients, and were less likely to gauge the family's interest correctly and obtain consent than were experienced requesters. In 1998 legislation was passed requiring hospitals to notify their OPO about all deaths so that an experienced requester from the OPO could speak with all families of eligible donors about donation (Nathan et al., 2003).

Unfortunately, because recovery of tissues must take place no more than 24 to 48 hours after death, the donation request must take place during what is typically a very sensitive and upsetting time for families. Research has shown that when OPOs make donation requests as opposed to physicians or other health care workers, consent rates are higher - likely in part because of the training OPOs receive about making such a request while remaining sensitive to the family's emotional state (Rocheleau, 2001). How soon the requester approaches the family, how sensitive the requester is to the family's emotional needs, and the level of family support have all been shown to influence decision making about donation (Harris et al., 1990).

There are several factors that comprise the donation request process, including information provision, answering families' questions, and, if the family agrees, completing a consent form and medical and behavioral history questionnaire. Throughout this process the requester should remain supportive and sensitive to the family's needs. The information provision and question-asking aspects of the donation request are of particular importance not only because they precede the family decision about donation, but also because the family often has misconceptions that can be addressed or concerns that can be alleviated regarding donation. Past research suggests that when families consider the risks and benefits of donation when the deceased's wishes are unknown, especially when the perceived risks/drawbacks are inflated or misunderstood, families often conclude that the risks are too high (Shanteau & Harris, 1990). For example, families may believe that organ and tissue procurement results in bodily mutilation or disfigurement. Families can thus be informed that every effort is made to avoid mutilation, that tissues such as bones and eyes are replaced with prostheses to maintain the shape of the body, that skin is procured only from areas such as the back and the legs to allow the family to have an open casket viewing, and that overall, organ and tissue procurement is less invasive than

a standard autopsy (Rocheleau, 2001; Siminoff, Gordon, Hewlett, & Arnold, 2001). When the requester takes the time to explain these facts to the next-of-kin, the next-of-kin is more likely to donate than when fears of body disfigurement are not discussed (DeJong et al., 1998). Families may also have concerns about the likelihood of transplantation of donated organs and tissues (Rosel, Frutos, Blanca, & Ruiz, 1999). A study by Skowronski (1997) found that participants thought that donated organs and tissues were more likely to be used for research or not used at all than transplanted to a recipient, and that willingness to donate increased as the reported estimate of probability of transplantation increased. This suggests that informing the next-of-kin of the emphasis placed on transplanting donated organs and tissues whenever possible could allay the next-of-kin's fears and increase the consent rate for donation. It should be emphasized that although discussion about specific aspects of donation, such as mutilation and distribution, can affect donation decisions, requests in which the information is provided in a sensitive and tactful manner are more likely to result in consent to donation (Harris et al., 1990). The impact of interpersonal factors between requestor and next-of-kin will be discussed in greater detail below.

It should be noted that there are some differences between the organ and tissue donation processes that have led to some controversy and changes in the informed consent process for tissue donation. For example, whereas organs are typically transplanted quickly and without any alterations to the donated organ, tissues must often undergo alterations to size and shape (e.g., bones) to match the recipient's needs and can be stored until they are needed rather than going directly to a recipient. In addition, although all organ procurement organizations are required to be not-for-profit, some agencies involved in the chain of distribution of tissues (tissue banks, processors, and distributors) may be for-profit (Siegel et al., 2009). After an in-depth review by the Inspector General, it was recommended that tissue requests include more comprehensive

informed consent processes to ensure that next-of-kin understand the facts, and to provide next-of-kin with the option to choose which tissues to donate and decide whether non-transplantable tissues can be used for education or research purposes (Siegel et al., 2009).

### **Predictors of Donation**

Past research has identified predictors of consent to donation, though most studies focus on organ rather than tissue donation. Several demographic factors have been found to significantly predict donation, with race being the most commonly researched variable. Research consistently finds that Caucasian individuals are more likely than minority individuals to report that they are willing to donate their own tissues and organs, and are more likely to donate the tissues and organs of loved ones (Rocheleau, 2001; Radecki & Jaccard, 1997; Siminoff, Mercer, Graham, & Burant, 2007; Siminoff & Arnold, 1999, Siminoff et al., 2001; Siminoff et al., 2003). Siminoff and colleagues (2003) conducted a study to determine differences between Caucasian and African American families' beliefs and request-related experiences that might explain the difference in donation rates. African American families were less likely to have discussed the patient's donation preferences before death, know the patient's wishes about donation, and think that the patient would have wanted to donate. Caucasian families were more likely to have discussed how donation would have no monetary cost to the family and that funeral arrangements would not be affected, both facts that could increase the likelihood of consent. There were also differences between African American and Caucasian families' level of trust in the health care system, with Caucasians more likely to believe that organs would be distributed in an unbiased and just manner. Finally, African American families reported feeling more surprised by the request and more harassed and pressured to make a decision than did Caucasian families. Siminoff and colleagues (2003) emphasized the need for



these issues to be addressed in order to reduce the racial discrepancy in consent to donation. A review by Radecki and Jaccard (1997) reported that individuals of Asian and Hispanic descent are also less likely to donate than are Caucasian individuals. Other demographic predictors have been identified as well. Higher education appears to be related to increased willingness to donate (Radecki & Jaccard, 1997; Rocheleau, 2001; Rosel et al., 1999; Sanner, 2006), though there are mixed findings about the relationship between socioeconomic status and likelihood of consent to donation (Siminoff et al., 2007; Siminoff et al., 2003; Radecki & Jaccard, 1997; Schaeffer, Johnson, Suddaby, Suddaby, & Brigham, 1998).

Very little research has been conducted on the effects of requester gender and ethnicity on family consent to donation. Baughn, Auerbach, & Siminoff (2010) found in a study of simulated organ donation scenarios that male organ procurement coordinators were perceived as being more dominant than female procurement coordinators, and that simulated family members were more controlling and less affiliative when interacting with a female procurement coordinator. In addition, African American procurement coordinators were perceived as being more dominant than were Caucasian coordinators. Female African American procurement coordinators were perceived as significantly more controlling and less likely to engage in shared decision making when compared to male African American procurement coordinators. In addition, there appeared to be a “matching” effect for ethnicity: African American procurement coordinators expressed more positive affect when interacting with an African American vs. Caucasian family, while Caucasian procurement coordinators expressed more positive affect when interacting with a Caucasian vs. African American family. Although there is no other empirical research bearing on this topic, these findings suggest that requester gender and ethnicity may affect the interpersonal relationship, which in turn may affect request outcomes.

As discussed above, the discussion of certain topics predicts donation, such as the effect of donation on funeral arrangements, cost to the family, distribution of organs and/or tissues, body disfigurement, knowledge of patient's wishes regarding donation, and the presence or absence of a signed donor card. However there are other factors about the donation request process itself that may be related to consent or refusal of donation. Families often have little knowledge about donation and transplantation, and frequently have not discussed donation with family members in the past, and therefore many have many questions about the donation process. By answering families' questions about donation, requesters can put families at ease about fears they may have about donation, and provide information about donation to help the family make an informed choice. Studies have demonstrated that when requesters answer family questions about donation, families are more likely to consent to donation. Siminoff et al. (2001) found that not only did answering family questions predict consent to donation, but also that families were more likely to donate when the requester reported that s/he felt comfortable answering the families' questions, indicating that when requesters can answer questions in a composed and informative way, families may feel more comfortable with donation.

In addition, families' experiences with the medical system may influence their decisions regarding donation. For example, families who mistrust the healthcare system - more specifically those that mistrust the fairness of the donation and transplant distribution process - are less likely to consent to donation (Rosel et al., 1999; Siminoff et al., 2007; Rocheleau, 2001; Siminoff et al., 2003). Mistrust in the healthcare system may include beliefs that organs and tissues may be "bought" and thus not distributed fairly as well as fears that patients may be declared brain dead prematurely in order for organs to be procured and donated or used for research. Additionally, families' experiences with the medical system at the time of the patient's

death may also be related to donation. Rosel et al. (1999) found that families are more likely to donate if they report having received better treatment by doctors when visiting their loved one, and when they had more access to the facilities when making visits. Further, lack of direct communication by the physician about the patient's prognosis (Haddow, 2004), feeling harassed or pressured to make a decision about donation, and feeling as though health care providers did not care about the patient (Siminoff et al., 2001) are all significant negative predictors of donation consent. These findings suggest that it is not just sensitivity of the requester but also the sensitivity of health care providers and the medical system as a whole that can affect a family's donation decision.

### **Interpersonal Aspects of the Request and Measures of Interpersonal Behavior**

Although there is a fair amount of research on "pre-request" variables and donation, such as patient and family demographics and knowledge of patient preferences and how topics discussed during the request predict donation, there is scant research on how the interpersonal interaction between the next-of-kin and requester may affect the donation decision. There is some research that suggests that tacit forms of communication (e.g., body language and the way in which health care professionals use feeling-related variables such as empathy when communicating with families) can affect how families understand the information provided to them and the level of trust they have in health care professionals (Haddow, 2004). In addition, families may be more likely to donate organs if they report having received better treatment by physicians (Rosel et al., 1999), when health care professionals are perceived as feeling more comfortable answering the family's questions, if they do not feel harassed or pressured to make a decision, and when they were not taken by surprise by the donation request (Siminoff et al., 2001). However, research on the interpersonal interaction between the requester and family of

the deceased and its possible effects on donation decision is very limited, particularly in the area of tissue donation.

**Interpersonal Circumplex.** According to Kiesler's (1983) theory of interpersonal behavior, the behaviors and attitudes of each participant in an interaction affect the behaviors and attitudes of the other. Kiesler's interpersonal circumplex is a model in which reciprocal characteristics (e.g., friendliness and hostility) are placed on opposite poles of the axes that comprise the circle. For one main axis that comprises the circle (affiliation), one behavior tends to elicit the same response (friendliness from one interactant elicits friendliness from the other), whereas on other main axis (control) behaviors tend to elicit the opposite response (dominance from one interactant elicits submissiveness from the other). The current study focuses on these two major axes of interpersonal behavior, control and affiliation, and the four poles that anchor these axes: dominance and submissiveness (for control), and friendliness and hostility (for affiliation). The interpersonal circumplex can be used to examine the behaviors of both parties to see how one person's behavior may evoke certain other behaviors from the other individual, and how the interpersonal behaviors of both members of the dyad complement one another.

The interpersonal circumplex has been used to examine interpersonal behavior in numerous types of situations that involve dyadic interactions, such as parent-child, therapist-client, and doctor-patient interactions. Although no research has used the theory to examine requester-family discussions of tissue donation to date, it is hypothesized that the interactions would be similar to physician-patient decision making interactions for three reasons: 1) the first party (the physician or requester) provides information to the other party about options, 2) the second party (patient or next-of-kin) brings his or her own beliefs and values to the decision making process, and 3) through a discussion between both parties of the options and what is consistent with the

stated beliefs or preferences, a decision is made. Thus, while no information is available about the interpersonal circumplex as applied to requester-family situations in tissue donation, a brief review of the patient-physician literature is appropriate on the basis of the similarities between the types of interactions.

An affiliative individual attempts to form a connection and work in a harmonious partnership with others. According to the theory of the interpersonal circumplex, affiliation by one party tends to elicit an approximately equal level of affiliation from the other (Kiesler, 1983), and indeed research shows that physicians and patients tend to mirror one another's degree of friendliness and cooperation (Kiesler & Auerbach, 2006a). In general patients tend to have good outcomes after interacting with affiliative physicians, outcomes which include greater satisfaction with the consultation, greater involvement in the decision making process, greater adherence to treatment guidelines, and better psychological outcomes (Kiesler & Auerbach, 2006a; Kiesler & Auerbach, 2003a). Patients also appear to benefit when physicians are willing to discuss psychosocial issues in addition to strictly medical issues. Bertakis and colleagues (1991) found that when physicians asked more questions about psychosocial issues and fewer about biomedical issues, patients were more satisfied with the meeting. Thus physician friendliness and willingness to discuss additional issues aside from the specific medical task at hand may contribute to greater affiliation and satisfaction of the patient.

A second dynamic that can affect patient or next-of-kin outcomes is interpersonal control. Controlling behavior consists of taking charge of the discussion, attempting to talk over the other party or persuade others to agree with oneself, and resisting the viewpoints of others (Kiesler & Auerbach, 2003a). Levels of interpersonal control range from dominant or controlling, in which individuals attempt to take charge and persuade others to agree with their points of view, to

submissive or passive, in which individuals follow the advice of others and easily acquiesce to others' wishes or decisions. In reference to physician-patient interactions, patients vary in the levels of control they desire to have during consultations. Whereas some prefer the doctor to be dominant because they would prefer that someone with knowledge and experience regarding the situation take control, other patients prefer the doctor to be more submissive relative to themselves and want to assert themselves and feel more in control of their health situation. Past studies have found that while physicians are more often found to be dominant and patients are found to be submissive during consultations, patients actually tend to have better outcomes and be more satisfied with the interactions with the physicians when physicians are perceived as being less controlling (Bertakis et al., 1991; Kiesler & Auerbach, 2006a). For example, Auerbach and colleagues (1983) found that oral surgery patients were less content during surgery when they perceived their surgeon as being controlling or hostile during their encounter. In the tissue donation context, it is hypothesized that when the tissue requester is perceived as being hostile or controlling the next-of-kin will show more disapproval and will have lower levels of consent to donation than when tissue requesters are perceived being more affiliative and less controlling.

**Tissue Requester's Participatory Style.** In the physician-patient communication literature, there are generally three well-accepted models of patient decision-making. In the past the most common model, often referred to as the paternalistic model, consisted of the physician being the primary decision maker, and he may or may not have provided the patient with details about the illness or planned treatment. However, as the number of potential treatment options has increased and knowledge about the causes and treatments for illnesses has increased among healthcare consumers, medical care has become more patient-centered to give patients more

control over their own care (Laine & Davidoff, 1996). On the opposite end of the spectrum from the paternalistic model is the informed model in which the physician provides the patient with illness and treatment information and the patient reaches a treatment decision on his or her own. The shared decision making model emphasizes the importance of the contributions of both patient and physician. Using this model, the physician provides the patient with illness and treatment information, the patient provides the physician with personal information and preferences, and the two reach a treatment decision together that takes each interactant's views into account (Charles, Gafni, & Whelan, 1997).

Research suggests that patients vary in their preferences about decision-making style (Auerbach, 2000), though most patients and physicians report that patients should have at least a moderate amount of participation during the decision making process (Kiesler & Auerbach, 2006a; Steginga, Turner, & Donovan, 2008). Greater participation can lead to better psychosocial outcomes for patients. For example, studies have shown that greater patient participation is associated with less psychological distress (van Tol-Geerdink, Stalmeier, et al., 2006) and greater interpersonal dominance and satisfaction (Pegg, Auerbach et al., 2005).

The shared decision making model can also be applied to tissue donation requests. The exchange of information between the tissue requester and next-of-kin is similar to that of the physician and patient: the tissue requester provides medical and procedural information to the next-of-kin, and the next-of-kin discusses his or her beliefs and preferences and/or the beliefs and preferences of the deceased. The tissue requester may recommend or discuss the benefits of donation, but should not pressure the next-of-kin to consent. Based on the information provided by the tissue requester, as well as the next-of-kin's own values and preferences, the next-of-kin makes a decision. The proposed study will assess not only the degree to which tissue requesters

and next-of-kin engage in shared decision making, but also the possible effects that shared decision making has on the next-of-kin's decision to donate tissue. Given the assumption that the information exchange and decision making processes will be similar to those in physician-patient consultations, and because shared decision making in tissue donation has not been previously assessed, shared decision making in donation requests will be assessed using a measure of patient-physician decision making. The Participatory Style of the Physician Scale (PSPS; Kiesler & Auerbach, 2003b) has been used in previous studies to assess whether the physician is viewed as providing the patient with treatment information, gathering personal information about the patient, and facilitating shared decision making. In the current study, trained raters assessed the degree to which the tissue requester engaged in the latter two behaviors only, because treatment options are not discussed in tissue request conversations.

**Street System.** Past research suggests that patients feel more comfortable asking questions, are more satisfied with the encounter, are more assertive, and more freely express their concerns when physicians use patient-centered responses (Street, Gordon, & Haidet, 2007; Street, Gordon, Ward, Krupat, & Kravitz, 2005; Street & Millay, 2001). Patient-centered responses, as conceptualized by Street and Millay (2001) include partnership building (e.g., agreeing to a request, checking the patient's understanding, asking about patient preferences or goals, asking patients to express their feelings and opinions) and supportive talk (e.g., reassurance, encouragement, praise, comforting talk, and reflecting and responding to the patient's feelings and values). Street and Millay (2001) developed a coding system that assesses not only physician partnership building and supportive talk, but also specific types of patient behaviors, such as assertive responses and expressions of concern. Assertive responses include patient behaviors such as expressing beliefs, opinions, or preferences, or disagreeing with or



interrupting the physician. Expressions of concern include patient statements about worry, fear, frustration, or other forms of negative affect or emotion. Kiesler and Auerbach's (2006b) adaptation of Street's coding system also includes a category for physician directive and controlling talk/behavior, which consists of the physician giving his own opinion, interrupting the patient, or making a sharp transition of topic in the conversation. Physician partnership building and supportive talk are beneficial primarily because the use of these techniques tends to elicit a response from the patient, which gets them engaged in the conversation and confirms to them that their feelings and opinions are important (Street et al., 2005; Street & Millay, 2001), while directive or controlling behavior on the part of the physician tends to impede patient participation and negatively affects the interpersonal relationship between the physician and patient. Further, the use of partnership building or supportive talk tends to lead to a "cycle of collaboration and rapport" in which patients feel more comfortable asking questions, asserting beliefs and preferences, and expressing concern, which in turn leads to the physician continuing to provide support and build a relationship with the patient (Street & Millay, 2001). The levels of partnership building, supportive talk, and controlling behavior are expected to influence the communication quality of the requester-family discussion, as well as predict consent or refusal of donation. Because past research has found that individuals are more satisfied, express concerns, and ask more questions when the other interactant uses more partnership building and supportive talk, it is hypothesized that the next-of-kin will be more affiliative, will express more positive affect, and will be more likely to donate when tissue requesters use more partnership building and supportive talk and less directive or controlling behavior.

**Siminoff Communication Content and Affect Program (SCCAP).** The SCCAP program is a computer-based coding tool designed for use in a variety of healthcare settings and

can be adapted to fit each researcher's specific needs and goals. The program was developed using classical and contemporary communication theory, which posit that communication has two dimensions of meaning: 1) instrumental or content-based, which is externally focused and deals primarily with information sharing, and 2) consummatory or relational-based, which is more internally focused and is indicative of the quality of the relationship of the interactants (Siminoff & Step, 2011). Thus, the system codes for both content themes, (which are the types of information exchanged), as well as communication types, (which are the relational or persuasive aspects of the interaction or the way in which information is exchanged between interactants). Content themes include discussion of the purpose of the interaction, preferences and values, and psychosocial information, among other things, and these broad domains are also broken down into specific subdomains (e.g., observers can code for specific reasons for a patient's consultation with his health care provider). Thus, content themes provide information about what is discussed during the interaction, which topics are discussed most frequently, and in what order different topics were discussed. Communication types provide information about the relational aspects of the interaction, and observers can code for the communication types used by each participant in the interaction. Communication types include persuasive techniques, such as guilt or altruism, positive or affiliative behaviors, such as partnership or empathy, and negative or hostile behaviors, such as disapproval. Thus, not only is the information discussed coded by the SCCAP, but the program also captures data about the manner in which the information is discussed, which could affect the outcomes of the interaction. A preliminary study which used SCCAP to analyze tissue donation requests found that families were more likely to donate when the requester was more sincere, friendlier, and more verbally expressive, as well as less negative or hostile towards the family (Siminoff & Step, 2011).

## **Persuasion**

Although a full discussion of the ethical complexities of organ and tissue donation is beyond the scope of this review, it is important to discuss the possible ethical issues raised in the context of donation requests, particularly in the form of persuasive communication techniques. For example, Streat (2004) outlines the difference between moral neutrality and utilitarian rationalism in the donation context. He states that donation discussions should be morally neutral, in that the aim is to provide informed consent to the family and take the patient's preferences into account when possible. However, he notes that requests instead often take a utilitarian rationalist approach in which focus is placed on benefits for the recipients rather than possible detriments to the deceased's family and in which the ultimate goal is to obtain consent for donation because of the need for organs and tissues and because it is a social obligation to help others. Some ethicists have also pointed out that the language used in donation requests can be misleading and persuasive. For example, donation is often referred to as the "gift of life" even though donor families often do not perceive the donation as a gift (Siminoff & Chillag, 1999) and organ and tissue donations do not always serve to save or prolong a recipient's life (Kuczewski, 2002).

Few if any studies have assessed persuasiveness in tissue or organ donation requesters' discussions with family members; in fact, there does not appear to be any research addressing the role of persuasion in tissue donation. Research in the area of persuasion in organ donation focuses primarily on efforts to have individuals agree to sign a donor card indicating their desire to donate. Research on helping behavior and donation intention more specifically tends to describe helping motivations as being either egoistic or altruistic (Bendapudi, Singh, & Bendapudi, 1996; Skumanich & Kintsfather, 1996). Egoistic motivation refers to acting out of

concern for oneself, and can be induced either through the desire to reduce personal distress upon encountering a victim or someone in need, or the desire for personal gain, either material or social/emotional (Skumanich & Kintsfather, 1996). Persuasive techniques can induce egoistic motivations that include the desire to reduce personal distress that is elicited by a guilt appeal, or the desire for personal gain by making oneself appear to be helpful, kind, or self-sacrificing. On the other hand, individuals may choose to help for altruistic reasons, in which they feel empathy for those in need and truly want and are willing to help (Bendapudi et al., 1996; Skumanich & Kintsfather, 1996).

**Measurement.** There are few, if any, objective measures of persuasion. Even subjective measures tend to be created specifically for each study rather than being applicable across study designs and topics. In general, persuasion measures created for studies tend to assess how likely participants are to perform a certain behavior after hearing a message or appeal, as well as whether they are interested in hearing or receiving additional relevant information (Block & Keller, 2001; Rook, 1987). Using the SCCAP, the current study operationalizes different types of persuasion and records the frequency with which tissue requesters make persuasive statements during conversations with next-of-kin.

### **Statement of the Problem**

There is little research on predictors of consent to tissue donation, and even less on how tissue donation requests may affect donation outcomes. Although one can refer to studies of organ donation to develop hypotheses, the situations differ in several ways (e.g., living vs. deceased donor, whether the donation is lifesaving, whether companies involved are non-profit or for-profit) and thus a study of tissue donation requests specifically is warranted. Past research on organ donation and patient-physician communication suggest that several factors may affect

donation decisions, including interpersonal variables, sociodemographic variables, and topics discussed during the request. There are two primary aims of this study; hypotheses that are evaluated are listed under each aim.

Aim 1. Examine how behavioral and informational aspects of the request relate to interactants' interpersonal behavior.

*1A:* When tissue requesters are perceived as being more affiliative (measured by the IMI; Kiesler, Anchin, et al., 1985), using more partnership building and supportive talk (measured by the Street system), gathering more information about the next-of-kin's preferences and concerns (measured by the PSPS), and engaging in shared decision making (measured by the PSPS), next-of-kin will also be more affiliative (IMI), will be more assertive (Street system), and will use more expressions of concern (Street system). These hypotheses are made based on a number of studies suggesting that positive affect and interpersonal engagement from one party tends to elicit the same from the other party (Kiesler 1983; Kiesler & Auerbach, 2006a; Street & Millay, 2001; Street et al., 2007; Street et al., 2005).

*1B:* When tissue requesters use more partnership, approval, reassurance, legitimization, concern, and empathy (as measured by the SCCAP), next-of kin will also use more approval.

Aim 2. Examine how behavioral and informational aspects of the request relate to donation outcomes.

*2A:* Next-of-kin will be less likely to donate when tissue requesters are perceived as being disapproving, as measured by the SCCAP. This hypothesis is made based on previous findings of families being more likely to donate when they feel as though they

have received better treatment from health care professionals (Rosel et al., 1999) and when they do not feel harassed or pressured to make a decision (Siminoff et al., 2001).

*2B:* Next-of-kin will be more likely to consent to donation both when the tissue requester and next-of-kin ask more questions. This hypothesis is based on the finding of Siminoff and colleagues (2001) that families are more likely to donate when they feel their questions have been answered.

*2C:* Next-of-kin will be more likely to donate when requesters use more persuasive techniques, such as guilt and discussions of altruism, as assessed by the SCCAP.

*2D:* Next-of-kin will be more likely donate when tissue requesters are perceived as being more affiliative; using more partnership building and supportive talk; gathering more information about the next-of-kin's preferences and concerns; and engaging in shared decision making

*2E:* Next-of-kin will be more likely to donate when tissue requesters are perceived as using more approval, reassurance, legitimization, concern, and empathy.

*2F:* Next-of-kin will be more likely to donate when they are provided information about how donation will not affect funeral arrangements, that they can choose which eligible tissues to donate, how tissues will be distributed, that donation will not result in body disfigurement, or that donation will not result in an additional cost to the family. Past research supports these hypotheses (Rocheleau, 2001; Siminoff, Gordon, Hewlett, & Arnold, 2001).

A secondary aim is to examine how requester characteristics relate to interaction variables and donation outcomes, and are based on the findings of Baughn et al.'s (2010) study using simulated organ donation scenarios. For this aim, the following is hypothesized:

*A:* Interactants will be perceived as more approving and affiliative when there is a “match” between tissue requester and next-of-kin gender and ethnicity. This will be a stringent test of the generalizability of Baughn et al.’s findings because the current study involves actual interactions between requestors and family. In addition, the current study will be different in that the tissue requests are not face-to-face interactions and thus will assess whether the potential effects of ethnicity matching are a result of the family seeing that the tissue requester is of the same ethnicity, or whether it is conversational style or other interpersonal variables that contribute to the matching effect.

*B:* Male tissue requesters will be perceived as being more dominant than female tissue requesters, and perceived as being more affiliative with Caucasian than African American families while female tissue requesters will be less affiliative with Caucasian families.

*C:* African American requesters, particularly females, will be perceived as more dominant than Caucasian requesters. In addition, African American tissue requesters will use more positive affect when interacting with African American families and Caucasian requesters will use more positive affect when interacting with Caucasian families.

*D:* Next-of-kin will be more likely to donate when there is a “match” between next-of-kin and requester gender and ethnicity. As stated in hypothesis A1 of Aim 1, this hypothesis will also determine whether the “matching” effect only occurs when interactions are face-to-face, or also occur during phone conversations in which the other’s ethnicity is not known but in which the interactants may “match” on interaction or interpersonal variables.

## Method

### Participants

Participants were 102 next-of-kin and tissue requester dyads. Information was collected during post-request interviews about the next-of-kin, deceased patient, and tissue requester and included information about age, race/ethnicity, and gender. Information about the next-of-kin also included annual income and education level, as well as beliefs/values about donation and knowledge of the deceased's wishes regarding donation. Tissue requesters completed self-administered questionnaires after requests, while interviews with next-of-kin were conducted within two months after the patient's death, a period of time which permitted families to become more emotionally prepared to discuss the request experience while still being soon enough to maintain sufficient recall accuracy.

**Dataset from which sample was drawn.** In the total dataset of 1016 audiotapes there were 216 tissue requesters. Tissue requesters had a mean age of 33.33 years (SD=11.04) and 68.1% were female. 77% of tissue requesters (n = 166) were Caucasian, 13% were African American (n=28), and the remaining were multiracial or "other." The numbers were similar when looking at male and female tissue requesters separately: of male TRs 76.1% and 14.1% were Caucasian and African American, respectively, and of female TRs 77.9% and 13.6% were Caucasian and African American, respectively. There was not a significant difference in age for males (M=32.71, SD=8.82) and females (M=33.61, SD=11.95) or between Caucasians (M=33.45, SD=11.30) and African Americans (M=34.28, SD=9.85). TRs had an average of 18.01 months of experience as a coordinator (SD=25.09) and ranged from less than one month to 17 years of experience. There were no significant differences in months of experience between



males ( $M=21.54$  months,  $SD=33.81$ ) and females ( $M=16.36$  months,  $SD=19.64$ ),  $F(1, 223) = .28$ ,  $p=.60$ , or between Caucasians ( $M=19.33$  months,  $SD=26.73$ ) and African Americans (10.16 months,  $SD=13.89$ )  $F(3, 213) = 1.26$ ,  $p =.29$ .

Although there were only 1016 audiotapes, 1411 family members were interviewed because requesters sometimes spoke with multiple family members during the process. Next-of-kin relationships to the patient are as follows: 44.2% spouse, 28.1% child, 13.7% parent, 9.6% sibling, 3.6% other relative or significant other, 0.7% legal guardian. Next-of-kin ranged from 18 to 91 years of age, with a mean age of 51.54 years ( $SD=13.53$ ). Of family members, 72.5% were female, 85.8% were Caucasian and 11.8% were African American, with the remaining family members self-identifying as Asian, American Indian or Alaska native, or multiracial. On average family members had 13.96 years of education ( $SD=2.40$ ) and yearly household incomes were relatively normally distributed, with about half of respondents reporting an income of between \$20,000 and \$60,000 annually. Of respondents, 55.6% reported that they had a donor card or had indicated on their licenses that they would like to be donors. 79.8% of respondents stated that they would be willing to donate their tissues, and 81.1% stated that they would be willing to donate their organs. In all, 59.8% of families consented to donation, with 50.6% consenting to donate all eligible tissues and 9.2% consenting to donate some of the eligible tissues. In 32.4% of cases families refused donation, while in 6.6% no decision was reached and in 1.2% it was unclear as to whether a donation decision was reached.

**Sample inclusion/exclusion criteria.** Cases were included only when there was one next-of-kin and one tissue requester involved in the decision-making process. In addition, based on preliminary analyses of the dataset the following exclusion criteria for the final study sample were established: 1) Cases in which the patient was under 18 years of age were excluded,

because only 15.9% of next-of-kin of patients under 18 consented to donation; this rate is significantly lower than the overall consent rate of 70.2%, 2) Cases in which a decision was not reached or in which it was unclear whether a decision was reached were excluded because of the study's focus on consent or refusal to donate, 3) Cases in which the duration of the conversation between the greeting and either consent or refusal was less than two minutes were excluded because there was not sufficient interactional data for analysis, 4) When the patient had previously signed legal documentation to be a donor, families consented to donate in 94.6% of cases; thus, cases in which the patient had signed legal documentation to be a donor and the family consented to donation were excluded as the family likely based their decision on the patient's desire to be a donor rather than based on aspects of the interaction, 5) Cases were excluded when the family reported initially being either being very receptive or not receptive at all to donation, because these families were significantly more and less likely, respectively, to consent to donation than those who were moderately receptive to the idea of donation,  $X^2(6) = 706.20, p < .001$ , 6) Cases were excluded if the family reported that their initial reaction was either favorable or not favorable because they were significantly more and less likely, respectively, to consent to donation than those who initially were unsure or undecided,  $X^2(5) = 614.97, p < .001$ .

**Final sample.** After implementing these inclusion criteria, 202 cases remained (19.88% of the original sample). Of these, 56 had missing sound files or sound files that were inaudible due to volume or static. An additional 44 cases were excluded due primarily to missing sections of the discussion (e.g., the sound recording started with the consent process and did not include the decision-making process), while a small number were excluded due to other abnormalities (e.g., the tissue requester spoke with a nurse at the hospital who served as a proxy for the family,

two family members passed away and the family consented for one individual but refused for the other, cases in which the patient was ineligible for donation and thus no decision-making took place, etc.). The final sample consisted of 102 cases with 53 different tissue requesters. The maximum number of conversations conducted by a tissue requester in this sample was 7, though the average number conducted was much lower (mean = 1.92, SD = 1.47, median = 3, mode = 1) and most conducted only one request.

**Final sample demographics.** The final sample consisted of 102 next-of-kin and 53 tissue requesters; demographics of the final study sample are presented here. Next-of-kin were most often children (42.2%) or spouses (31.4%) of the patient, and less frequently were a sibling (12.7%), parent (10.8%), or other relative or significant other (2.9%). Most NOKs were female (77.4%) and 84.9% were Caucasian. The mean age of NOKs was 49.26 years (SD = 14.12), the mean education was 13.25 years (SD = 2.26), and income was relatively normally distributed with a median yearly income of about \$50,000. While 40.2% of NOKs consented to donation of the deceased's tissue, 70.3% reported that they would be willing to donate their own tissues. Demographics of the NOKs in the study sample were generally similar to that of the original sample of 1141 NOKs. Paired sample t-tests and chi-square analyses were conducted to test for significant differences between the initial and final samples for continuous and categorical variables, respectively. The only significant difference was NOK age: NOKs in the initial sample had more years of education (M = 14.09, SD = 2.45) than NOKs in the final sample (M = 13.23, SD = 2.27),  $t(100) = 2.62$ ,  $p = 0.01$ .

Of TRs, 88.2% were Caucasian and 71.6% were female. Experience as a tissue requester ranged from one month to five years and eight months with the mean being 17.70 months of experience (SD = 16.89, median = 14 months). Ratio of males to females and the average

months of experience were similar for Caucasian and African American TRs: of Caucasian TRs, 77.8% were female and the average months of experience was 17.29 (SD = 16.21), and of African American TRs, 75.0% were female and the average months of experience was 20.00 (SD = 21.46).

## Measures

**Impact Message Inventory.** The Impact Message Inventory (IMI; Kiesler et al., 1985) is used to assess a person's interactional style by evaluating what reactions (feelings, actions, perceptions) the person evokes from others. The IMI was created to measure interpersonal behaviors as defined by Kiesler's (1983) Interpersonal Circle, which posits that interactions are influenced by transactional processes in which each person's behaviors evoke certain other behaviors from the other. The current study used the 28-item observer rating form in which trained raters assess the next-of-kin's and tissue requester's interactional style, and has been found to have sufficient evidence for reliability and validity (Kiesler, 1987; Kiesler & Auerbach, 2004). This short form focuses on two axes of the interpersonal circle, control and affiliation, and produces scores on four aspects of behavior: dominance, submissiveness, hostility, and friendliness. Coders respond as if they were the "other" (e.g., when responding as the tissue requester, rating the extent to which the next-of-kin "made me feel taken charge of").

Interrater reliability was assessed separately in the present study for rater perceptions of TR and NOK using the IMI. For raters acting as the TR and assessing the interpersonal behavior of the NOK, Kappa = .635,  $p < .001$ . For raters acting as the NOK and assessing the interpersonal behavior of the TR, Kappa = .677,  $p < .001$ . Correlations between raters for the subscale means are below.

Table 1

*IMI Interrater Reliability*

Subscale	Pearson correlation
NOK Dominance	.822*
NOK Submissiveness	.715*
NOK Friendliness	.801*
NOK Hostility	.762*
TR Dominance	.692*
TR Submissiveness	.501*
TR Friendliness	.848*
TR Hostility	.795*

\* p < .001

Obtained alpha reliability coefficients for IMI subscales are presented below.

Table 2

*IMI Alpha Reliabilities*

IMI Subscale Alpha Reliabilities	Ratings of NOK	Ratings of TR
Dominance	0.612	0.636
Submissiveness	0.740	0.526
Friendliness	0.802	0.876
Hostility	0.874	0.820

**The Participatory Style of Physician Scale (PSPS).** The PSPS is comprised of three subscales and assesses the participatory style and behaviors of the physician during consultations with patients (Kiesler & Auerbach, 2003b). This scale has been adapted for use with organ procurement coordinators and family members (Baughn et al., 2010). Using the 15-item observer version of this measure, trained raters listen to audiotapes or view videotapes of

donation requests and assess both the requester's and next-of-kin's participatory style. The three subscales reflect what Charles, Gafni, and Whelan (1997) deemed to be crucial aspects of the shared decision-making model according to their research. The three subscales are: 1) providing medical information, such as risks and benefits of treatments, 2) gathering personal information, such as asking about next-of-kin concerns, and 3) facilitating shared decision making. The current study utilized only the second two subscales because medical treatment information is not provided during the requests as all patients eligible for tissue donation are deceased.

Interrater reliability obtained for the PSPS in the present study was: PSPS overall, Kappa = .642,  $p < .001$ ; for the mean of the subscale "gathering NOK information"  $r = .830$ ,  $p < .001$ ; for the mean of the subscale "engaging in shared decision making"  $r = .856$ ,  $p < .001$ . Alpha reliability for the "gathering NOK information" subscale was .845; for the "engaging in shared decision making" subscale, .858.

**Street System.** The Street System was developed as an observational coding system to be used in the analysis of interactions in medical settings (Street & Millay, 2001), though the constructs assessed are also relevant for the current study's examination of the tissue requester-next-of-kin interaction. More specifically, this measure is used to assess the extent to which patients (next-of-kin) participate in medical consultations (donation requests), how physicians (tissue requesters) respond to patient (next-of-kin) involvement and questions, and how the two relate to each other and work together in the decision-making process. Target utterances from the consultation are coded into one of several categories: patient (next-of-kin) assertive responses and expressions of concern; and physician (tissue requester) partnership building and supportive talk. Kiesler and Auerbach's (2006b) adaptation of the system also includes a category for physician directive and controlling talk/behavior, which consists of the physician giving his own

opinion, interrupting the patient, or making a sharp transition of topic in the conversation. Two coders were used to code each interactant for each audiotape. Coding reliabilities have ranged from .65 to .98 (Street et al., 2003).

Interrater reliability for the Street system in the present study was assessed using intraclass correlations. For the overall scale, ICC = .706,  $p < .001$ . Intraclass correlations for the subscales are below.

Table 3

*Street System Intraclass Correlations*

Subscale	ICC
NOK Assertiveness	.593*
NOK Expressions of Concern	.726*
TR Partnership Building	.721*
TR Controlling Behavior	.523*
TR Supportive Talk	.726*

\*  $p < .001$

**Siminoff Communication Content and Affect Program (SCCAP).** The SCAAP is a communication-related coding system that assesses topics discussed and interpersonal characteristics as observed in medical encounters (Siminoff & Step, 2011). Unlike the Street System, which is atheoretical, the SCAAP is based on models of communication theory. The SCCAP measures both content themes, or the content and sequence of information exchanged, and communication types, or the relational aspects of communication. Content themes and communication types are coded to record *what* is said during the interaction, as well as *how* it is said. Coders also indicate whether or not next-of-kin consented to donation. Inter-rater reliability is high, with a previous assessment analyzing inter-reliability of donation requests

ranging from 0.82 to 0.99 (Siminoff & Step, 2011). In the present study content themes of interest were discussion of how donation will not affect funeral arrangements, that NOKs can choose which eligible tissues to donate, how tissues will be distributed, that donation will not result in body disfigurement, or that donation will not result in an additional cost to the family. Communication types of interest included approval, disapproval, question-asking, and persuasion.

### **Procedure**

All conversations with next-of-kin were recorded by the tissue banks used in this study for quality assurance and to have a record of verbal consent or refusal for donation. Families' knowledge of donation varied: while some were not aware of the deceased's eligibility for donation until receiving the phone call from requesters, others were previously told about the possibility of donation at the hospital, or even asked about donation themselves. Tissue requesters must speak directly to next-of-kin of the highest priority, or may speak to a proxy decision maker as designated by the next-of-kin. Priority of next-of-kin are as follows: 1) surviving spouse, 2) adult son or daughter, 3) parent, 4) adult brother or sister, 5) guardian at time of death, 6) other authorized person or agency as provided by law.

Individuals who had social work, social science, or public health backgrounds were recruited through Case Western Reserve University in Cleveland, Ohio to serve as family interviewers. The training process for interviewers lasted approximately three months and consisted of didactic sessions on general interviewing techniques, discussions about the meaning of and information obtained from specific interview questions, instruction on how to record or code responses, and training on more advanced interviewing techniques such as probing and focusing the interview. All interviewers conducted a minimum of ten practice interviews,



followed by a pilot period in which interviews were audiotaped and reviewed by communication and interviewing experts. During the training period and throughout data collection emphasis was placed on avoiding interviewer bias by using neutral probes rather than leading questions or statements. Interviewers were also trained to deal with discussing difficult topics with families who were still grieving the loss of a loved one, and role playing exercises were conducted to provide interviewers with opportunities to practice conducting interviews in a sensitive and empathetic manner. Finally, meetings were held regularly during this process during which questions or concerns were discussed and clarified.

The pre-consent portion of audiotapes typically range from about five to twenty-five minutes in length. Audiotapes were coded by 7 trained raters using the SCCAP. A detailed coding manual was developed that operationally defined each code and provided examples of what types of statements would fall under each code, and also defined each communication type. After numerous coding meetings focusing on the meanings of codes and communication types, raters coded sample audiotapes based on the information in the coding manual. Questions, concerns, and alterations to the coding manual were discussed during coding meetings, and practice coding continued until raters were in agreement about the contents and instructions of the manual. Practice coding continued until inter-rater reliability was sufficient to begin coding study audiotapes. A reliability check found inter-rater reliability ranging from 0.82 to 0.99.

Audiotapes were coded using observer forms of the IMI, PSPS, and Street system. Two coders were used to rate TR and NOK behavior using the IMI, two coders were used to rate TR behavior using the PSPS, and two coders were used to rate TR and NOK behavior using the Street System. Raters trained to use the IMI practiced classifying extreme behaviors of dominance, submissiveness, friendliness, and hostility by first being asked to think about the best

and worst interactions they ever had with doctors, and to fill out the IMI for each of these interactions. This process helped give the coders a more concrete idea of what each of the four categories represents and how they might manifest during conversations with an “other” (physician or tissue requester) in which information is exchanged and a decision is made. Coders then had several hours of practice using sample audiorecordings of donation requests. When questions arose, all coders discussed and came to agreement about items. Inter-rater reliability was assessed throughout the training process, and when coders consistently achieved sufficient inter-rater reliability ( $Kappa \geq 0.75$ ), study coding began. Two coders listened to each audiofile and coded for NOK behavior, and then listened to the audiofiles a second time and coded for TR behavior. Training for the coding of the PSPS observer rating form was similar to that of the IMI. Raters first discussed the meanings of each item on the PSPS and provided examples of how certain behaviors or interpersonal styles would be rated. Using sample audiofiles, raters practiced rating TR behavior on two subscales of the PSPS: 1) gathering personal information from the NOK, and 2) engaging in shared decision making. When questions arose, coders discussed and came to agreement about items. Inter-rater reliability was assessed throughout the training process, and when coders consistently achieved adequate inter-rater reliability ( $Kappa \geq 0.75$ ), study coding began.

In coding for the Street System, coders identified and classified “utterances,” which Street describes as simple clauses that can stand on their own as complete thoughts. One class of utterances that were coded in the current study is next-of-kin (originally “patient”) responses. Next-of-kin responses include assertive responses, in which the next-of-kin disagrees, interrupts, discusses his/her beliefs, or introduces a new topic; and expressions of concern, in which a next-of-kin demonstrates fear, worry, or negative affect. A second class of utterances that were coded

for is tissue requester (originally “physician”) responses. One type of tissue requester response is partnership building, which includes TR agreement with the NOK, questions about how the next-of-kin feels, encouragement towards the next-of-kin to participate in the decision-making process, and asking the next-of-kin about his/her preferences and expectations. The second type of requester response is supportive talk, such as providing reassurance or comfort, empathizing or sympathizing with the next-of-kin, and demonstrating sensitivity. Kiesler and Auerbach's adaptation of the Street System includes a third type of requester response: directive or controlling behavior, such as giving recommendations or making a sharp transition in topic. Training for coding using the Street system began by defining each code to ensure understanding. Coders then brainstormed lists of examples for each code to help give them more concrete ideas of what types of utterances might fall under each code during a conversation. Training then began on sample audiorecordings, coding five-minute sections at a time and reviewing what coders observed and recorded. When there were questions or coding conflicts, coders discussed why they coded the way they did until agreement was reached among the coders. Longer sections of sample audiorecordings were coded according to the same process, and inter-rater reliability was assessed. When coders consistently achieved adequate inter-rater reliability ( $ICC \geq 0.75$ ), coding of the study audiotapes began. Two coders listened to each audiofile and coded for NOK behavior, and then listened to the audiofiles a second time and coded for TR behavior.

## **Results**

### **Data Transformations/Preliminary Analyses**

There were no missing data in the sample dataset. Variables that were skewed or kurtotic

were transformed for normality. Nine variables were transformed using a log transformation: persuasion, TR approval, TR questions, TR partnership building, TR dominance, NOK approval, NOK disapproval, NOK questions, and NOK dominance. Seven variables were transformed using inverse transformations: NOK assertiveness, NOK expressions of concern, TR controlling behavior, TR supportive talk, TR hostility, NOK submissiveness, and NOK hostility. The variable of TR disapproval remained strongly positively skewed after transforming, and therefore was used as a dichotomous variable: no statements of disapproval (occurring in 89.3% of cases) and 1 or more statements of disapproval (occurring in 9.7% of cases).

Variables were assessed for multicollinearity. The two subscales of the PSPS, gathering NOK personal information and engaging in shared decision making, were highly correlated ( $r = .824, p < .001$ ). Because gathering personal information about beliefs and preferences is considered one of the key aspects of shared decision making and the information was therefore likely captured by the latter variable, 'gathering NOK personal information' was dropped and only 'engaging in shared decision making' was used in analyses. No other interpersonal variables were intercorrelated above 0.5.

Analyses were conducted to assess the effect of demographic variables on the donation decision. There were no significant relationships between consent/refusal and NOK age, race, gender, education, income, marital status, or relationship to the patient, or TR race, gender, or months of experience. However, there were significant differences in rates of consent/refusal related to NOK preferences about donating their own tissues and/or organs. Those who consented to donation were significantly more likely to say that they would donate their own tissues,  $X^2(2) = 17.05, p < .001$ , and donate their own organs,  $X^2(2) = 9.37, p = .009$ . Because of the high degree of overlap of these two variables (i.e., almost every NOK gave the same

response to each of the two items) only the variable "NOK preferences for donating their own tissue" was used in subsequent analyses.

IMI subscale scores for dominance, submissiveness, friendliness, and hostility were used to describe the interaction. Regression analyses used only axis scores of affiliation (friendliness minus hostility) and control (dominance minus submissiveness).

## **Overview**

Data on interpersonal interactions is often evaluated one of two ways: using nested/multilevel analyses, or using regressions while controlling for relevant variables. Data can be nested within dyads either with one interactant speaking to several others (e.g., 5 TRs, each conducting 20 different requests with unique NOKs for a total sample of 100 requests nested within 5 TRs), or with each member of the dyad being unique (e.g., 100 different TRs, each conducting 1 request with a unique NOK for a total sample of 100 requests). In either case the interpersonal behavior of one interactant is perceived as partially dependent on the interpersonal behavior of the other, which is therefore taken into account in the analysis. However this type of analysis was not plausible for the current study for two reasons. First, in the study sample some TRs conducted only one request while others conducted multiple requests. Therefore analyses would have to be conducted separately on two different datasets (as some analyses for about half of the TRs would be dyadic in nature while the other half would require that NOKs be nested within TRs [D. Kenny, personal communication, August 10, 2010]), which would significantly decrease power. Second, with the exception of the IMI and two behaviors assessed by the SCCAP (disapproval, questions) different measures were used to assess different aspects of interpersonal behavior of the TR and NOK (e.g., Street System does not assess the same characteristics in each interactant but rather assesses TR partnership building

and supportive talk and NOK assertiveness and expressions of concern). Because multilevel modeling takes into account one interactant's score on a given measure when assessing the other interactant's score on that measure, this type of analysis would not be applicable to the nature of the data in the current study. Therefore the study used regression analyses while controlling for TR variables in order to take into account factors that may affect NOK interpersonal behavior. All linear and logistic regressions were therefore conducted while controlling for TR variables to reduce the effect of individual TR characteristics on outcomes.

Data on the nature of the interpersonal interaction between tissue requesters and next-of-kin will be presented first. This will be followed by data relevant to determinants of the interactants' interpersonal behavior. This section will include assessment of how NOK and TR demographic variables as well as behavioral and interactional aspects of the request to donate were related to the nature of the interpersonal interaction. Then factors associated with donation outcomes (TR and NOK demographic variables, behavioral and interactional aspects of the donation discussion) will be evaluated.

### **Description of the Interaction**

NOKs asked an average of 2.53 questions per conversation ( $SD = 2.88$ ), and used a mean number of 0.98 confirming statements ( $SD = 1.17$ ) and 1.05 disconfirming statements ( $SD = 1.46$ ) per conversation. Data on the presence or absence of discussion about specific topics related to donation are presented below.

Table 4

*Frequency of Discussion of Key Topics*

Topic	% of cases in which topic is discussed
NOK's right to choose which tissues to donate	14.7
Donation is at no cost to the NOK/family	38.2
How tissues are distributed	2.0
Mutilation/how procurement affects appearance of the body	37.3
Donation will not delay the funeral	40.2
Donation will not affect the deceased's appearance at the funeral	36.3

**IMI ratings.** Raters, putting themselves in the place of NOKs, reported that (on a scale of 1-4, mean item scores reported) TRs were not particularly dominant ( $M = 1.38$ ,  $SD = 0.20$ ), submissive ( $M = 1.43$ ,  $SD = 0.20$ ) or hostile ( $M = 1.28$ ,  $SD = 0.32$ ), but that TRs were moderately friendly ( $M = 2.10$ ,  $SD = 0.51$ ). Raters acting as TRs also assessed NOKs as demonstrating relatively low dominance ( $M = 1.33$ ,  $SD = 0.19$ ), submissiveness ( $M = 1.38$ ,  $SD = 0.27$ ), friendliness ( $M = 1.74$ ,  $SD = 0.43$ ), and hostility ( $M = 1.53$ ,  $SD = 0.49$ ). Comparison of these means and standard deviations to data obtained in a previous study using the IMI in the analysis of simulated discussions of organ donation (Baughn et al., 2010) is presented in Table 5.

Looking specifically at axis scores, both TRs ( $M = 0.83$ ,  $SD = 0.73$ ) and NOKs ( $M = 0.21$ ,  $SD = 0.80$ ) were perceived as affiliative (more friendly than hostile), and both were perceived as only slightly more submissive than dominant ( $M = -0.05$ ,  $SD = 0.29$ ;  $M = -0.05$ ,  $SD = 0.39$ , respectively).

Table 5

*Comparison of Mean IMI Scores in the Current and Baughn et al. (2010) Studies*

IMI Subscale	Current Study	Baughn et al 2010
Patient/NOK		
Dominance	1.33 (0.19)	1.64 (0.40)
Submissiveness	1.38 (0.27)	1.64 (0.23)
Friendliness	1.74 (0.43)	1.61 (0.32)
Hostility	1.53 (0.49)	2.39 (0.50)
Doctor/TR/Procurement Coordinator		
Dominance	1.38 (0.20)	1.55 (0.42)
Submissiveness	1.43 (0.20)	1.84 (0.29)
Friendliness	2.10 (0.51)	2.34 (2.00)
Hostility	1.28 (0.32)	1.69 (0.48)

**PSPS ratings.** To assess the participatory style of the tissue requester, trained observers rated items assessing the extent to which tissue requesters gathered personal information from, and engaged in shared decision making with, the NOK on a scale of 1 to 5. Overall, observers reported that TRs tended to gather personal information about values and preferences and engage in shared decision making with NOKs. Below are means and standard deviations for these two subscales of the PSPS, as well as means and standard deviations from the Baughn et al. (2010) study of simulated discussions of organ donation for comparison.

Table 6

*Comparison of Mean PSPS Scores in the Current and Baughn et al. (2010) Studies*

PSPS Subscale	Current Study	Baughn et al 2010
TR/Procurement Coordinator personal information gathering	4.17 (0.48)	3.53 (0.63)
TR/Procurement Coordinator shared decision making	4.19 (0.49)	3.62 (0.75)



**Street System.** Rater assessment of NOK and TR behavior using frequency counts of behaviors assessed by the Street system are presented below.

Table 7

*Mean Street System Scores and Range in the Current Study*

Subscale	Mean	SD	Range
NOK assertiveness	1.34	1.31	0-7
NOK expressions of concern	0.24	0.47	0-2
TR partnership building	1.28	1.04	0-6
TR controlling behavior	0.31	0.58	0-4
TR supportive talk	0.78	0.83	0-4

As a source of comparison, presented below (Table 8) are descriptive data on doctor and patient behavior (utterances per conversation) using the Street System in a sample of doctors and patients (Street et al., 2005). While the frequency of comparable behaviors (assertiveness, concern, partnership building, supportive talk) is considerably greater in the doctor-patient sample, they are still all occurring relatively infrequently; Street (2005) reported that these types of utterances typically represent less than 7% of total patient utterances, and less than 2% of total doctor utterances.

Table 8

*Mean Street System Scores and Range in the Street et al. (2005) Study*

Subscale	Mean	Range
Patient assertiveness	7	0-60
Patient expressions of concern	3	0-20
Doctor partnership building	3.27	0-25
Doctor supportive talk	1.01	0-19

**Types of communication statements.** Some kind of persuasion was used by the TR in 83.2% of cases, with the mean number of persuasive statements used per request being 2.03 (SD = 1.92). The most common persuasive technique used was foot-in-the-door (e.g., the tissue requester stating that they work for or with the hospital or funeral home), which occurred in 65.3% of cases, followed by altruism which occurred in 27.7% of cases. TRs on average asked 4.73 questions (SD = 4.09), and the number of questions asked ranged from 0 to 22.

With regard to communication types, TRs rarely used disapproval (M = 0.26, SD = 0.99). TRs used more confirming or aid-oriented statements (M = 3.85, SD = 4.33), and of those the most commonly used were reassuring statements (occurring in 54.6% of cases) and empathic statements (occurring in 45.5% of cases). These findings are consistent with a previous study of oncologist-patient interactions using SCCAP, which showed that the oncologist used more confirming than disconfirming statements, and the most commonly used relational message was reassurance (Siminoff & Step, 2011).

### **Relationships among Interpersonal/Interaction Variables**

There were a number of significant correlations among interpersonal and/or interaction variables not addressed specifically in the hypotheses. When TRs used more persuasive statements during the interaction, NOKs used more statements of approval and were less assertive. TRs who used persuasive statements also used more statements aimed at partnership building.

Table 9

*Significant Correlations between Persuasion and NOK and TR interpersonal variables*

Persuasion		
	r	p
NOK approval	.31	.001
NOK assertiveness	-.29	.003
TR partnership	.21	.034

TRs who used more statements of approval were also more expressive in other ways, as they also asked more questions ( $r = .25, p < .001$ ) and used more statements of partnership ( $r = .25, p = .011$ ). In addition, when TRs were more affiliative they also made more statements aimed at shared decision making ( $r = .35, p < .001$ ).

There was a marginally significant relationship between TR dominance and NOK expressions of concern: when TRs were perceived as more dominant, NOKs made fewer expressions of concern ( $r = -.19, p = .058$ ).

There were several TR variables associated with more question asking by the NOK. NOKs tended to ask more questions when TRs were more approving ( $r = .28, p = .004$ ), were more affiliative ( $r = .31, p = .002$ ), engaged in shared decision making ( $r = .31, p = .002$ ), and made more statements of partnership ( $r = .33, p = .001$ ).

Because TR disapproval was treated as a dichotomous variable due to skewness and kurtosis not rectified by transformations, t-tests were used to examine possible relationships between TR disapproval (dichotomized as no statements of disapproval or one or more statements of disapproval) and continuous TR and NOK interpersonal variables. There were three variables significantly associated with TR disapproval, as well as three additional variables with a marginally significant relationship to TR disapproval, presented below.

Table 10

*Relationship between TR Disapproval and TR and NOK Interpersonal Variables*

	No disapproval statements Mean (SD)	One or more statements of disapproval Mean (SD)	t	p
NOK disapproval	0.42 (0.20)	0.52 (0.30)	-2.10	.063
NOK concern	0.05 (0.16)	0.37 (0.67)	-3.72	<.001
TR partnership	0.11 (0.23)	-0.03 (0.16)	1.90	.061
TR support	1.08 (0.72)	0.64 (0.70)	.189	.061
TR affiliation	0.88 (0.72)	0.34 (0.59)	2.27	-.025
NOK affiliation	0.29 (0.74)	-.057 (0.97)	3.39	.001

These analyses showed that when TRs did not use statements of disapproval they were perceived as more affiliative and also used more statements of partnership and support. In addition, when TRs did not use statements of disapproval NOKs used fewer statements of disapproval as well, and also used fewer statements of concern and were perceived as more affiliative.

There were significant correlations among axis scores of the IMI, both within individuals and between individuals. When TRs were perceived as more affiliative, NOKs were perceived as more affiliative as well. TRs who were more affiliative were also less controlling. Consistent with interpersonal theory, TRs and NOKs tended to complement one another on the control dimension: when one was perceived as more controlling, the other was perceived as significantly less controlling. Correlations are shown below in Table 11.

Table 11

*Correlations among IMI Axis Scores*

	TR affiliation	TR control	NOK affiliation	NOK control
TR affiliation		-.301*	.382**	.011
TR control	-.301*		-.105	-.258*
NOK affiliation	.382**	-.105		.033
NOK control	.011	-.258*	.033	

\* &lt; .01 \*\* &lt; .001

**Relationship between Demographics and Aspects of the Interaction**

Analyses were conducted to determine whether NOK and TR demographic variables were related to interpersonal variables. t-tests were conducted examining the relationship between NOK gender and interpersonal variables (e.g., approval, disapproval, questions, assertive responses, expressions of concern, control, affiliation). Female NOKs were perceived as more affiliative ( $M = 0.30$ ,  $SD = 0.76$ ) than male NOKs ( $M = -0.09$ ,  $SD = 0.88$ ),  $t(100) = 2.09$ ,  $p = .040$ . There were no differences on interpersonal variables between Caucasian and African American NOKs. One-way ANOVAs were conducted for demographic variables with more than two groups. When examining marital status, results showed that NOKs who were married/cohabitating made significantly more statements of approval ( $M = 0.18$ ,  $SD = 0.23$ ) than those who were widowed ( $M = 0.04$ ,  $SD = 0.12$ ),  $F(3,98) = 4.96$ ,  $p = .003$ . There were no significant differences on interpersonal variables based on NOK relationship to the patient or NOK willingness to donate their own tissues. Correlations were conducted to examine relationships between continuous demographic variables and interpersonal variables. NOKs with more education were also perceived as more affiliative ( $r = .283$ ,  $p = .004$ ). There were no

significant relationships between interpersonal variables based on NOK age or income.

Regarding the relationships between NOK demographic variables and TR interpersonal variables, t-tests showed that there were no significant relationships between NOK race or gender and continuous TR interpersonal variables. One way ANOVAs were conducted for demographic variables with more than two groups. There were no significant relationships between continuous TR interpersonal variables and NOK relationship to the patient or NOK marital status. There were significant differences in the number of questions TRs asked to NOKs with different preferences for donating their own tissues,  $F(2, 98) = 4.10, p = .019$ . Results of Scheffe post-hoc tests are presented below.

Table 12

*Relationship between NOK Willingness to Donate Own Tissues and TR Questions*

	<u>Willing to donate own tissues</u>	<u>Not sure if willing to donate own tissues</u>	<u>Not willing to donate own tissues</u>	F	p
	Mean (SD)	Mean (SD)	Mean (SD)		
TR Questions	0.53 (0.34)	0.71 (0.38)*	0.34 (0.38)*	4.10	.024

Correlations were used for demographic variables that were continuous. NOK age and income were not significantly related to TR interpersonal variables. There were significant differences for TR control by NOK years of education: TRs were perceived as more controlling when speaking with NOKs with more years of education ( $r = 0.26, p = .037$ ).

Regarding TR demographic variables, there were no significant relationships between TR race or gender and any TR or NOK interpersonal variables, as well as no significant relationship between TR experience and NOK interpersonal variables. There were two variables significantly associated with TR months of experience: when TRs had more experience they also

used more statements of approval ( $r = 0.24, p = .01$ ) and support ( $r = 0.25, p = .01$ ).

As the variable TR disapproval was treated as a dichotomous variable due to skewness and kurtosis not rectified by transformations, analyses were conducted examining possible relationships between TR and NOK demographic variables and the dichotomous variable of presence or absence of TR statements of disapproval. There were no significant relationships between any TR or NOK demographic variables and TR presence or absence of disapproval.

## Hypotheses

### Relationship between Behavioral and Interpersonal Variables and Aspects of the Interaction

*Aim 1.* The first aim of the study was to examine how behavioral and informational aspects of the request relate to interactants' interpersonal behavior.

*1A.* The first hypothesis posited that the positive/collaborative behavior of the tissue requester would be associated with positive/collaborative/participatory behavior of the next-of-kin. This hypothesis was partially supported. Bivariate correlations were first conducted to examine relationships among TR and NOK behaviors.

Table 13

#### *Correlations among Variables Assessing NOK and TR Positive/Collaborative Behavior*

	TR affiliation	TR supportive talk	TR partnership building	TR shared decision making
NOK affiliation	.382**	.013	.058	.294 **
NOK approval	.221*	.214 *	.019	.188
NOK questions	.305 **	.101	.334 **	.305 **
NOK expressions of concern	.134	.004	.004	.099

\*\*  $p < .01$ , \*  $p < .05$

Hierarchical regressions were then conducted on variables which had significant correlations in order to control for TR race, gender, experience, and number of requests. After controlling for these variables, the relationships among variables remained significant. The model examining the effect of TR affiliation and TR shared decision making on NOK affiliation while controlling for TR variables was significant,  $F(6, 95) = 3.95, p = .001$ . This analysis (presented below) shows that after controlling for TR variables, TR affiliation remained a significant predictor of NOK affiliation, though TR engaging in shared decision making did not.

Table 14

*Predictors of NOK Affiliation*

Model		Coefficients <sup>a</sup>				Sig.
		Unstandardized Coefficients		Standardized Coefficients	t	
		B	Std. Error	Beta		
1	(Constant)	-.093	.351		-.264	.792
	TR no. of requests	.055	.045	.130	1.219	.226
	TR race	.112	.255	.045	.440	.661
	TR gender	.055	.185	.031	.297	.767
	TR experience	.000	.004	-.007	-.065	.948
2	(Constant)	-1.536	.717		-2.142	.035
	TR no. of requests	.066	.042	.156	1.556	.123
	TR race	.149	.233	.060	.637	.526
	TR gender	-.016	.171	-.009	-.094	.925
	TR experience	.001	.004	.023	.252	.801
	TR affiliation	.388	.112	.352	3.480	.001
	TR SDM	.249	.166	.151	1.501	.137

a. Dependent Variable: NOK affiliation



The model examining the effect of TR affiliation and TR supportive talk on NOK approval while controlling for TR variables was significant,  $F(6, 95) = 3.10, p = .008$ . This analysis (presented below) shows that after controlling for TR variables, both TR affiliation and TR supportive statements remained significant predictors of NOK statements of approval.

Table 15

*Predictors of NOK Approval*

Model		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.153	.080		1.905	.060
	TR no. of requests	-.001	.010	-.008	-.076	.940
	TR race	-.079	.058	-.135	-1.345	.182
	TR gender	.049	.042	.119	1.164	.247
	TR experience	.002	.001	.164	1.662	.100
2	(Constant)	.119	.082		1.443	.152
	TR no. of requests	.006	.010	.062	.608	.544
	TR race	-.068	.056	-.116	-1.210	.229
	TR gender	.053	.041	.127	1.272	.206
	TR experience	.001	.001	.124	1.257	.212
	TR affiliation	.064	.025	.248	2.581	.011
	TR supportive statements	.064	.027	.242	2.415	.018

a. Dependent Variable: NOK approval

The model examining the effect of TR affiliation, TR partnership building, and TR shared decision making on NOK questions while controlling for TR variables was significant,  $F(7, 94) = 4.16, p < .001$ . This analysis (presented below) shows that after controlling for TR variables, both TR affiliation and TR partnership building remained significant predictors of NOK questions in that when TRs engaged in these behaviors NOKs asked more questions. TR engaging in shared decision making was not a significant predictor.

Table 16

*Predictors of NOK Questions*

Model		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.293	.140		2.089	.039
	TR no. of requests	.020	.018	.119	1.114	.268
	TR race	-.037	.102	-.037	-.363	.717
	TR gender	-.056	.074	-.080	-.761	.448
	TR experience	.000	.002	.025	.249	.804
2	(Constant)	-.331	.281		-1.177	.242
	TR no. of requests	.023	.017	.139	1.409	.162
	TR race	.032	.093	.032	.338	.736
	TR gender	-.076	.067	-.107	-1.127	.263
	TR experience	.000	.002	.006	.065	.948
	TR affiliation	.111	.044	.251	2.529	.013
	TR partnership	.415	.136	.288	3.059	.003
	TR SDM	.099	.066	.150	1.511	.134

a. Dependent Variable: NOK questions

*1B.* The second hypothesis stated that when NOKs used more statements of approval, TRs would also use more positive/reinforcing statements (partnership, approval, reassurance, legitimization, concern, and empathy). This hypothesis was not supported. Pearson correlations showed that NOKs did not use more statements of approval when TRs used more positive/reinforcing statements, including partnership, approval, reassurance, legitimization, concern, and empathy ( $r = -.041, p > .05$ ). A hierarchical regression was then conducted to control for TR race, gender, experience, and number of requests. The relationship between TR and NOK approval was not significant, ( $R^2$  change= .010),  $\beta = -.102, p > .05$ .

## **Relationship between Behavioral and Interpersonal Variables and Consent or Refusal to Donate**

*Aim 2.* The second aim of the study was to examine how behavioral and informational aspects of the request relate to the donation decision. Logistic regressions were conducted with the dependent variable being a dichotomous variable of “yes” or “no” to the request to donate. Preliminary analyses were conducted to assess the effect of demographic variables on the donation decision. There were no significant relationships between consent/refusal and NOK age, race, gender, education, income, marital status, or relationship to the patient, or TR race, gender, or months of experience. However, there were significant differences in rates of consent/refusal related to NOK preferences about donating their own tissues and/or organs. Those who consented to donation were significantly more likely to say that they would donate their own tissues,  $X^2(2) = 17.05, p < .001$ . Therefore this variable was controlled for in analyses by entering it in block one of the logistic regressions. TR variables (TR race, gender, number of requests, and experience) were also entered in block one in order to control for TR effects. Predictor variables were entered in block two. Because of the number of variables investigated as well as different hypotheses being formed based on various previous studies of donation requests, standard regression analyses were conducted separately for each specific hypothesis.

2A. The first hypothesis posited that NOKs would be less likely to donate when TRs were perceived as making more statements of disapproval. Because TR disapproval occurred infrequently, a dichotomous variable was created and used for the analysis (0 = no statements of disapproval, 1 = 1 or more statements of disapproval). A logistic regression was conducted examining the effect of TR disapproval on NOK consent or refusal to donation. After controlling for the variables noted above, TR disapproval was a significant predictor,  $X^2(1) = 8.71, p = .003$ .

However, this variable did not appear to be significant when examining the associated output below.

Table 17

*Relationship between TR Disapproval and Donation Decision*

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 <sup>a</sup>	TR no. of request	.103	.134	.599	1	.439	1.109	.854	1.441
	TR race(1)	-.676	.797	.719	1	.396	.509	.107	2.425
	TR gender(1)	-.274	.534	.262	1	.609	.761	.267	2.168
	TR experience	-.013	.013	1.102	1	.294	.987	.962	1.012
	NOK willing to donate tissues			9.358	2	.009			
	NOK willing to donate tissues (1)	2.957	1.072	7.615	1	.006	19.249	2.356	157.267
	NOK willing to donate tissues (2)	1.614	1.331	1.470	1	.225	5.021	.370	68.149
	TR disapproval(1)	20.792	11729.375	.000	1	.999	1.071E9	.000	.
	Constant	-22.729	11729.375	.000	1	.998	.000		

a. Variable(s) entered on step 1: TR disapproval.

Further examination of the data showed perfect separation, indicating that TR statements of disapproval perfectly predicted consent or refusal to donation (see table below). In each of the ten cases in which the TR used one or more statements of disapproval, NOKs refused donation. However this violates the assumption of absence of perfect separation in binary logistic regression and makes this type of analysis invalid. It appears that while TR disapproval is likely a significant predictor of consent to donation, it is also likely that the complete absence of any NOKs consenting to donation when TRs use one or more statements of disapproval is related to small sample size.

Table 18

*Crosstabulation and Chi-Square Tests of NOK Donation Decision and TR Disapproval*

**Donate Y/N \* TR disapproval Crosstabulation**

Count

		TR disapproval		Total
		no disapproval statements	1 or more disapproval statements	
Donate Y/N	no	51	10	61
	yes	41	0	41
Total		92	10	102

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.452 <sup>a</sup>	1	.006		
Continuity Correction <sup>b</sup>	5.713	1	.017		
Likelihood Ratio	11.005	1	.001		
Fisher's Exact Test				.005	.004
Linear-by-Linear Association	7.379	1	.007		
N of Valid Cases	102				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.02.

b. Computed only for a 2x2 table

2B. The second hypothesis stated that NOKs would be more likely to consent to donation both when NOKs and TRs asked more questions. This hypothesis was partially supported. A logistic regression was conducted examining the effect of NOK and TR questions on consent or refusal, controlling for TR gender, race, experience, and number of requests, as well as NOK preferences for donating their own tissues. After controlling for these variables, the model was significant,  $X^2(8) = 44.83, p < .001$ . Both TR and NOK questions remained significant predictors of consent to donation. However, while as predicted NOKs were more likely to consent to donation when they asked more questions, they were also more likely to

consent to donation when TRs asked fewer questions.

Table 19

*Relationship Between TR and NOK Questions and Donation Decision*

		Variables in the Equation					95% C.I. for EXP(B)		
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1 <sup>a</sup>	TR no. of request	-.069	.154	.200	1	.654	.934	.691	1.262
	TR race(1)	-1.164	.885	1.728	1	.189	.312	.055	1.770
	TR gender(1)	-.440	.603	.534	1	.465	.644	.198	2.098
	TR experience	-.004	.014	.095	1	.758	.996	.969	1.023
	NOK willing to donate tissues			13.785	2	.001			
	NOK willing to donate tissues (1)	3.328	1.134	8.604	1	.003	27.869	3.017	257.481
	NOK willing to donate tissues (2)	.755	1.369	.304	1	.581	2.128	.145	31.135
	TR Questions	-3.353	.937	12.791	1	.000	.035	.006	.220
	NOK Questions	2.348	.888	6.994	1	.008	10.464	1.836	59.618
	Constant	-.374	1.498	.062	1	.803	.688		

a. Variable(s) entered on step 1: TR Questions, NOK Questions.

2C. The third hypothesis stated that NOKs would be more likely to donate when TRs used more persuasive techniques. This hypothesis was not supported. NOKs were not more or less likely to donate when TRs used more persuasive statements,  $X^2(1) = .19, p > .05$ . When controlling for TR factors and NOK preferences for donating their own tissues, the model was still not significant,  $X^2(1) = .33, p > .05$ . A logistic regression was then conducted to determine whether any use of persuasion (dichotomized as “yes” or “no” for whether there was at least one persuasive statement made by the TR) was related to consent or refusal to donate, while controlling for TR factors and NOK preferences for donating their own tissues. After controlling for these variables, TR use of persuasion was not found to be significant,  $X^2(1) = .29, p > .05$ .

2D. The fourth hypothesis stated that NOKs would be more likely to consent to donation when TRs were perceived as more affiliative, used more statements of partnership and supportive talk, and engaged in shared decision making to a greater extent. This hypothesis was partially supported. A logistic regression was conducted controlling for TR gender, race, experience, and number of requests, as well as NOK preferences for donating their own tissues. After controlling for these variables, the model was significant,  $X^2(10) = 38.84$ ,  $p < .001$ . NOKs were significantly more likely to donate tissue when TRs were perceived as more affiliative and used more supportive statements; TR statements of partnership was also a marginally significant predictor of NOK consent to donation.

Table 20

*Relationship Between TR Affiliation, Partnership, Supportive Talk, and Shared*

		Variables in the Equation					95% C.I. for EXP(B)		
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1 <sup>a</sup>	TR no. of requests	.112	.146	.589	1	.443	1.118	.841	1.488
	TR race(1)	-.756	.821	.848	1	.357	.470	.094	2.347
	TR gender(1)	-.300	.590	.259	1	.611	.741	.233	2.354
	TR experience	-.023	.015	2.337	1	.126	.977	.949	1.006
	NOK willing to donate tissues			12.121	2	.002			
	NOK willing to donate tissues (1)	3.761	1.162	10.472	1	.001	42.990	4.407	419.398
	NOK willing to donate tissues (2)	2.340	1.396	2.809	1	.094	10.376	.673	160.040
	TR affiliation	1.057	.416	6.463	1	.011	2.877	1.274	6.496
	TR partnership	2.416	1.350	3.202	1	.074	11.200	.794	157.933
	TR supportive	.819	.400	4.192	1	.041	2.268	1.036	4.965
	TR SDM	-.075	.557	.018	1	.893	.928	.312	2.763
	Constant	-2.830	2.693	1.104	1	.293	.059		

a. Variable(s) entered on step 1: TR affiliation, TR partnership, TR supportive, TR SDM

2E. The fifth hypothesis stated that NOKs would be more likely to consent to donation when TRs used more positive/reinforcing statements. This hypothesis was not supported. NOKs were neither more nor less likely to donate when TRs used more statements of approval, reassurance, legitimization, concern, and empathy,  $X^2(7) = 1.34, p > .05$ .

2F. The sixth hypothesis stated that NOKs would be more likely to consent to donation when the TR discussed certain "key" topics. This hypothesis was partially supported.

Table 21

*Relationship Between Discussion of Key Topics and Donation Decision*

		Variables in the Equation					95% C.I. for EXP(B)		
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1 <sup>a</sup>	TR no. of request	.050	.141	.124	1	.725	1.051	.797	1.386
	TR race(1)	-.617	.815	.573	1	.449	.540	.109	2.667
	TR gender(1)	-.571	.585	.954	1	.329	.565	.179	1.778
	TR experience	-.015	.013	1.351	1	.245	.985	.959	1.011
	NOK willing to donate tissues			10.858	2	.004			
	NOK willing to donate tissues (1)	3.195	1.108	8.318	1	.004	24.412	2.784	214.093
	NOK willing to donate tissues (2)	1.557	1.365	1.301	1	.254	4.743	.327	68.836
	Choice Y/N(1)	1.728	.785	4.850	1	.028	5.630	1.209	26.212
	Cost Y/N(1)	-.358	.751	.227	1	.633	.699	.161	3.044
	Distribution Y/N(1)	-.792	1.622	.239	1	.625	.453	.019	10.885
	Mutilation/appearance Y/N(1)	1.562	.754	4.287	1	.038	4.769	1.087	20.926
	Funeral delay Y/N(1)	.109	.580	.035	1	.851	1.115	.358	3.473
	Open casket Y/N(1)	-.852	.872	.955	1	.328	.426	.077	2.356
	Constant	-.967	2.201	.193	1	.661	.380		

a. Variable(s) entered on step 1: Choice Y/N, Cost Y/N, Distribution Y/N, Mutilation/appearance Y/N, Funeral delay Y/N, Open casket Y/N.



Logistic regressions were used to determine whether discussion of certain categories (coded “yes” or “no” as to whether the topic was discussed) were significantly related to consent or refusal to donation, while controlling for TR variables and NOK preferences for donating their own tissue. The model was significant,  $X^2(12) = 33.39$ ,  $p = .001$ . Two variables were found to be significant predictors of NOK consent to donation. NOKs were more likely to consent to donation when TRs discussed how NOKs could choose which tissues to donate, as well as when TRs discussed how donation would not lead to mutilation or significant change in appearance of the body.

*A model of significant predictors of consent to donation.* A final logistic regression was conducted examining the effects of the significant predictors identified above (TR questions, NOK questions, TR affiliation, TR supportiveness, discussion of NOK’s ability to choose which tissues to donate, discussion of how donation would not lead to disfigurement or excessive changes to the appearance of the body; TR disapproval could not be included because it violated the assumption of lack of perfect separation) on consent or refusal to donation, while controlling for TR variables and NOK preferences for donating their own tissues. After controlling for these variables, the model was significant,  $X^2(12) = 59.42$ ,  $p < .001$ . Whereas the model including control variables of TR race, gender, number of requests, and experience, and NOK preferences for donating their own tissues correctly classified 67.3% of cases, the final model including the above mentioned predictors correctly classified 81.2% of cases. Aside from NOK preferences for donating their own tissue, there were three predictor variables found to be significant: NOKs were more likely to consent to donation when TRs asked fewer questions, used more supportive statements, and discussed the fact that donation would not lead to disfigurement or affect the appearance of the body.

Table 22

*Relationship between TR Questions, NOK questions, TR Affiliation, TR Supportive Talk, Discussion of NOK's Ability to Choose Which Tissues to Donate, and Discussion of Mutilation or Other Change in Appearance to the Body and Donation Decision*

		Variables in the Equation						95% C.I. for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1 <sup>a</sup>	TR no. of requests	.104	.186	.315	1	.575	1.110	.771	1.598
	TR race(1)	-1.678	1.056	2.526	1	.112	.187	.024	1.479
	TR gender(1)	-.293	.724	.163	1	.686	.746	.181	3.084
	TR experience	-.012	.017	.530	1	.467	.988	.955	1.021
	NOK willing to donate tissue			12.467	2	.002			
	NOK willing to donate tissue (1)	3.838	1.246	9.487	1	.002	46.442	4.038	534.103
	NOK willing to donate tissue (2)	1.662	1.449	1.316	1	.251	5.272	.308	90.234
	TR questions	-4.089	1.141	12.851	1	.000	.017	.002	.157
	NOK questions	1.692	1.156	2.141	1	.143	5.429	.563	52.349
	TR affiliation	.718	.484	2.202	1	.138	2.050	.794	5.288
	TR supportive	1.097	.525	4.364	1	.037	2.996	1.070	8.386
	Choice Y/N(1)	-.111	1.062	.011	1	.917	.895	.112	7.173
	Mutilation/appearance Y/N(1)	1.684	.703	5.733	1	.017	5.385	1.357	21.365
	Constant	.839	2.312	.132	1	.717	2.315		

a. Variable(s) entered on step 1: TR questions, NOK questions, TR affiliation, TR support, choice Y/N, mutilation/appearance Y/N.

### **Relationship between Race and Gender Matching/TR Demographics and Consent or Refusal to Donate**

A secondary aim of this study was to explore how requester characteristics relate to interaction variables and donation outcomes. Two dummy variables were created to represent racial match (0 = no match, meaning African American-Caucasian dyad; 1 = match, meaning either African American-African American dyad or Caucasian-Caucasian dyad) and gender

match (0 = no match, meaning male-female dyad; 1 = match, meaning either male-male dyad or female-female dyad). Univariate analyses of variance were used to examine the effect of racial and gender match on interpersonal behavior while controlling for TR race, gender, experience, and number of requests. Two-way ANOVAs were conducted to examine the interaction effects of dichotomous demographic variables (e.g., TR race, NOK gender) on interpersonal behavior.

A. The first hypothesis of this aim stated that both TR and NOK would be perceived as more affiliative and approving when there was a “match” between TR and NOK gender and race. Initial t-tests showed no significant relationships between gender match and TR and NOK affiliation or statements of approval. Univariate analyses were first conducted on the relationship between gender match and TR positive/reinforcing statements, taking into account TR variables (race, experience, number of requests); this relationship was not significant  $F(1, 96) = .01, p > .05$ . Univariate analyses were then conducted on the relationship between gender match and NOK statements of approval, taking into account TR variables as well as NOK marital status as this was previously found to be related to NOK statements of approval; this relationship was not significant  $F(1, 95) = 1.21, p > .05$ . Univariate analyses were then conducted on the relationship between gender match and TR affiliation, taking into account TR variables; this relationship was not significant  $F(1, 96) = .165, p > .05$ . Univariate analyses were then conducted on the relationship between gender match and NOK affiliation, taking into account TR variables as well as NOK gender as this was previously found to be related to NOK affiliation; this relationship was significant  $F(1, 96) = 2.78, p = .039$ . NOKs were perceived as more affiliative when there was a gender match between TR and NOK ( $M = 0.30, SD = 0.79$ ) than when there was not a gender match ( $M = 0.05, SD = 0.82$ ).

Regarding analyses examining the effect of racial match, initial t-tests showed no

significant relationships between racial match and TR and NOK affiliation or statements of approval. Univariate analyses of variance were conducted to control for the TR variables of gender, race, experience, and number of requests. Univariate analyses were first conducted on the relationship between racial match and TR positive/reinforcing statements, taking into account TR variables; this relationship was not significant  $F(1, 96) = 0.08, p > .05$ . Univariate analyses were then conducted on the relationship between racial match and NOK statements of approval, taking into account TR variables as well as NOK marital status; this relationship was not significant  $F(1, 95) = 0.95, p > .05$ . Univariate analyses were then conducted on the relationship between racial match and TR affiliation, taking into account TR variables; this relationship was not significant  $F(1, 96) = 0.41, p > .05$ . Univariate analyses were then conducted on the relationship between racial match and NOK affiliation, taking into account TR variables as well as NOK gender; this relationship was not significant  $F(1, 96) = 0.07, p > .05$ . Overall, the only significant relationship found was that NOKs were more affiliative when there was a gender match between TR and NOK.

*B.* The second hypothesis stated that male TRs would be more controlling than female TRs and would be more affiliative with Caucasian NOKs, while female TRs would be less affiliative with Caucasian NOKs. A univariate analysis of variance was conducted in order to examine the relationship between TR gender and TR control while controlling for TR race, experience, and number of requests; the relationship was not significant,  $F(1, 97) = 0.80, p > .05$ . A two-way ANOVA was then conducted to examine the effect of TR gender and NOK race on TR affiliation, controlling for TR race, experience, and number of requests. TR gender, NOK race, and the interaction of these two variables were not significantly related to TR affiliation.

Table 23

*Effect of TR Characteristics, NOK Race, and TR Gender-NOK Race Interaction on TR Affiliation*

**Tests of Between-Subjects Effects**

Dependent Variable: TR affiliation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2.207 <sup>a</sup>	6	.368	.681	.666
Intercept	7.721	1	7.721	14.289	.000
TR no. of request	.854	1	.854	1.580	.212
TR experience	.536	1	.536	.992	.322
TR race	.076	1	.076	.141	.708
TR gender	.375	1	.375	.694	.407
NOK race	.121	1	.121	.225	.636
TR gender * NOK race	.018	1	.018	.033	.855
Error	51.331	95	.540		
Total	122.597	102			
Corrected Total	53.538	101			

a. R Squared = .041 (Adjusted R Squared = -.019)

Overall this hypothesis was not supported. Male tissue requesters were not perceived as more controlling than female tissue requesters. Neither male nor female TRs were significantly more or less affiliative with Caucasian vs. African American NOKs.

C. The third hypothesis stated that African American TRs would be perceived as more controlling than Caucasian TRs, as well as using more positive affect when interacting with African American NOKs while Caucasian requesters would use more positive affect when interacting with Caucasian NOKs. It was further hypothesized that there would be an interaction effect, where these differences would be especially true for female TRs. A univariate analysis of variance was conducted to examine the relationship between TR race and TR control, while controlling for TR gender, experience, and number of requests, as well as NOK education as this was previously been found to be related to TR control. The relationship was not significant,  $F(1,$

96) = 0.44,  $p > .05$ . A two-way ANOVA was then conducted to examine the effects of TR and NOK race on TR affiliation, controlling for TR gender, experience, and number of requests. The analysis was not significant.

Table 24

*Effect of TR Characteristics, NOK Race, and TR Race-NOK Race Interaction on TR Affiliation*

**Tests of Between-Subjects Effects**

Dependent Variable: TR affiliation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2.245 <sup>a</sup>	6	.374	.693	.656
Intercept	14.033	1	14.033	25.990	.000
TR no. of request	.851	1	.851	1.576	.212
TR experience	.535	1	.535	.991	.322
TR gender	.726	1	.726	1.345	.249
NOK race	.008	1	.008	.015	.903
TR race	.127	1	.127	.234	.629
NOK race * TR race	.056	1	.056	.104	.748
Error	51.293	95	.540		
Total	122.597	102			
Corrected Total	53.538	101			

a. R Squared = .042 (Adjusted R Squared = -.019)

Overall this hypothesis was not supported. African American TRs were not perceived as more controlling than Caucasian TRs. Neither Caucasian nor African American TRs were perceived as being more or less affiliative with Caucasian vs. African American NOKs.

D. The fourth hypothesis stated that next-of-kin will be more likely to donate when there was a “match” between NOK and TR gender and ethnicity. Logistic regression analyses were used to examine the relationship between racial/gender match and consent or refusal to donation, while controlling for TR race, gender, experience, number of requests, as well as NOK willingness to donate their own tissues. Logistic regressions showed that, after controlling for these variables, there was no significant relationship between gender match and consent/refusal

( $X^2(1) = 0.30, p > .05$ ) or between racial match and consent/refusal ( $X^2(1) = 1.12, p > .05$ ).

Overall this hypothesis was not supported. NOKs were not more likely to donate when there was a “match” between NOK and TR gender or ethnicity.

## Discussion

This study examined the communication process between tissue requesters and next-of-kin during routine requests for consent to donation of tissues of recently deceased individuals made via telephone. The study also evaluated demographic and interpersonal/behavioral predictors of consent and refusal to donation. Trained raters were used to assess the interpersonal behavior of both tissue requester and next-of-kin in several domains, including affect, decision-making, and participation in the discussion.

### Description of the Interaction

Both TRs and NOKs were perceived as relatively friendly, and not particularly dominant, submissive, or hostile. This is consistent with past research on interpersonal control and affiliation during physician-patient (Campbell et al., 2007) and organ donation (Baughn et al., 2010) interactions. TRs tended to engage NOKs in the decision-making process by asking about values and preferences and discussing how donation decisions were ultimately up to the NOK. There were few statements of collaboration and interpersonal disclosure (as measured by the Street system), and these types of utterances occurred less frequently in this sample than in past studies of doctor-patient communication (Dorflinger, 2009; Street et al., 2005). Target behaviors may have been more frequent in the Street sample for a number of reasons, such as having a previously existing and stronger relationship between doctor and patient than NOK and TR, longer encounter period (length of the encounter was not reported in the Street paper), or other

differences in information exchange and personal disclosure in each type of interaction.

Although all types of target utterances were relatively infrequent, NOKs were significantly more likely to be assertive than express concern to the TR, and TRs were more likely to use statements of partnership building (e.g., asking about NOK preferences, checking NOK understanding) than supportiveness (e.g., empathic or reassuring statements), and were even less likely to use directive or controlling statements. Both TRs and NOKs varied a great deal in the number of questions asked during the discussion, but both tended to ask about five or fewer questions during the discussion. Some type of persuasion was used by TRs in about 83% of cases, though the number of persuasive statements was generally low (about 2 persuasive statements per conversation). The high incidence of use of persuasion is consistent with a prior study of organ procurement coordinators' reports of communication techniques employed during requests for organ donation; that study reported that almost one-half of organ procurement coordinators purposefully discuss the benefits of donation prior to asking about the NOK's preferences for donation as a method of persuasion (Anker, 2011). In the majority of the cases, persuasion took the form of a foot-in-the-door technique in which TRs associated themselves with the hospital or funeral home, perhaps to enhance their familiarity and trustworthiness. TRs were frequently reassuring and empathic with NOKs during the requests, and made disapproving statements very infrequently, which is consistent with past research (Siminoff & Step, 2011). NOKs also made few disapproving statements during the requests, a point that was also reported in a study of organ procurement coordinators' perceptions of the communication process during organ donation requests (Anker, 2011).

The study findings therefore suggest that, while overall both TRs and NOKs tended to be relatively friendly and more often than not were collaborative and used positive affect, neither



TRs nor NOKs were particularly expressive during donation requests. This could be a function of a number of factors. The requests represented the first contact between TRs and NOKs, and therefore each party was essentially talking to someone they had not met before, and likely would not converse with again. Therefore the lack of expressiveness could be a result of a natural inclination towards restraint when speaking with someone with whom one is unfamiliar (about an intimate topic) and where neither party is looking to establish a lasting relationship. This may explain why past studies have reported more expressiveness in consultations between doctors and patients, where there is likely an existing relationship or one that is being formed in the expectation that it will continue (Campbell et al., 2007; Dorflinger, 2009; Street et al., 2005; Street & Millay, 2001). Similarly, there may be more expressed affect in doctor-patient consultations as those encounters are generally face-to-face, whereas the donation requests used in this study were made over the phone. In addition, NOKs were generally contacted only hours after the passing of their loved ones. Although one might assume that NOKs would be highly emotional and expressive during this time, this study suggests that perhaps they may still have been in shock and therefore not very expressive when speaking with TRs. Similarly, while TRs were generally somewhat empathic and friendly, they were not overly so. This may be because interactants tend to match each other on affiliation (Kiesler, 1983; Kiesler & Auerbach, 2006a), and therefore neither interactant elicited a strong emotional reaction from the other because they were not particularly expressive themselves. Further, it is likely that TRs purposefully broached the topic of donation in a specific way so as to minimize the likelihood of an emotional reaction from the NOK. Weathersbee and Maynard (2009) analyzed the sequence of statements in tissue donation requests using conversation analysis, and showed that TRs tended to approach the topic in a cautious and tacit manner, which is likely to have elicited an equally restrained response

from the NOK. Finally, although this study used several different measures of behavior using both interpersonal ratings as well as frequency counts of various interpersonal behaviors, it is possible that the measures used failed to capture other important interpersonal or behavioral aspects of the request.

### **Relationships among Interaction Variables**

There were a number of significant relationships among interaction variables. NOKs were less assertive but more approving when TRs used more statements of persuasion. Given that the most common persuasive technique used by TRs was foot-in-the-door, it is possible that NOKs were less assertive when TRs were more persuasive because they had an intrinsic trust toward the TR after the TR alluded to his or her connection with the hospital where the patient had stayed or the funeral home the NOK had chosen to use. There were several TR behaviors that were associated with NOKs asking more questions, which is important because NOKs asking more questions was a significant predictor of consent to donation and past research has indicated that NOKs are more likely to consent to donation when requesters answer NOK questions about donation (Siminoff et al., 2001). NOKs tended to ask more questions when TRs were more approving, were more affiliative, engaged in shared decision making, and made more statements of partnership. Therefore it appears that by engaging in these behaviors TRs may elicit more question-asking by NOKs (perhaps by creating a positive and collaborative atmosphere), which in turn may made it more likely that NOKs consent to donation.

Certain TR behaviors tended to cluster together: when TRs used more statements of approval, they also tended to ask more questions, and make more statements of partnership, while when TRs were more affiliative they also made more statements aimed at engaging in shared decision making. TRs infrequently (9.7% of cases) made one or more statements of

disapproval; however, TRs making any statements of disapproval was significantly associated with several other interpersonal variables. TRs who made many statements of disapproval were also perceived as less affiliative and made fewer statements of partnership and support. In addition, when the TR they were speaking with made one or more statements of disapproval NOKs made more statements expressing disapproval and concern and were perceived as less affiliative. Because of the correlational nature of the analyses it is unclear whether TRs were more likely to make statements of disapproval when NOKs were less affiliative and more concerned and/or disapproving themselves or vice versa, but either way these findings again reinforce the overall concept of affect/emotional complementarity between TR and NOK. Regarding variables on the interpersonal circumplex, TRs and NOKs tended to “match” on affiliation (when one was more affiliative, the other was perceived as more affiliative as well) and complement one another on control (when one was more controlling, the other was perceived as less controlling). These findings are consistent with past research (Kiesler, 1983; Kiesler & Auerbach, 2006a). In addition, when TRs were perceived as more affiliative, they were also perceived as less controlling.

### **Relationships between Demographics and Aspects of the Interaction**

There were significant relationships between TR and NOK demographic variables and interpersonal/behavioral aspects of the request. Regarding NOK demographics, female NOKs were perceived as more affiliative than males. Married or cohabitating NOKs were more approving than those who were widowed, perhaps because those whose spouses had just passed away understandably felt less positively about the donation process or request, or were less able to express gratitude due to their grief. Interestingly, TRs asked more questions when speaking with NOKs who did not know if they would want to donate their tissues and/or organs than

NOKS who knew that they would not want to donate their own tissues and/or organs. This is particularly curious because the NOKs' preferences for donation of their own tissues and organs were discussed occasionally during the requests, but not frequently. Therefore perhaps NOKs who were unsure of their preferences about being a donor themselves differed interpersonally from those who were sure they would want not to be a donor, in such a way as to elicit specific behaviors from TRs, namely, to ask more questions. Conversely, it is possible that when TRs asked more questions during the donation discussion, this somehow made NOKs more uncertain about their future preferences for being a donor themselves, given that the interviews asking NOKs about their preferences for being a donor were generally conducted about two months after the donation request. Finally, when NOKs had more education they were also perceived as more affiliative, and TRs were perceived as more controlling. It is possible that NOKs with more education had more knowledge about tissue donation and therefore were perceived as warmer and friendlier because they were not concerned or surprised by the request, and were therefore also more submissive which elicited a more dominant response from the tissue requester.

Regarding TR demographics, TRs with more experience used more approving statements and more supportive statements than TRs with less experience. This finding suggests that perhaps with time TRs learn to be supportive and maintain a positive affect even when speaking with NOKs who may initially, and understandably, be emotional when discussing the tissue donation process.

### **Relationships between Behavioral and Interpersonal Variables and Aspects of the Interaction**

The first aim of the study was to examine relationships among interpersonal and

behavioral aspects of the request. These analyses showed a number of significant relationships among TR and NOK variables of positive affect and collaboration/participation. TRs and NOKs were perceived as more affiliative when the "other" was perceived as more affiliative as well, and NOKs were also perceived as more affiliative when TRs made more statements indicative of engagement in shared decision making. In addition, NOKs made more statements of approval when TRs were more affiliative and more supportive. These findings are consistent with Street and Millay's (2001) conceptualization of the positive affect and partnership of each interactant leading to a "cycle of collaboration and rapport", as well as the concept that in regards to affiliation "like attracts like" (Kiesler, 1983; Kiesler & Auerbach, 2006a).

### **Relationships between Behavioral and Interpersonal Variables and Consent or Refusal to Donate**

The second aim of the study was to examine how TR and NOK behavior and expressed affect related to NOK the donation decision. NOKs were more likely to consent to donation when they asked more questions, as well as when TRs were more affiliative and did not make statements expressing disapproval. Interestingly, NOKs were also more likely to consent to donation when TRs asked fewer questions. This may be related to two specific question-asking patterns that occasionally occurred during the interactions in which TRs asked more questions. In some interactions, TRs tended to give only a vague introduction of themselves and their role, and proceeded to ask a number of general questions (e.g., how the NOK is feeling, if the NOK has family with him or her, if the NOK would like contact information for grief counselors, etc.) before finally broaching the topic of tissue donation. It is possible that NOKs, who initially may have thought they were receiving a call of general consolation to "check in" on how they were feeling, felt manipulated when they realized what the true intent of the call was and thus refused.

A second pattern of increased TR question-asking noted during coding generally occurred later in the conversation. It seemed that in some cases the TR began to realize that the NOK s/he was speaking with was learning towards refusal, and therefore the TR began to ask a number of questions to try to "save" the request (e.g., by asking if the NOK was aware that there could still be an open casket funeral, asking the NOK is s/he thought the deceased might have wanted to be a donor) which may have actually further discouraged NOKs from consenting. The use of persuasive techniques by the TR was not related to consent or refusal to donation. This finding may be due to several factors. On average TRs made about two persuasive statements during each request, and it may be that as persuasive statements comprised only a fraction of the total number of utterances made during the request, TRs were not "persuasive enough" to affect consent rates. This could be viewed in a positive light, in that perhaps TRs attempted to maintain neutrality and encourage NOK autonomy by minimizing persuasion. Because foot-in-the-door was the most commonly used persuasive technique, it is possible that persuasive statements aimed at inducing feelings of guilt or altruism would have been more influential on consent rates but that they were used too infrequently to make a difference. Of course, it is also possible that TR persuasion simply does not affect the NOK's likelihood of consent or refusal to donation.

There were mixed, but very interesting results regarding the discussion of key donation topics and NOK consent or refusal to donation. Overall, NOKs were more likely to consent to donation when TRs discussed how NOKs could choose which tissues to donate and that donation would not lead to disfigurement or other major changes in appearance to the body. While there has been little previous literature specific to tissue donation to compare these findings to, they are consistent with past research showing that, for example, families are concerned about

potential disfigurement resulting from donation (Anker, 2011) indicating that discussion and clarification of these topics would likely increase consent rates.

### **Relationships between Race and Gender Matching/TR Demographics and Consent or Refusal to Donate**

A secondary aim of the study was to examine the relationship between TR demographics and TR and NOK gender/race "match" and the outcome variable of NOK consent or refusal to donation, based primarily on the previous findings of Baughn and colleagues (2010). NOKs were perceived as more affiliative when there was a gender match between the NOK and TR (male-male dyad or female-female dyad) than when there was not a match. It is possible that NOKs were friendlier with TRs of the same gender because they formed a stronger connection and could relate more to TRs of the same gender. However none of the other hypotheses regarding TR and NOK gender and racial match were significant. While the effects of gender and racial matching should be further explored in future studies, it is possible that no effect was found for matching of TR and NOK race because requests were conducted over the phone. While the gender of the "other" can be perceived quite easily over the phone, it is typically much more difficult to ascertain the "others'" racial/ethnic background; this may explain why NOKs were perceived as more affiliative when speaking with an NOK of the same gender while no significant effect was found for race. There were also no significant differences in TR affiliation based on TR gender or race, or whether TRs were interacting with Caucasian or African American NOKs. Finally, NOKs were not significantly more or less likely to consent to donation when there was a gender or racial match between the TR and NOK.

Interestingly, although the present findings did not support the "matching" hypothesis, a study by Anker (2011), in which organ procurement coordinators were interviewed about the

request process, found that when asked about suggestions for how the donation request process could be changed, about 15% of procurement coordinators suggested using a "like-requester" approach, meaning a requester of the same cultural or racial background as the NOK.

### **Concluding Comments and Study Limitations**

There were several limitations to the current study. First, because the sample was selected based on criteria aimed at isolating cases in which NOKs did not have strong a priori preferences regarding donation and did not have any of the characteristics (e.g., knowledge of the deceased's wishes, deceased under the age of 18) previously shown to significantly affect donation rates, the sample size (n = 102 NOKs), was relatively small given the number of variables studied, and the number of African American participants was particularly small as only 15.1% of the sample was African American. In addition, many of the criteria were based on post-request interview data that may have been affected by NOK recall. For example, NOKs were asked about their initial reaction when first asked about donation, and those who indicated they either were strongly in favor of or strongly against donation were eliminated from the sample because they were significantly more likely to consent or refuse donation, respectively. However, because the interviews were generally conducted about two months after the donation request, the memory of NOKs about their initial reaction could have been influenced by their knowledge of the donation decision they ultimately made, as in the example of those who consented to donate and recalled that they had immediately felt positively about the request. Also, NOKs memory may have been affected by both time elapsed and the emotional load of the experience so that those who, for example, recalled being ambivalent may actually have made a decision quite quickly. It should be noted that the approximate 2 month post-request interval was selected in a compromise attempt to maximize recall of the interaction and also give NOKs time



to mourn their loss.

Another limitation of the current study relates to the frequency of TR requests. All TRs made a number of requests for tissue donation. The original study design aimed to use only unique NOK-TR dyads in order to limit the effect of individual TR characteristics on the study's findings. However, after implementing the exclusion criteria only 102 cases remained, and if the sample had been limited to only those cases in which a unique TR conducted the request the sample size would have been halved. In order to reconcile the need to both maximize sample size and account for TR characteristics that could potentially affect consent rates, all 102 cases were retained and TR characteristics (race, gender, experience, and number of requests in the sample) were used as covariates to attempt to control for these characteristics. However, in a larger study or a study with less stringent exclusion criteria, ideally only unique TR-NOK dyads would be included in the study sample so as to avoid the difficulty encountered in the current study in which about half of the cases would require dyadic data analysis and the other half nested analyses.

The generalizeability of the findings may also be somewhat limited. The 102 cases included in the study are only a relatively small, though relevant, subset of the larger group of cases. As noted above, while the initial sample came from a number of tissue banks across the country and are therefore representative in that manner, a number of exclusion criteria were employed in an attempt to limit the study sample to those for whom consent or refusal to donation was less likely to be significantly predicted based on predispositional variables or prior experiences assessed during the post-request interview. Specifically, NOKs who had strong preferences regarding donation prior to the request, felt favorably or unfavorably (rather than neutral) when first asked about donation, were NOKs to deceased under the age of 18, or were

NOKs to deceased who had previously signed a donor card or had other legal documentation stating their intention to be a donor, were all excluded from the study sample because these factors were found to significantly predict consent or refusal to donation, and likely would have influenced the NOK's decision over and above any demographic or interactional variables, thus making the analysis of these variables superfluous. However, by implementing these exclusion criteria the remaining sample was only representative of a subset of requests, i.e. those in which the NOK was indecisive enough to converse with the TR for at least two minutes, the deceased was an adult, and NOKs were unaware of the deceased's preferences regarding tissue donation. Therefore, although these requests were obtained from a number of different tissue banks from geographically diverse areas and are thus likely representative of requests in which the exclusion criteria apply, they are not necessarily representative of the overall population of tissue donation requests.

Other limitations of the study include the inter-rater reliability of the coding measures as well as problems in drawing conclusions when using analyses where directionality cannot be determined. Although the inter-rater reliability of most measures in this study was adequate especially compared to other studies using measures evaluating interpersonal behavior, which is inherently a subjective process, the reliability of some of the subscales (i.e., subscales of the IMI, PSPS, and Street system) did not reach the "ideal" level of 0.80 and therefore findings with these measures should be interpreted with some caution. In addition directionality cannot be determined from correlational analyses that, for example, show that NOKs tend to ask more questions when TRs are more affiliative, meaning that we cannot determine whether one behavior in particular tends to elicit the other or whether each of these behaviors serves to elicit the other as the two interactants build a partnership with one another.

There are a number of different avenues for related research to pursue in the future. To our knowledge this is one of the first studies of the interpersonal process during tissue donation requests, and likely the first using multiple measures of interpersonal interaction and decision making. Future studies, ideally with larger sample sizes to increase power, are needed to cross-validate the findings of the current study. For example, statements of disapproval from the TR were quite uncommon in this study, and the TR use of one or more statements of disapproval perfectly predicted refusal to consent to donation. It is unlikely that statements of disapproval perfectly predict a negative donation decision in the total population, but a re-evaluation of this finding would be of great value because of its implications for training TRs. In addition, although the present findings were not consistent with those of Baughn and colleagues (2010) regarding the effects of TR and NOK gender and/or racial “match” on interpersonal variables in simulated organ donation requests, the "match" hypothesis merits continued evaluation especially in light of Anker's (2011) interview findings with NOKs which were noted earlier. In addition future research could examine the effects of tissue requester training targeting interpersonal factors specifically found to significantly predict consent to donation, and whether incorporating trainings aimed at optimizing TR interpersonal behavior leads to the expected increase in consent to donation. For example, if NOKs are more likely to consent to donation when they are made aware of certain aspects of donation (in this study, for example, higher consent rates when there was discussion of NOKs having the ability to choose which tissues to donate and that donation would not lead to body disfigurement), TRs could be required to discuss these key aspects of donation early on in the discussion. Additional TR training aimed at interpersonal skills could also be helpful, because NOKs were more likely to consent to donation when TRs were friendlier, more supportive, less disapproving, and encouraged NOKs to ask

questions. It would also be interesting to study whether “optimized” TR interpersonal behavior can outweigh NOK pre-request bias about donation, i.e., for NOKs who initially feel inclined to refuse donation to assess whether TRs' use of specific interpersonal strategies might influence NOK's ultimate decision making. In conclusion, although the current study provides important new findings about the interpersonal behavior of both parties during the tissue donation discussion and about TR interpersonal behaviors that are associated with NOK decision to donate, this area is understudied and there is a need for continuing research geared at understanding how interpersonal behavior during the request process affects consent rates, which in turn affects the number of tissues available for transplantation as well as research and education opportunities.

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## Appendix A

### Measures

## Impact Message Inventory-IMI-Next-of-Kin on Tissue Requester

Respond to each of the following items by circling the number on the 4-point scale AS IF YOU WERE THE NEXT-OF-KIN

1- Not at all

2- Somewhat

3- Moderately so

4- Very Much So

WHEN I SPOKE TO THE TISSUE REQUESTER S/HE MADE ME FEEL.....

1. bossed around. 1----2----3----4
2. distant from him/her. 1----2----3----4
3. like an intruder. 1----2----3----4
4. in charge. 1----2----3----4
5. appreciated by him/her. 1----2----3----4
6. part of the group when s/he's around. 1----2----3----4
7. forced to shoulder all the responsibility. 1----2----3----4
8. complimented. 1----2----3----4
9. dominant. 1----2----3----4
10. welcome with him/her. 1----2----3----4
11. as important to him/her as others. 1----2----3----4
12. taken charge of. 1----2----3----4
13. that I want to tell him/her to give someone else a chance to make a decision. 1----2----3----4
14. that I want him/her to disagree with me sometimes. 1----2----3----4
15. that I could lean on him/her for support 1----2----3----4
16. that I'm going to intrude. 1----2----3----4
17. that I should tell him/her to stand up for himself. 1----2----3----4
18. that I can ask him/her to carry his share of the load. 1----2----3----4
19. that I want to point out his/her good qualities to him/her. 1----2----3----4
20. that s/he wants to be the center of attention. 1----2----3----4
21. that s/he doesn't want to get involved with me. 1----2----3----4
22. that s/he wants me to put him on a pedestal. 1----2----3----4
23. that s/he'd rather be alone. 1----2----3----4
24. that s/he thinks s/he's always in control of things. 1----2----3----4
25. that s/he thinks I have most of the answers. 1----2----3----4
26. that s/he weighs situations in terms of what s/he can get out of them. 1----2----3----4
27. that s/he'd rather be left alone. 1----2----3----4
28. that s/he sees me as superior. 1----2----3----4

## Impact Message Inventory-IMI-Tissue Requester on Next-of-Kin

Respond to each of the following items by circling the number on the 4-point AS IF YOU WERE THE TISSUE REQUESTER.

1- Not at all

2- Somewhat

3- Moderately so

4- Very Much So

WHEN I SPOKE TO THE NEXT-OF-KIN S/HE MADE ME FEEL.....

1. bossed around. 1----2----3----4
2. distant from him/her. 1----2----3----4
3. like an intruder. 1----2----3----4
4. in charge. 1----2----3----4
5. appreciated by him/her. 1----2----3----4
6. part of the group when s/he's around. 1----2----3----4
7. forced to shoulder all the responsibility. 1----2----3----4
8. complimented. 1----2----3----4
9. dominant. 1----2----3----4
10. welcome with him/her. 1----2----3----4
11. as important to him/her as others. 1----2----3----4
12. taken charge of. 1----2----3----4
13. that I want to tell him/her to give someone else a chance to make a decision. 1----2----3----4
14. that I want him/her to disagree with me sometimes. 1----2----3----4
15. that I could lean on him/her for support 1----2----3----4
16. that I'm going to intrude. 1----2----3----4
17. that I should tell him/her to stand up for himself. 1----2----3----4
18. that I can ask him/her to carry his share of the load. 1----2----3----4
19. that I want to point out his/her good qualities to him/her. 1----2----3----4
20. that s/he wants to be the center of attention. 1----2----3----4
21. that s/he doesn't want to get involved with me. 1----2----3----4
22. that s/he wants me to put him on a pedestal. 1----2----3----4
23. that s/he'd rather be alone. 1----2----3----4
24. that s/he thinks s/he's always in control of things. 1----2----3----4
25. that s/he thinks I have most of the answers. 1----2----3----4
26. that s/he weighs situations in terms of what s/he can get out of them. 1----2----3----4
27. that s/he'd rather be left alone. 1----2----3----4
28. that s/he sees me as superior. 1----2----3----4

PSPS (Adapted Version for Organ and Tissue Donation) – Rater

**DIRECTIONS:** We want to know how you feel about the interaction between the tissue requester and next-of-kin. Respond to the following items by checking (☑) the box on each 5-point scale that best represents your view of what happened during the interaction.

**DURING THE INTERACTION, THE TISSUE REQUESTER .....**

1. encouraged the NOK to talk about any personal concerns s/he had regarding aspects of donation

1. Strongly disagree	2. Disagree somewhat	3. Am uncertain	4. Agree somewhat	5. Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. made the NOK feel comfortable enough to ask questions and seek explanations

1. Strongly disagree	2. Disagree somewhat	3. Am uncertain	4. Agree somewhat	5. Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. took the NOK's preferences into account when deciding about donation

1. Strongly disagree	2. Disagree somewhat	3. Am uncertain	4. Agree somewhat	5. Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. made the NOK feel comfortable enough to question the TR's recommendations

1. Strongly disagree	2. Disagree somewhat	3. Am uncertain	4. Agree somewhat	5. Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. considered the NOK's personal goals and feelings in arriving at the donation decision

1. Strongly disagree	2. Disagree somewhat	3. Am uncertain	4. Agree somewhat	5. Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. made sure the NOK understood donation and its risks/consequences

- |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Strongly disagree     | 2. Disagree somewhat     | 3. Am uncertain          | 4. Agree somewhat        | 5. Strongly agree        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

7. supported the NOK's choice even if s/he didn't follow the TR's recommendation

- |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Strongly disagree     | 2. Disagree somewhat     | 3. Am uncertain          | 4. Agree somewhat        | 5. Strongly agree        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8. got the NOK to state his/her donation preference

- |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Strongly disagree     | 2. Disagree somewhat     | 3. Am uncertain          | 4. Agree somewhat        | 5. Strongly agree        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

9. provided the NOK an equal role in arriving at decisions about donation

- |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Strongly disagree     | 2. Disagree somewhat     | 3. Am uncertain          | 4. Agree somewhat        | 5. Strongly agree        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## Street System

Please tally when you hear an utterance that falls into one of the following categories **IN BOLD**  
(examples are given beneath each category)

### **NEXT-OF-KIN ASSERTIVE RESPONSES**

Interrupting  
Introducing new topic  
Talking about beliefs  
Disagreeing

### **NEXT-OF-KIN EXPRESSIONS OF CONCERN**

Expresses sadness, fear, worry, concern (may also be apparent from tone of voice)

### **TISSUE REQUESTER PARTNERSHIP BUILDING**

Attempt to involve the NOK in the discussion/decision making, primarily by:  
Open-ended questions about NOK's feelings or ideas  
Requests for NOK's preferences/expectations/goals  
Checking NOK understanding  
Statements/questions that encourage NOK decision making/participation  
"Working with" the NOK (e.g., agreement to fulfill a request)

### **TISSUE REQUESTER DIRECTIVE/CONTROLLING BEHAVIOR**

Recommendation or directive  
Interruption  
Sharp transition  
Giving opinion

### **TISSUE REQUESTER SUPPORTIVE TALK**

Reassurance  
Encouragement  
Praise  
Comforting/supportive talk  
Agreeing  
Responding to or rephrasing NOK's feelings or values  
Empathy



## VITA

Lindsey Dorflinger was born on February 15, 1984 in Summit, New Jersey. She graduated from Chatham High School in Chatham, New Jersey in 2002. She graduated magna cum laude from the University of Richmond in 2006 with a B.A. in psychology, and entered the doctoral program in Clinical Psychology at Virginia Commonwealth University in the fall of 2006. She received a Master of Science degree in Clinical Psychology from VCU in 2009 and defended her doctoral dissertation in August, 2011; her doctoral degree in Clinical Psychology with a concentration in Behavioral Medicine will be conferred in December, 2011. She completed her pre-doctoral internship at VA Connecticut Healthcare System with a focus in Clinical Health Psychology, and is currently a Clinical Health Psychology postdoctoral fellow at VA Connecticut.