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"MY LOSS IS YOUR GAIN": EXAMINING THE ROLE OF MESSAGE FRAME, PERCEIVED RISK, AND AMBIVALENCE IN THE DECISION TO BECOME AN ORGAN DONOR

by

ELIZABETH COHEN

Under the Direction of Cynthia Hoffner

ABSTRACT

The decision to become an organ donor involves considering both self-relevant risks and the needs of others. This study applied prospect theory to examine how message frames that focus on the possible survival or death of a potential organ transplant recipient affect participants' willingness to become organ donors. Perceived personal risk and ambivalence were examined as moderating variables. Results indicate that risk, rather than ambivalence, played an instrumental role in participants' decisions to donate. Although no main effects or interactions related to message frame emerged in initial analyses, a supplemental analysis revealed a modest persuasive advantage for the loss-framed message among low-risk participants. Additional analyses revealed that for low-risk participants, perceived benefits of organ donation were higher for the loss frame than the gain frame, whereas the opposite pattern was found for high-risk participants. Findings suggest that decisions about organ donation may be associated with unique responses to message frames.

INDEX WORDS: Message Framing, Prospect Theory, Organ Donation, Transplantation, Ambivalence, Altruism, Risk, Health

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by

ELIZABETH COHEN

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

in the College of Arts and Sciences

Georgia State University

2007

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by

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"My Loss is Your Gain": Examining the Role of Message Frame, Perceived Risk, and Ambivalence in the Decision to Become an Organ Donor.

Chapter 1

Literature Review

Introduction

Prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981) proposes that messages can be framed in terms of losses that will result if a given action is not taken or gains that will result if the action is taken. The theory states that these frames can have dramatically different influences on decision making. Depending on whether they are presented with a gain or loss frame, the theory predicts that individuals may be persuaded to engage in or avoid decisions and behaviors that could put either themselves or others at risk. Prospect theory has frequently been used to make predictions in different types of decision situations such as those that involve public policies with far-reaching implications to groups of others, or even personal health decisions that can have direct consequences for the decision maker. However, because prospect theory has traditionally been applied to explain how individuals respond to messages that emphasize either gains or losses to others or gains and losses to themselves, its ability to explain decisions related to decisions that involve both the self and others is limited. Specifically, it appears that the theory has not yet been applied to explain prosocial or helping behaviors which involve a complex consideration of how a given decision will affect both a benefactor and recipient.

A classic exemplar of prosocial behavior is posthumous organ donation. Because it has the potential to save human lives, the act of becoming an organ donor is considered

an ultimate act of generosity. Yet, it appears that relatively few individuals are willing to be so generous. Currently, the waiting list for individuals awaiting transplants in the United States tops over 96,000 candidates, yet the number of organ donors last year only approached 15,000 (United Network for Organ Sharing, 2007). As the shortage of available organs indicates, many individuals are less than willing to become donors, despite the obvious benefit to transplant recipients. Research on organ donor behaviors indicates that individuals' willingness to become donors may often have less to do with their perception of potential benefits to organ recipients and more to do with their concern about risks to themselves (e.g., Cacioppo & Gardner, 1993; Parisi & Katz, 1986; van den Berg, Manstead, van der Plight, & Wigboldus, 2005). That is, individuals who associate various risks with becoming a donor (e.g., having their body mutilated) may be unwilling to register as a donor even if they believe that their donation could help save a life. Rather than basing their decision about whether or not to become an organ donor exclusively on the potential benefits to another, individuals appear to weigh these benefits with the possible effects of their decision on themselves.

The circumstances surrounding organ donation present a unique opportunity to explore the responses to messages that require individuals to weigh both the potential gains and losses to themselves *and* the gains and losses to another individual. The current paper will examine the relationship between self-relevant concerns and other-relevant concerns by exploring the effects of self-perceived risk regarding organ donation on how individuals respond to gain and loss framed messages about an individual in need of a transplant. Additionally, in an attempt to help explain the influence of risk

perceptions and framing on donation decisions, the role of belief ambivalence will be explored.

Altruism

Theories of prosocial behavior shed light on why individuals may consent to becoming organ donors even though their commitment almost exclusively benefits recipients. In fact, both egoistic and altruistic explanations of prosocial behaviors may shed some light on the different motivations individuals have for becoming organ donors.

Morgan and Miller (2002) argued that "organ donors have little if anything to gain by donating their organs after deaths; it is a purely altruistic act, based on empathy with those who are sick and in need of a transplant" (p.165). This rationale is closely aligned with Batson's empathy-altruism hypothesis (EAH) (1987). According to this model, altruism is a product of understanding a person's suffering and experiencing empathetic concern for another. In various applications of the hypothesis, researchers have demonstrated that altruism may be a direct product of concern for another instead of a desire to alleviate personal undesirable feelings including guilt and shame (Batson et al., 1991; Fultz, Batson, Fortenbach, McCarthy, & Varney, 1986). Thus, according to the EAH, prosocial behaviors occur in the absence of selfish incentives as a product of pure altruism.

Alternatively, proponents of egoism argue that helping behavior is always motivated by a benefit to the self. One of the most popular egoistic approaches is Cialdini, Darby, and Vincent's (1973) Negative State Relief Model (NSRM), which proposes that individuals regularly seek to alleviate their negative moods through behaviors that will promote more positive mood states. Because empathetic distress is

often caused as a result of learning about a person's suffering, the NSRM predicts that individuals will engage in behaviors that help the victim in order to relieve their own personal feelings of distress by eliminating the source of the negative affect or gaining social approval. Even individuals experiencing positive affect may wish to further improve their mood by engaging in helping behavior (Yinon & Landau, 1987). Thus, ultimately, the NSRM provides an explanation for *seemingly* altruistic behaviors that benefit recipients but are ultimately self-seeking because they are motivated by the desire to feel like a benevolent person.

Although the EAH and the NSRM provide different explanations for reasons that individuals may be motivated to engage in prosocial helping behaviors, both may be used to explain decisions to commit to organ donation. According to the EAH, helping behavior is prompted by a concern for others. Hence, participation as a posthumous organ donor may be a product of sincere concern for health and safety of individuals in dire need of a transplant. In contrast, the NSRM argues that individuals are motivated to prosocial action by a concern for themselves. Thus, an organ donation commitment could also be a result of individuals' desire to enhance good feelings related to positive self-evaluations or avoid negative feelings that could result from not becoming a donor. For example, individuals may be motivated to become a donor to avoid or alleviate feelings of guilt that could result from not helping potential transplant recipients (Massi-Lindsey, 2005). Taken together, both the EAH and the NSRM are useful to the study of organ donation behaviors because they describe a process of prosocial behavior that could be inspired by both self-relevant concerns and concerns for others.

However, although these explanations provide a useful framework for describing the personal incentives for becoming a donor that include both self and other considerations, no research could be located that explores the influence of these incentives on organ donation message evaluation. Furthermore, while the EAH and NSRM each identify different reasons why individuals may be inspired to become an organ donor because of self and other benefits associated with the process, these models do not address the influence of perceived risks to the self that could conflict with individuals' positive feelings about the process. The following section addresses how different message frames may interact with individuals' perception of benefits for both self and others to moderate commitments to organ donation.

Prospect Theory

Prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981) categorizes message frames according to whether they predominantly emphasize a loss or a gain. This theory proposes that even when a gain frame and loss frame present the same objective information about a particular risk, loss frames encourage individuals to adopt risk-seeking behavior while gain frames cause individuals to become risk-aversive. According to the theory, individuals tend to be loss-sensitive. Thus, when offered a prospect of avoiding a loss, individuals will take it even if their decision runs the risk of resulting in a greater loss. Likewise, because individuals want to avoid the loss of preexisting gains, prospects that allow them to retain them (i.e., gain frames) will encourage people to engage in less risky decision making, even if they forfeit the possibility of greater gains. The tenets of prospect theory have yielded consistent predictions for several different decisions and actions such as the behavior of financial

investors and consumers, foreign policy decisions, and public opinion on war (Boettcher, 1995; Levi & Whyte, 1997; Puto, 1987; Shefrin & Meir, 2003).

In a well-known application of prospect theory, Kahneman and Tversky (1984, p. 343) asked participants to decide between different treatment programs for an epidemic expected to kill 600 individuals. First, participants were given the choice between a program option framed in terms of the lives that will certainly be saved (i.e., "If program A is adopted, 200 people will be saved") or a program option framed with less certainty that lives will be saved (i.e., "if program B is adopted, there is a one-third probability that 600 people will be saved, and two-thirds probability that no people will be saved"). In this case participants preferred the certain-gain program option, even though there was a possibility of saving more lives with the alternative option. However, when Kahneman and Tversky framed the treatment options in terms of lives lost (i.e., "If program C is adopted, 400 people will die. If program D is adopted, there is a one-third probability that nobody will die and a two-thirds probability that 600 people will die"), participants overwhelmingly preferred the program option that risked further deaths to the option that resulted in a certain-loss of lives. Thus, even though the gain and loss frames presented identical treatment options (i.e., both offered the possibility of preserving 200 and losing 400 lives vs. the uncertain probabilities associated with either saving or losing all 600 lives), participants made different decisions according to whether the information was framed in terms of lives saved or lives lost. Consistent with the predictions of prospect theory, these responses illustrate that gain frames encourage individuals to avoid taking risks, while loss frames promote risk-seeking behaviors.

Prospect theory has also been successfully applied in the realm of health communication to explain reactions to personal health recommendations. In the context of health messages, prospect theory proposes that health behavior actions or modifications can be framed either in terms of the consequential benefits or the repercussions of adopting or not adopting the recommended behavior. For example, a message designed to encourage smoking cessation could either emphasize the improvements in health (gain) that could result if the recommendation is adopted or the risk of cancer (loss) that could result if the recommendation is not adopted. However, in their review of prospect theory's application to health messages, Rothman and Salovey (1997) found that the relative effectiveness of a gain or loss frame at promoting a particular health behavior depends on whether the behavior involves health screening or health prevention. Health screening behaviors are those that individuals engage in as a way of detecting a preexisting ailment (e.g., a mammogram). A certain degree of risk is associated with these behaviors because the possibility exists that an illness will be revealed. Health prevention behaviors are those that are done to maintain or improve personal health (e.g., wearing sunscreen). These behaviors tend to be health-affirming and relatively free of risk because, from the individual's perspective, they can only offer an improvement to their current situation. Rothman and Salovey conclude that the degree of perceived risk involved with a particular behavior will ultimately determine which type of frame is the most effective impetus for behavior. Specifically, they argue that loss frames tend to be more effective at encouraging individuals to engage in risk-laden screening-related behaviors while gain framed messages provide stronger motivation for less risky prevention behaviors.

Rothman and Salovey's (1997) extension of the prospect theory to health outcome framing has explained responses to a variety of prevention and screening messages. For example, gain-framed messages highlighting the benefits of sunscreen have been found to be more effective at promoting sunscreen use than those emphasizing the dangers associated with not using sunscreen (Detweiler et al., 1999). The same results have been found for messages promoting preventative behaviors such as exercising, wearing condoms, and proper use of infant car seats (Linville, Fischer, & Fischhoff, 1993; Robberson & Rogers, 1988; Treiber, 1986). However, when it comes to encouraging individuals to engage in a screening behavior that could potentially detect an illness such as a mammogram, loss framed messages that emphasize the risks of leaving an illness undetected are more effective than those focusing on the benefits of the screening (Banks, Salovey, Greener, & Rothman, 1995). Loss frames have also been shown to be particularly effective at encouraging detection behaviors such as HIV screenings, testicular self-exams, blood-cholesterol screenings, and skin cancer self-exams (Apanovitch, McCarthy, & Salovey, 2003; Block & Keller, 1995; Maheswaran & Meyers-Levy, 1990; Umphrey, 2003).

Whether applied to public health decisions or personal health behaviors, the success of gain and loss framing seems to depend on where the risk is directed. Just as individuals are motivated to make risk-laden decisions on behalf of an unknown group when presented with the possibility of grave losses, they are also more willing to engage in screening behaviors if they believe that not doing so would result in a significant personal loss. In contrast, the prospect of gains encourages individuals to make conservative decisions when it comes to the fate of unknown groups (such as the

beneficiaries of the treatment programs in Kahneman & Tversky's, 1983, scenarios) and is also effective at encouraging prevention behaviors that involve relatively little risk. Thus, to the extent that the risk presented in a loss frame is seen as significant, individuals can be motivated to take a risk by either selecting a potentially beneficial public policy that could nonetheless result in additional deaths to other people or by engaging in an uncertain detection behavior that could potentially reveal an life-threatening illness that poses a risk to the self.

The current study examines responses to loss and gain framed articles on becoming a posthumous organ donor. Because it occurs following death, posthumous organ donation is often discussed as a no-strings-attached option for donors. However, past research has shown that many individuals suspect there are several personal risks associated with becoming a posthumous organ donor, including bodily mutilation, fear of receiving inadequate medical care or being put to death prematurely, creating family conflict, and in some cases even violating religious doctrine (Parisi & Katz, 1986). Thus, much like the screening behaviors discussed by Rothman and Salovey (1997), becoming an organ donor can be considered a behavioral choice that involves some risk for the donor.

Of course, organ transplant candidates face the risk of dying while waiting for a donor. In this study, two versions of an article designed to promote organ donation were created and focus on a college student who is expected to die if he does not receive a double lung transplant. Recent research on living organ donation has found that individuals may be more willing to commit to donation if they perceive there to be an urgent need for organs (Popp et al., 2006), and willingness to become a posthumous

organ donor may also be related to whether or not there seems to be a desperate need for organs. The loss framed message highlights the severity of the situation by focusing on the likelihood of a student's death should the shortage of donated organs prevent him from a pair of donated lungs, while the gain framed article instead focuses on the benefits of organ donation by discussing the likelihood of the student's survival in the event that he receives the transplant. Because becoming an organ donor entails risk and highlights the grim circumstances of the recipient, it should be more convincing than the gain frame. In line with the predictions of prospect theory, which posits that frames emphasizing loss cause individuals to become risk-seeking while those emphasizing gains cause individuals to become risk-aversive, the loss frame should provide more incentive for individuals to take a risk by becoming an organ donor (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981). Based on this conclusion, the following hypothesis was proposed.

H1: Participants exposed to the loss frame will be more willing to become an organ donor that those exposed to the gain frame.

Self-Relevant Perceptions of Risk and Other-Relevant Perceptions of Need

Notably absent from the literature that explores responses to gain and loss frames is a description of how individuals respond to messages about behavioral choices that involve risks to the self and to others. As previously discussed, prospect theory has typically been applied to explain responses to messages that emphasize personal risks to the self (e.g., the consequences of not being screened for cancer) or risks that are relevant to groups of others (e.g., the probability that groups will die of an epidemic if a treatment option is not adopted). These studies collectively indicate that the degree of perceived

risk to either the self or others can determine the effectiveness of a frame. However little is known about the combined influence that self-relevant and other-relevant risks have on framing responses.

In the current study, the sources of perceived risks to the self and perceived risks to others differ. Whereas perceived risks to transplant candidates should be at least partially a function of the message frame (i.e., the loss frame addressing the transplant candidate's death should convey a higher level of need than the gain frame that focuses on his survival), perceived risks to the self should be consistent with the participant's preconceived notions about organ donation. In other words, the strength of participants' perception of needs relevant to the potential organ recipients should differ primarily based on the frame of the article they read, whereas the strength of their perception of possible risks to themselves should vary according to the beliefs that were developed prior to message exposure.

Presumably, self-relevant and other-relevant need perceptions compete with each other for behavioral influence because they have conflicting goals; namely, preservation of the self versus preservation of others. Whichever risk is perceived as being greater should exert the most influence on decision making. In other words, individuals should weigh the costs and benefits associated with both types of risk and make their decision according to the one they deem to be the most salient (Dovido, 1984). When deciding between an action that would put another at risk but keep themselves safe or an action that would put themselves at risk but alleviate the risk of another, a person would likely take the option that would provide a remedy for the greatest perceived risk. Thus, when deciding to become an organ donor, individuals will have to consider both the danger to

transplant candidates if they decide not to become a donor and any risks to themselves if they do become a donor. Should individuals perceive the risks to themselves as donors as higher than those to potential transplant recipients, they will be less likely to make a commitment as an organ donor. On the other hand, if perceived self-risk is low enough, their perception of danger facing recipients should influence them to become donors. Hence, generally speaking, individuals with lower self-perceived risks associated with organ donation should be more willing to become donors than those with higher self-perceived risks.

Moreover, because the decision of whether or not to become an organ donor is based on the negotiation of preexisting self-relevant risks and other-relevant needs, perceptions of risks that are at least partially frame induced, perceptions of risk to the self should interact with article frame. The emphasis on the death of the prospective transplant recipient in the loss framed article calls attention to danger facing the potential transplant recipient. Therefore the loss framed article should require participants to give greater consideration to other-relevant needs. Consequently, for individuals with high self-relevant risk, the behavioral influence of the other-relevant risk in the loss frame should pose a challenge to the behavioral influence of perceived risks to the self, creating a greater conflict between self-risk and other-relevant needs. Thus, over all, the loss frame should be effective to the extent that individuals view the risks to the prospective organ recipient as being greater than their own personal risks associated with becoming a donor.

Because the gain frame's discussion of saving a life still calls attention to the need for organ donation, or rather, the risk to the recipient, the conflict between self-relevant

risks and other-relevant needs should also be present for individuals exposed it. Nonetheless, because this emphasis on the potential recipient's need is not strong as it is in the loss frame, the gain frame is not expected to cause as much conflict with self-relevant risks. Thus, the difference in effectiveness of the gain and loss frames for low risk individuals would not be as great as the difference in effectiveness of the two frames for high-risk individuals. In other words, the discrepancy in willingness to become an organ donor for individuals exposed to the gain or loss frame will be greater for high risk individuals than for low risk individuals. Based on this aforementioned rationale, the following hypotheses were proposed:

H2: Low self-risk individuals will be more likely than high self-risk individuals to become organ donors.

H3: Level of self-relevant risk and message frame will interact such that the relative effectiveness of the loss frame over the gain frame will be greater for high-risk individuals than for low-risk individuals.

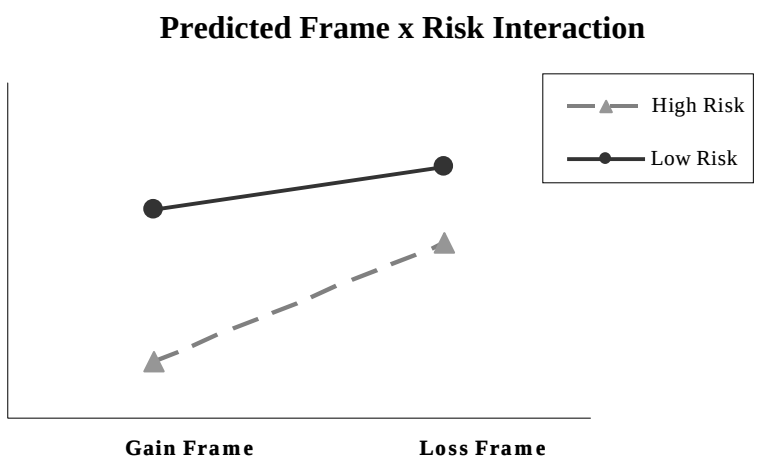

Figure 1

The Benefits of Becoming an Organ Donor

In addition to the concerns regarding risks, the consideration of potential benefits associated with becoming an organ donation should also have an effect on the responses to both loss and gain framed messages. As both the EAH and the NSRM demonstrate, prosocial behavior can be strongly influenced by perceptions of benefits to the self and to the other. While perceived self-risks of organ donation tend to involve physical concerns related to bodily harm or inadequate medical care, self-relevant benefits are more closely aligned with having positive self evaluations. In line with the propositions of esteem enhancement theory (see Batson, 1998), the benefits of becoming an organ donor could involve having a very positive self-image or acquiring social approval. Yet, like perceptions of personal risks, perceptions of personal benefits tend to have a source external to most messages on organ donation. Although messages promoting organ donation could conceivably appeal to these potential benefits, it seems like an uncommon strategy. Rather, it seems likely that individuals should develop their perception of personal benefits related to organ donation by considering their own positive emotions, self-perception, and even social approval that would be associated with their decision to become a donor.

Parisi and Katz (1986) documented several different types of benefits associated with becoming an organ donor rooted in more altruistic attitudes. Besides, of course, helping someone in need of an organ transplant, their study found that positive attitudes towards becoming an organ donor were also related to other-relevant perceptions of benefits to society at large (e.g., "organ donation benefits humanity"). Regarding self-

relevant perceptions of benefits, participants also indicated that they recognized becoming an organ donor may make them feel like a better person (e.g., "feel proud of myself") and gain social approval (e.g., becoming an organ donor would make me respected and admired by others"). Van den Berg et al. (2005) also found that participants associate many positive feelings with organ donation such as pleasure and gratification.

Ambivalence

On the surface, it would seem that the higher a person's perception of personal benefits related to organ donation, the higher the likelihood that they will become an organ donor. However, it is likely that persuasive influence of perceived self-relevant benefits on a person's willingness to commit to organ donation will be inhibited by the coactivated presence of perceived self-relevant risks. Thus, even if an individual expects to have positive self-relevant emotions by becoming an organ donor, they may also be cognitively sensitive to possible risks associated with the process. The following section reviews theory and research that suggest, that, rather than being influenced by perceived benefits (associated with self or others) or perceived risks alone, the decision to become an organ donor (or not) is strongly affected by the cognitive ambivalence caused by coexisting risks and benefits. Hence, ambivalence is predicted to explain the relationship between self-relevant risks and benefits and responses to loss and gain framed messages regarding organ donation.

Past research has already noted the apparently influential role of ambivalence in decisions related to donor behaviors where attitudes and actual behaviors do not always correspond. Cacioppo and Gardner (1993) reviewed Sarason et al.'s (1993) study of

blood donation and concluded that "the positive and negative evaluative processes underlying donor attitudes and behaviors are separable, and it is the negative substrate that tends to be the impediment [of behavioral commitments to organ donation]" (p. 270). In other words, beliefs and/or emotions about the potential risks to the self appear to restrict the influence of even very strong positive attitudes on their decision to become a donor. This ambivalence-created discrepancy between attitudes and behavior is a well documented occurrence in attitude research (Ajzen, 2000; Armitage et al., 2002), and it has been evidenced in much of the literature on organ donation.

As is the case with many personal health behaviors, individuals tend to hold favorable views about the benefits of organ donation yet most do not register as organ donors (Hessing & Elffers, 1986). Of course, ambivalence appears to be present in both the belief and emotional components of attitudes. Much of the research on ambivalent evaluations of organ donation has focused on beliefs about the donation process and outcomes. For example, Parisi and Katz's (1986) found that participants with very positive beliefs about their role in organ donation (e.g., "organ donation benefits the whole of humanity") were the most willing to become organ donors, but this was only true if their negative beliefs about their personal risks (e.g., "organ donation leaves the body mutilated and disfigured") were weak. The authors concluded that the ambivalence created from these conflicting strong positive beliefs and strong negative beliefs may inhibit individuals' ability to make decisions and commit to becoming an organ donor. Likewise, other studies have focused on the specific negative beliefs that tend to restrict the influence of positive attitudes and/or beliefs. For example, research indicates that individuals' willingness to become a blood or bone-marrow donor is inversely related to

their perception of risks such as pain (Briggs, Piliavin, Lorentzen, & Becker, 1986; Sarason et al., 1993). Finally, as previously referenced, a number of specific concerns, such as body mutilation and receiving inadequate medical attention in a life-or-death situation, have been shown to be factors that adversely impact individuals' willingness to register as a posthumous organ donor (Parisi & Katz, 1986). Thus, despite positive overall attitudes towards organ donation, any one or several of these types of negative considerations may act to impede a person's decision to become an organ donor, even if they have high levels of perceived benefits to the self and benefits to the other.

To help explain findings such as these, research has been steadily accumulating in support of an independent conceptualization of a bivariate evaluation system that can broadly accommodate mixed positive and negative environmental appraisals. Cacioppo and Berntson (1994) developed the Evaluative Space Model (ESM) to broadly explain the seperability of "general and enduring favorable or unfavorable feelings about, evaluative categorizations of, and action predispositions toward stimuli" (p. 401). The ESM proposes that there are actually separate—mostly distinct—systems for positive and negative cognitive and affective evaluations, with distinct outcome options. Specifically, the positive substrate is responsible for approach responses, while the negative substrate is responsible for withdrawal responses. Because it conceptualizes positive and negative evaluations as independent phenomena, this model allows for the possibility that they can co-occur. However, the ESM proposes that these types of mixed positive and negative evaluations result in conflict, they are uncomfortable, unstable, and unable to provide clear behavioral direction. According to the model, the maximum amount of evaluative

conflict occurs when both the positive and negative substrate are activated at high and equal levels.

The propositions of the ESM reflect many of the findings obtained in past research on the behavioral consequences of evaluative ambivalence. Ambivalence has been defined as an evaluative state characterized by "equivalently high positive and negative evaluations" (Thompson, Zanna, & Griffin, 1995, p. 367). The role of ambivalence has often been applied to research on beliefs, judgments, and decisions related to social prejudices and biases (e.g., Fiske & Glick, 1995). One finding from this line of research is that individuals experiencing ambivalent attitudes may be more motivated to scrutinize and pay closer attention to information regarding the judgments and behaviors related to the source of ambivalence (Jonas, Diehl, & Bromer, 1997; Maio, Bell, & Esses, 1996).

Furthermore, ambivalence could make individuals more susceptible to the persuasive influence of additional information on the belief object. MacDonald and Zanna (1998) compared the hypothetical hiring intentions of undergraduates who held either ambivalent or unambivalent attitudes towards feminists. Before recommending their hiring decision, participants were either primed with positive or negative interpersonal qualities about three potential job applicants, one of whom was identified as a feminist. This manipulation did not have any effect on unambivalent participants. However those who held ambivalent attitudes about feminists tended to make their hiring decision of a feminist applicant according to whether they were primed with the positive or negative information. Because it appears that ambivalent individuals may be dependent on external information to guide their decision, this finding provides partial

support for the ESM's prediction that mixed evaluations provide unclear behavioral guidance. Thus, it seems possible that evaluative inconsistencies may temporarily impair behavior related decision-making; individuals could be highly motivated to process and make behavioral decisions based on other information sources regarding the attitude object.

In one of the only studies examining the role of ambivalence in responses to positively and negatively framed health promotion messages, Broemer (2002) found that a person's level of ambivalence affects their response to different message frames. In a series of three experiments, he asked participants to indicate their experience of ambivalence by rating their agreement with different statements regarding their compliance with different prevention behaviors such as maintaining a low fat diet, exercising, and using condoms (e.g., "Assuming I eat a low-fat diet in the future, I have positive as well as negative feelings"). In two studies, participants were either exposed to a message that emphasized the gains or losses associated with the prevention behavior. Overall, Broemer argues that these studies revealed a negativity bias associated with ambivalence. That is, individuals with the highest amount of preexisting ambivalence were more persuaded by the loss frame to engage in the prevention behaviors, and consistent with Rothman and Salovey's (1997) prediction regarding responses to prevention behavior, individuals with low levels of ambivalence were more persuaded by the gain frame. Of course, it is worth mention that the self-relevant risks that are posed by exercising and eating a healthy diet are relatively low. These behaviors may be uncomfortable, inconvenient, or expensive, but none of these consequences would seem to involve the same level of risk that comes from the possibility of detecting a life-

threatening illness or receiving inadequate medical attention as an organ donor. Thus, the ambivalence that participants reported experiencing may be relatively low compared to ambivalence that is elicited in response to behaviors that pose more significant risks to the self.

Collectively, the aforementioned studies on ambivalence suggest that the presence of ambivalence—even in response to relatively low-risk behaviors—leads to careful information processing and that individuals with a high degree of ambivalence tend to be particularly sensitive to negative information. Applied to the current investigation, these findings suggest that, compared to individuals with less ambivalence, those with conflicting perceptions of self-related risks and self-related or other-related benefits concerning organ donation may be particularly sensitive to negative information about becoming a donor (i.e., possible losses or risks to another).

Ambivalence will vary in degree depending on the extent of individuals' coexisting perceptions of benefits and risks regarding organ donation. A high degree of perceived benefits (regarding the self or the potential recipient) in combination with a high level of perceived risk to the self should result in the greatest amount of ambivalence on the issue of becoming an organ donor. To a much lesser extent, the presence of high self-relevant risk and lower perceptions of benefits would also create ambivalence, because the perceived benefits to others will probably be relatively high for most individuals. Because it seems intuitively likely that individuals can acknowledge the inherent benefits of organ donation to the recipient, current study presumes that perceived benefits to others should be moderately high and not vary much between participants. Hence, ambivalence regarding the decision to become an organ donor

should be present primarily in individuals with a moderate to high amount of perceived self-relevant risk. Individuals with high perceptions of benefits and low perceptions of self-relevant risk may not have any ambivalence at all. After all, if the risks that they perceive to themselves are insignificant or nonexistent, the benefits should greatly outweigh the risks. Instead of having ambivalence on the issue, these participants would likely be very interested in becoming an organ donor as a way of taking advantage of the associated benefits. On the other hand, individuals with equally low levels of benefits and risks would likely be indifferent on the matter. Even if individuals don't perceive a high level of personal risk associated with becoming a donor, if they do not also have moderately high expectations for benefits, then they may lack any incentive to participate in the process.

Assuming the presence of ambivalence causes individuals to be more responsive to possible losses (Broemer, 2002), it seems quite probable that the level of ambivalence should moderate the effectiveness of the gain and loss framed articles. That is, because the loss frame is more negative than the gain frame, it stands to reason that it should be particularly effective for individuals who are highly ambivalent about their decision to become an organ donor. In other words, individuals with both high self-relevant risk perceptions and high benefit perceptions should be more willing to become an organ donor in response to the loss frame as opposed to the gain frame. Thus, the discrepancy in willingness to become an organ donor for individuals exposed to the gain or loss frame should be greater for highly ambivalent individuals than for those with low ambivalence on the issue. Accordingly, the following hypothesis was proposed:

H4: The relative effectiveness the loss frame over the gain frame will be greater for those with high levels of ambivalence than for those with low levels of ambivalence.

Notably, this prediction regarding the response of individuals with high versus low ambivalence to gain and loss frames mirrors the prediction for individuals with high and low risk as stated in H3. That is, the difference between the effectiveness of the loss frame over the gain frame should be greater for high than for low risk individuals, and greater for those with high versus those with low ambivalence. Both self-relevant risk and ambivalence appear to play the same role in message frame processing. However, it stands to reason that the role of ambivalence may actually be a function of risk. That is, because high levels of ambivalence are produced by high self-relevant risk combined with high self and other benefits, it is possible that the presence of the high self-relevant risk may be entirely responsible for how highly ambivalent individuals process the gain and loss frame. Essentially, the presence of high self-relevant risk may determine the responses to the message frames, regardless of whether there is a high or low level of perceived benefits to create conflict.

As already noted, Broemer (2002) found that the presence of ambivalence caused individuals to become more receptive to negative information presented in a loss frame. However, because he used a subjective measure of participants' reported level of ambivalence, he was unable to examine the specific role that the positive and negative components of their ambivalence played. Thus, it is at least possible that ambivalent individuals' negativity bias was actually a result of their negative evaluations (e.g., perceived risks) associated with the recommended behavior, rather than their combined positive and negative evaluations.

As previously discussed, past research on organ donation behaviors has found that negative perceptions of organ donation often outweigh the positive ones, even if the positive perceptions are substantial. Parisi and Katz (1986) confirmed that even when individuals had very positive beliefs about organ donation they were unlikely to become organ donors if they also had negative beliefs. Similarly, Van den Berg et al. (2005) found that the presence of negative emotions related to organ donation was enough to restrict individuals' willingness to become a donor even if participants' positive emotions toward the process were higher. These two studies seem to suggest that negative evaluations of organ donation (i.e., self-relevant risks) alone would be enough to cause an individual to opt not to become a donor, regardless of that person's level of ambivalence. In other words, regardless of the level of perceived benefits (to either the self or the recipient), the level of perceived risk to the self may be the determining factor in one's decision to avoid organ donation. However, if this is the case, the prediction developed in H4 would be misleading. Specifically, if risk is held constant, then the effect of ambivalence on the relative effectiveness of the loss frame over the gain frame for high-risk individuals should disappear. This outcome would suggest that self-relevant risk may be the key reason that the difference in effectiveness of the loss frame over the gain frame is greater for individuals in the high ambivalence group (cf. Broemer, 2002).

However, if ambivalence does interact with the message frame (gain versus loss) after controlling for self-relevant risk, this would suggest that the variations in individuals' perceived self and other relevant benefits have an impact on the reception of different message frames. Because self and other relevant benefits make up ambivalence when paired with high levels of risk, accounting for the role of risk should highlight their

unique role in the decision making process. Thus, overall, if there is an interaction between ambivalence and message frame when risk is held constant, this would indicate that ambivalence is a key factor in the relative effectiveness of the loss frame over the gain frame for high and low risk individuals.

RQ1: After controlling for self-relevant risk, does ambivalence still account for the relative effectiveness of the loss frame over the gain frame.

Chapter 2

Method

Participants

One hundred and eighty one students were recruited from introductory communication classes in a large urban university. Thirty of these individuals who indicated they had already signed an organ donor card were excluded from the study as were two participants who were over 40 years of age. No participants reported knowing anyone with cystic fibrosis, nor did anyone indicate that they had any personal experience with organ transplantation. Only ten participants who had not already signed an organ donor card indicated that they had a friend or family member who had received an organ transplant or currently have a friend or family member waiting for a transplant. These individuals were included in the study. The final sample used for analysis consisted of 149 undergraduate students (96 female, 49 male; 4 did not report gender). The age of participants ranged from 18 to 39 years (M = 22, SD = 3.95). Almost a third of respondents (28.2%) identified themselves as Caucasian, 27.5% as African-Americans, 17.4% as Asian/Pacific Islander, 10.7% Hispanic, 9.4% multiracial, and 6.7% did not report their race/ethnicity. Over 40 different academic majors were represented in this sample.

Half of respondents (50.3%) indicated that they were registered as organ donors on their drivers' license. Notably, of these individuals, only 41.3% reported that they would "definitely" be willing to sign a donor card, and only 24% indicated that they would "probably sign the card." Fully, 34.7% of participants currently registered as

organ donors on their drivers' license reported that they were "unsure" about whether they would be willing to sign a donor card or that they would "probably not" or "definitely not" sign the card.

Research Design

The current experiment used a 2 x 2 factorial design with a manipulated news article (gain vs. loss) as one factor. In some analyses, self-relevant risk perceptions (high vs. low) was the second factor, and in others it was ambivalence (high vs. low).

Experimental Stimuli

Two versions of a news article were created for stimuli in this study (See Appendix A). The articles focus on the story of a male college student, James, who suffers from cystic fibrosis and progressive lung failure. The two articles are identical in length and provide the same background information on James. The loss framed message includes several sentences explaining that James will die if he does not receive a double lung transplant (e.g., "Without the help of a pair donated lungs that James so desperately needs, he will lose his chance to battle his impending lung failure and will most certainly die."), and the gain framed message instead includes statements predicting James's survival if he does receive the donated lungs (e.g., "However, if James receives the help of a pair of donated lungs that he so desperately needs, he's expected to reverse his lung failure and live a life of certain promise."). Participants were randomly assigned to one of the two message conditions. To collect information on the variables of interest, participants were asked to complete a questionnaire after reading the article.

Procedure

The articles and questionnaires were administered at the beginning of the class period. After reading and signing an informed consent form (See Appendix B), participants were given oral instructions to read the article and then complete an attached questionnaire. Reading the article and completing the questionnaire took participants approximately 15-20 minutes. Data for this study was collected over approximately a three week time period.

Measures

The questionnaire administered in this study includes measures of attitudes and intentions regarding a personal commitment to becoming an organ donor, positive and negative beliefs regarding organ donation, manipulation checks, demographics, and experience with Cystic Fibrosis and organ donation. Additionally, the questionnaire includes some measures of emotion and empathy that will be employed in future analyses. The following sections contain brief descriptions of the measures relevant to the current research. See Appendix C for a copy of the questionnaire.

Willingness to donate. Before participants were asked to indicate their intent to sign the organ donation card, were asked whether or not they were registered as organ donors on their driver's license. Intent to sign the card was measured on a 5-point scale developed by Skumanich and Kintsfather (1996) (1 = "I will definitely sign the card," 2 = "I will probably sign the card," 3 = "I am unsure as to whether or not I will sign it," 4 = I will probably not sign it," and 5 = "I will definitely not sign it."). A sixth item was added to identify the participants who had already signed an organ donation card and who were later excluded from analysis: "I already have signed an organ donation card." The five

remaining responses were reverse coded so that 5 indicated the greatest willingness to donate and 1 indicated the least willingness to donate.

Risks and benefits. Benefits and risks to the self and benefits to others were measured using items from the Organ Donation Attitude Scale (ODAS), developed by Parisi and Katz (1986) and adapted by Kent and Owens (1995). The ODAS was developed to examine both positive and negative beliefs related to volunteering to be a posthumous organ donor. The scale consists of a total of 46 items; half of the statements address prodonation beliefs and the other half focus on antidonation beliefs.

Twenty-two items from the scale will be included on the questionnaire for the current study according to whether they address a risk to the self, a self-relevant benefit, or benefit-relevant to another. Items with the highest factor loadings were selected for each of these categories.

In a factor analysis of the scale, Boey (2002) determined that items on the positive dimension of the scale corresponded to moral convictions (Factor I), while the items on the negative scale either corresponded to either to fear of bodily mutilation (Factor II) or fear of medical neglect (Factor III). To select items for the current study, items on the first factor were categorized according to whether they appear to address a self-relevant benefit (e.g., "vowing to donate organs at death makes one more respected and admired by family and friends"), or a recipient-relevant benefit (e.g., "by donating an organ at death, one can offer someone a better chance of being cured"). Two additional items were selected because they loaded highly on the positive dimension of the ODAS, even though they did not clearly fit into one of the benefit categories. Factors II and III predominantly addressed concerns about organ donation related to bodily harm and

medical neglect, respectively. Because almost all of the items on factors II and III appeared to address some sort of self-relevant risk perception (e.g., "a person will be less likely to receive adequate medical care after signing a donor card"), an equal number of items were taken from each factor to measure risks. Based on Boey's analysis of the factorial structure of the ODAS, the final items included in the subscale consisted of the five items in each of the two benefit categories that had the highest factor loading, in addition to the five items on both Factor II and III that had the highest factor loadings. Subscale items are displayed in Appendix A.

After reading each belief statement in the scale, respondents were asked to rate the extent of their agreement on a 6-point Likert-type scale (1 = disagree strongly; 6 = agree strongly). Hence, higher scores on prodonation items indicate positive beliefs and higher scores on negative items indicate higher negative beliefs. The scale does not include a middle neutral point. The reliabilities for both of the created ODAS subscales were high: self-relevant and other relevant benefits combined (α = .92) and risks (α = .84). A median split of the combined scores on these items was used to determine the high and low risk groups for the current study.

Ambivalence. Two different ambivalence scales were employed in the questionnaire. Thompson, Zanna, and Griffin 's (1995) "Griffin" measure of ambivalence was used to determine participants' degree of ambivalence calculated by the following formula: Ambivalence = $(P + N)/2 - |P - N|$, where for the current application of the ODAS, P was be calculated from the benefit items while N was calculated from the risk items. Based on the 6-point scale used for the positive and negative items, calculated ambivalence scores can from -1.5 (no ambivalence) to 6 (maximum ambivalence). A

median split was taken of participants' ambivalence scores to determine the high and low ambivalence groups for the current study.

Additionally, as a validity check for the calculated ambivalence scores, the questionnaire included three items that were modified from Priester and Petty's (1996) Subjective Ambivalence Questionnaire as a way of measuring participants' evaluation of their felt ambivalence. Participants were asked to indicate the degree that they feel conflicted, indecisive, and mixed when considering the decision of whether or not to become an organ donor. Semantic differential scales are used for each item with scores that could vary from 1, the absence of the ambivalent reaction (e.g., "feel no conflict at all"), to 7, the greatest amount of the ambivalent reaction (e.g., "feel maximum conflict"). This subscale was very reliable ($\alpha = .87$) and also moderately correlated with the ambivalence scores calculated using the Griffin measure, $r = .49$, $p < .01$.

Manipulation checks. To check the effectiveness of the gain and loss framing manipulations, participants were asked to rate the tone of the article on a 7-point semantic differential scale ranging from 1, "very negative", to 7, "very positive". A separate item was also included that asks participants to rate the likelihood that James will survive, on a scale of 1, "Very likely he will die", to 7, "Very likely he will live."

Chapter 3

Results

Preliminary Analyses

Random assignment check. Two independent sample t-tests were conducted to make sure that there were no risk and benefit perception differences between the two message frame conditions. These tests confirmed that the gain nor loss frame did not differ for risks ($p > .81$) or benefits ($p > .82$).

Manipulation checks. Independent sample t-tests confirmed that the manipulations were effective. Participants exposed to the gain frame evaluated the tone of the article as being significantly more positive ($M = 4.67$) than those exposed to the loss frame ($M = 4.15$), $t(141) = -2.28$, $p < .05$. Participants exposed to the gain frame also estimated the likelihood that James will survive as being significantly greater ($M = 4.14$) than participants exposed to the loss frame ($M = 3.35$), $t(141) = -3.03$, $p < .01$.

Descriptive statistics. The means, standard deviations, and correlations for the variables can be found in Table 1. Perceived benefits were negatively correlated with self-relevant risk and calculated ambivalence, and positively correlated with willingness to donate. Risk was negatively correlated with willingness to donate, and positively correlated with subjective ambivalence and calculated ambivalence. Both calculated ambivalence and subjective ambivalence were negatively correlated with willingness to donate. The two measures of ambivalence were positively correlated.

Table 1

Means, Standard Deviations, and Zero-Order Correlations Between Variables

Measure	*Mean*	*SD*	2	3	4	5	6	7
1. Frame	--	--	.09	.02	-.02	.14	.02	-.08
2. Gender	--	--	--	.06	.12	.08	.13	-.03
3. Risk	2.80	.93	--	--	-.38**	.87**	.43**	-.45**
4. Benefits	4.43	.93	--	--	--	-.35**	-.04	.52**
5. Calculated Ambivalence	1.71	1.34	--	--	--	--	.50**	-.44**
6. Subjective Ambivalence	2.97	1.68	--	--	--	--	--	-.22*
7. Willingness to Donate	3.16	1.36	--	--	--	--	--	--

* $p < .05$, ** $p < .01$, *** $p < .001$

Note. The range of possible scores was: risk and benefits, 1 to 6; calculated ambivalence, -1.5 to 6; subjective ambivalence, 1 to 7; and willingness to donate, 1 to 5.

Framing and Risk

A 2 x 2 (message frame x risk level) Analysis of Variance (ANOVA) was performed to address H1, H2, and H3. H1 predicted that participants exposed to the loss frame would be more likely to sign an organ donation card than those exposed to the gain frame. However, this analysis did not reveal a main effect for message frame, $F(1, 145) = 1.44$, $p = .23$. Hence, H1 was not supported. However, as predicted in H2, a there was a significant main effect of risk, $F(1, 145) = 25.31$, $p < .001$, $\text{eta}^2 = .15$. Individuals in

the low risk group (M = 3.69) group were more willing than individuals in the high risk group (M = 2.63) to become organ donors. H3 was not supported. Risk-level did not interact with message frame, $F(1, 145) = .21$, $p = .65$.

Framing and Ambivalence

Because the ambivalence measure developed using the Griffin formula used positive and negative ODAS items, the ambivalence values calculated with this method may have overlapped with the risk scores used in the formula. To avoid this problem with the calculated scores, the Subjective Ambivalence scale of felt ambivalence was used for the analysis instead. A median split divided the scores from this scale into high and low ambivalence.

Hypothesis 4 predicted that ambivalence level would moderate the relative effectiveness of the loss frame over the gain frame at increasing compliance with becoming an organ donor. An additional 2 x 2 (message frame x ambivalence level) ANOVA was performed to explore this hypothesis. A main effect of ambivalence emerged $F(1,145) = 6.96$, $p < .05$, $\text{eta}^2 = .05$, such that individuals in the low ambivalence group (M=3.48) expressed more willingness to become an organ donor than those in the high ambivalence group (M=2.89). However, the predicted interaction was not significant $F(1, 145) =.308$, $p =.58$.

Framing and Ambivalence with Risk as a Covariate

Finally, a 2 x 2 (message frame x ambivalence level) ANCOVA was run with risk level as a covariate to answer RQ1, which addressed whether ambivalence or perceived risk is the key factor in the relative effectiveness of the loss frame over the gain frame. For this analysis, instead of using the dichotomous variable for high and low risk, the

continuous scale risk variable was used. The only significant main effect that remained in this analysis was the covariate, risk level $F(1, 144) = 28.64$, $p < .001$, $eta^2 = .17$. There was no significant main effect for ambivalence level, $F(1, 144) = .09$, $p = .76$, or message frame, $F(1, 144) = .81$, $p = .37$. Furthermore, there was no interaction between message frame and ambivalence level $F(1, 144) = .36$, $p = .58$.

Originally, RQ1 was posed to examine whether ambivalence alone could sustain the interaction between message frame and risk level. However, no such interaction was confirmed. Nonetheless, because the results of this analysis indicate that ambivalence level is not a significant predictor of respondents' willingness to sign a donor card when the risk is controlled, they suggest that risk level—not ambivalence—is the deciding factor in people's decision of whether or not to become an organ donor. To further examine this possibility, a second 2 x 2 (message frame x risk level) ANCOVA was performed, and this time the continuous variable of subjective ambivalence level was used as a covariate. With ambivalence held constant, the main effect for risk level emerged once again, $F(1,144) = 20.26$, $p < .001$, $eta^2 = .12$. No other significant main effects or interactions were found.

Supplemental Analyses

As an alternative way to explore the predicted interaction between message frame and risk as stated in H3, the dependent variable, willingness to sign an organ donor card, was recoded into a dichotomous variable that grouped the "definitely will sign," and "probably will sign" responses into one "willing to donate" category, and the "definitely will not sign," "probably will not sign," and "unsure whether or not I will sign" responses into an "unwilling to donate" category. Using this recoded variable, chi-square analyses

were performed to investigate the relationship between the two message frames and the high and low risk levels. The first analysis showed that for high-risk participants, willingness to donate did not differ by frame, $\chi^2(1) = 0.22$, $p = .88$ (loss frame, 23.7%; gain frame, 22.2%). However, the second analysis revealed that for low-risk participants, willingness to donate did differ by frame, $\chi^2(1) = 4.15$, $p < .05$. Specifically, low risk participants exposed to the loss frame were more willing to donate (69.4%) than those exposed to the gain frame (46.2%). Thus, it appears that exposure to the loss frame increased willingness to become an organ donor among low-risk individuals. A visual representation of these results can be found in Figure 2.

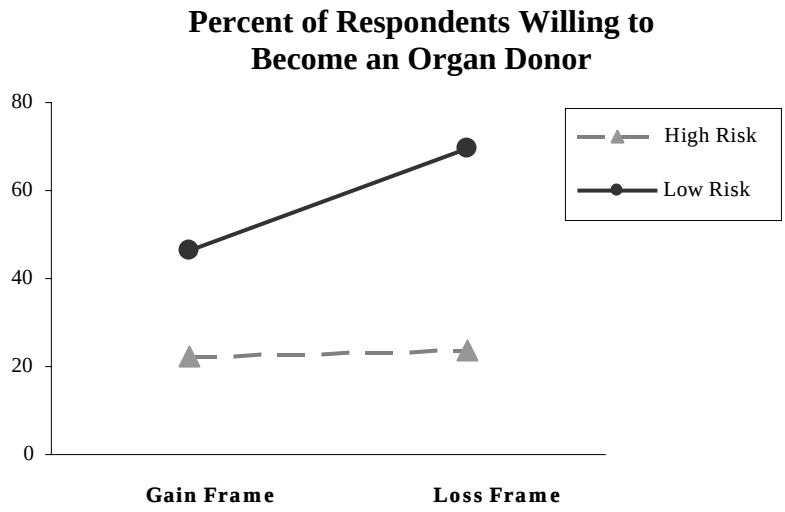

Figure 2

Hypothesis 1 predicted that the loss frame would increase participants' willingness to become organ donors regardless of whether they had high or low levels of

perceived risk. The rationale behind this hypothesis was that the narrative in the loss frame should provide more incentive for individuals to engage in what could be perceived as a risky behavior (i.e., becoming an organ donor). However, the aforementioned analysis only supports this prediction for low-risk individuals, suggesting that they may be more responsive to the severity of the situation for the person waiting to receive an organ. One explanation for the differential effect of the two frames on these low risk individuals is that the loss frame had a greater effect than the gain frame on perception of benefits that are associated with becoming an organ donor. To explore the possible role that benefit perceptions played in the results found with the Chi-square analyses, an additional 2 x 2 (message frame x risk level) ANOVA was conducted to examine the differences in benefit perceptions. From this analysis, a main effect emerged for risk, $F(1, 145) = 20.53$, $p < .001$, $\text{eta}^2 = .12$, but not for message frame, $F(1, 145) = .15$, $p = .70$. More importantly, the interaction between message frame and risk level was significant, $F(1, 145) = 5.61$, $p < .05$, $\text{eta}^2 = .04$. The means showed that the benefit perceptions for low risk participants exposed to the loss frame ($M = 5.04$) were slightly higher than those exposed to the gain frame ($M = 4.65$), whereas the benefit perceptions for high risk participants exposed to the loss frame ($M = 3.87$) were slightly lower than for those exposed to the gain frame ($M = 4.16$). Thus, it appears that the two frames had opposite effects for low and high risk individuals. Specifically, benefit perceptions were higher for low risk participants exposed to the loss frame than those exposed to the gain frame, but for high risk participants they were lower for those exposed to the loss frame compared to those exposed to the gain frame. However, Tukey comparisons did not reveal any significant differences between individual means.

Chapter 4

Discussion

Framing and Risk

One of the primary objectives of this study was to identify some of the factors that contribute to the different effects of gain and loss framed messages about organ donation. Yet, one of the most surprising results from this study was that the gain and the loss framed message did not differ in effectiveness. This study predicted that, in line with prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981) and Rothman and Salovey's (1997) application of the theory to health decision-making, the loss frame would be more effective than the gain frame in encouraging participants to become an organ donor because volunteering as a donor may be considered a risk-laden behavior, similar to a health screening. However, the frame emphasizing the possible death of an organ recipient should he not receive a transplant and the frame emphasizing his likely survival in the event that he receives the transplant appear to have elicited the same responses regarding signing an organ donation card. Hence, the hypothesis was not supported.

As expected, low risk individuals expressed more willingness to become organ donors than those with higher self-perceived risks. Yet, another surprising finding was that risk did not moderate message frame processing in the predicted direction. Rothman and Salovey (1997), argued that loss framed messages should be effective to the extent that individuals perceive the recommended behavior to involve risk. Accordingly, this paper predicted that the loss frame would be particularly effective for those with high risk. However, when willingness to become an organ donor was measured on a scale,

there was no difference in either frames effectiveness for high and low risk individuals. Only when willingness to sign a donor card was split into two "likely to donate" and "unlikely to donate" categories, an interaction pattern, different from the one predicted, emerged: low risk individuals were more greatly affected by the loss framed message than the gain frame. There was no difference in how individuals with high risk perceptions responded to the gain and loss frames.

Both of the aforementioned results for message framing effects are inconsistent with Rothman and Salovey's (1997) predictions for frames involving risk-laden screening recommendations. However, one possible explanation for these findings is that becoming an organ donor, although considered a risky option for some, does not function the same way as risk-involving screening behaviors. Research on health message framing has been somewhat limited to behavioral decisions that involve a similar type of risk related to the possibility of detecting personal health problems (Rothman, Bartels, Wlaschin, & Salovey, 2006). Yet, as previously discussed, becoming an organ donor is a unique type of health decision because, unlike other decisions that require an individual to weigh the risks to themselves if they adopt the recommended behavior vs. risks to themselves if they chose not to adopt it, organ donation requires individuals to weigh the risks to themselves if they become a donor against the risks (or benefits) to an anonymous other if they do not (Parisi & Katz, 1986). Hence, although prospect theory has yielded consistent results in respect to decisions made on behalf of others or decisions made on behalf of the self (O'Keefe & Jensen, 2006), the influence of message framing on decision making appears to operate differently in the more complex context of organ donation that involves competing priorities.

An important difference between the organ donation messages in the current study and messages that are designed to persuade individuals to engage in health screening or prevention behaviors is how the recommended behavior and potential consequences are directed. In the case of health screening or prevention behavior messages, the recommended behavior and the potential consequences of adopting or not adopting it are usually directed at the self. That is, these messages address the probability that a positive or negative outcome will occur to the individual making the decision of whether or not to accept the behavioral recommendation (Rothman & Salovey, 1997; Rothman, et al., 2003). However, in the case of organ donation messages, the recommended behavior is directed at the self while the potential consequences are directed at another. Put simply, the organ donation message does not directly address any personal benefits or repercussions, and instead these appeals address the probability that a positive or negative outcome will occur to another. If these negative and positive consequences are at all responsible for framing effects, then perhaps the gain and loss frames were equally effective because no personal outcomes were varied.

Another important difference between organ donation messages and messages designed to promote health screening behaviors is that the former tends to emphasize the benefits of a recommended behavior for another. This difference may account for the unexpected finding that the loss frame was more effective for low risk participants, but not for high risk participants. In line with Baston's (1987) empathy-altruism hypothesis, a heightened understanding of another person's suffering may be a very effective way of encouraging participants to engage in organ donation, but perhaps this is only true if donors have little or no perceptions of personal risk. Batson, O'Quin, Fultz, Vanderplas,

and Isen (1983) discovered helping behaviors that pose a high cost can distract individuals—even those that report high levels of empathy—from their concern for another. Thus, with greater concerns about their own personal safety, high risk participants may have been too absorbed in their own personal concern to be influenced by either the gain or loss frame's presentation of the organ recipient's predicament. However, because the low risk participants lacked high levels of negative sentiment towards becoming an organ donor, it stands to reason that they may have been more attune to the distress of the potential organ recipient in the messages. Consistent with prospect theory, it was predicted that the loss frame should encourage individuals to be more willing to engage in a risky behavior on recipient's behalf because it highlights the potential organ recipient's likely death (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981). Yet, Batson et al.'s (1983) findings give some credence to the possibility that only low risk individuals were more receptive to the needs of the potential recipient (i.e., the benefits of becoming a donor) because they were less distracted by self-perceived risk. Hence, because the benefits of organ donation for the recipient are framed as being higher in the loss frame, perceived benefits should be higher for low risk individuals exposed to the loss frame than those exposed to the gain frame.

This conclusion is supported by the results of the supplemental ANOVA which showed an interaction pattern for benefit perceptions. In fact, in this analysis the effects for the two frames were reversed: the low risk participants exposed to the loss frame had higher levels of perceived benefits than those exposed to the gain frame while the low risk participants exposed to the loss frame had lower perceived benefits than those exposed to the gain frame. In light of the finding that the loss frame was effective among

low risk participants but not for high risk participants, this pattern suggests that higher levels of perceived benefits associated with the loss frame could be responsible for this effect.

Of course, if perceived benefits were manipulated by the message frames, then it seems possible that perceived risks were manipulated as well. However, this possibility seems unlikely because the subject matter of the messages only addressed the dangers of a potential transplant recipient not obtaining the organs he needs or the benefits to him should he receive the organs. Participants' personal risk involved with becoming an organ donor was not addressed at all in the messages; only risks to the recipient (i.e., death, unless he receives an organ donation) were manipulated. Thus, participants' preexisting perceptions of risk associated with becoming an organ donor was probably unaffected by exposure to the messages.

Risk and Ambivalence

Another important finding of this study was the prominent role of risk over ambivalence as a determinant of intentions to become—or rather not become an organ donor. The finding that high risk is associated with lower compliance with card signing behavior suggests that the decision of whether or not to become an organ donor is dependent on whether or not the person perceives personal threats associated with the process. One of the major findings of this research is that although ambivalence was initially shown to be associated with participants' card signing intentions, when risk was held constant, this effect disappeared. Thus, risk appears to explain participants' card signing intentions better than conflicting benefit and risk perceptions. Of course, whether these results are unique to the decision process behind becoming an organ donor

has yet to be determined. These results shed light on the role of ambivalence in organ donor behaviors and lend further support for research that suggests that the presence of negative evaluations regarding organ donation is enough to inhibit a person's willingness to become a donor, even if benefit perceptions are simultaneously high (Cacioppo & Gardner, 1993; Parisi & Katz, 1986; Van den Berg et al, 2005). The influence of risk, it seems, overshadows any influence of benefits associated with becoming and organ donor.

As an extension of the previous discussion, these results also support the notion that unlike low-risk individuals, high-risk individuals tend to be resistant to becoming a donor regardless of whether they are exposed to the loss frame that emphasizes higher benefits associated with the process or the gain frame. In fact, it is interesting to note that high-risk individuals exposed to the loss frame actually had lower perceptions of benefits than those exposed to the gain frame. Although the differences were not significant, this pattern suggests high-risk participants may have a tendency to actually deemphasize the suffering of another, perhaps as a way to reduce their own feelings guilt or empathetic distress associated with not becoming a donor and rationalize their decision (Burgoon, Alvaro, Grandpre, & Voulodakis, 2002; Shaw, Batson, & Todd, 1994).

As a final point, although ambivalence did not mediate the effects of message frame in the current study, these findings do not necessarily contradict prior research findings that suggest the opposite. Failure to find any effects of ambivalence on message response may be due to the unique high-risk context surrounding organ donation. Ambivalence may cause individuals to more thoroughly scrutinize information related to hiring decisions (MacDonald & Zanna, 1998) or healthy life style choices (Broemer, 2002). However compared to the personal risks often associated with organ donation

(e.g., being put to death prematurely), the personal risks associated with these decisions are relatively low. Thus, the role of ambivalence in message processing may be directly related to the degree of risk that is associated with the recommended behavior. However, more research is needed to confirm this possibility.

Limitations and Suggestions for Future Research

This study has several limitations. Half of the sample used for this study had already indicated their wishes to be an organ donor on their state driver's license. Of course, it bears mention that many of the participants who were registered donors on their license nonetheless reported that they were not willing to sign an organ donor card. Unfortunately, no reasons for this seeming contradiction were investigated. This issue calls attention to the importance of examining preexisting attitudes toward organ donation which may or may not be subject to change. Prior thought and intent has been shown to influence cognitive and affective responses to persuasive appeals on organ donation, and individuals with strong preconceived notions about particular issues may be resistant to messages that conflict with their preformed opinions (Kopfman et al.,1998; Rothman & Salovey, 1997). To help conceal the research objectives from participants in this study, no pre-tests were administered, so there was no way to determine whether the attitudes respondents expressed following exposure to the message frames had changed. Likewise, because no control group was included in this design (cf. Cox & Cox, 2001; Hoffner & Ye, in press), it is not possible to confirm for certain that the messages were effective at persuading participants to become organ donors.

A significant constraint to the validity of the dependent variable in the current research is that it measured intentions to become an organ donor rather than actual

behaviors (Radecki & Jaccard, 1999). Future research on framing and organ donation should include behavioral measures of responses to message framing, including the documentation of actual card signing behaviors. Recently, researchers have begun to emphasize the utility of donors' willingness to communicate their wishes with their family who are ultimately responsible for carrying out their request (Afifi et al., 2006; Morgan, 2004; Morgan & Miller, 2001). The behavioral outcomes of framing in messages designed to encourage positive family communication regarding donation would be a fruitful and useful line of research.

Additional research is also needed to investigate the effects of different types of message frames related to organ donation. The current research employed gain- and loss-framed messages on organ donation presented in terms of the potential for a life saved or a life lost. Consequently, the information conveyed in these messages was limited to potential benefits to the organ recipient prior to receiving or being denied a transplant. However, many messages that the public is exposed to on organ donation focus on issues related to a posttransplantation success or the tragic death of individuals who did not receive transplants (Feeley & Donald, 2007). Hence, more research is needed on the relative effectiveness of gain and loss frames that address the benefits or risks to recipients based on past situations. Furthermore, this study's findings on the inhibiting effects of perceived risk underscores the need for persuasive organ donation appeals to reduce negative misperceptions about the process. Some studies have found that appeals that include counterarguments to misconceptions are effective at promoting donation (Ford & Smith, 1991; Winkle, 1984). Nonetheless, because these refutations have the

potential to actually increase perceptions of risk, their inclusion in messages should be approached with caution (Smith, Morrison, Kopfman, & Ford, 1994).

This study also presents evidence that benefit perceptions may play an important role in persuading low-risk individuals to become organ donors. As previously discussed, less than half of the individuals in the current investigation that had registered as organ donors on their state driver's license reported that they would definitely be willing to sign an organ donor card. Hence, although low-risk participants may be more willing to become donors than high-risk individuals, this does not mean that low-risk individuals will certainly become organ donors. Many low-risk individuals may be indifferent on the issue of organ donation, and many of them may still need to be persuaded to take the initiative to actually commit to the process. However, more research is needed to determine the type of benefit perceptions that are the most appealing. Future analysis will need to examine whether these individuals have more incentive to donate because of self-relevant benefits as proposed by Cialdini, Darby, and Vincent's (1973) Negative State Relief Model, or other-relevant benefits as suggested by Batson's (1987) Empathy-Altruism Hypothesis. There is some research to suggest that the effectiveness of different types of egoistic and altruistic appeals may vary according to individual differences such as gender (Brunel & Nelson, 2000).

Moreover, the current investigation included messages that manipulated benefits to a potential organ recipient in the event that he receives a transplant, but no messages were included that specifically addressed direct benefits for the donor. More research is needed to determine the effects of gain framed messages that emphasize personal incentives to become an organ donor such as making a friend or family member proud,

feeling good about one's self, or even emulating the behavior of an admired role model, versus loss-framed messages that focus on the possibility of disappointing someone or feeling guilty for not becoming a donor.

Finally, it is unclear how participants in this study responded to the main character of the experimental messages, but these reactions may help shed some light on some of the present findings. Either because of demographic differences or difficulty identifying with the possibility of suffering from a rare genetic disease, many participants in the current study may have felt far removed from to the young adult male suffering from Cystic Fibrosis that was the focus on the experimental messages. Recent research indicates that feelings of similarity to the main character in a health message can moderate the effectiveness of gain and loss message frames (Hoffner & Ye, in press). Furthermore, the current research did not include a measure of participants' level of issue involvement, but this variable has been shown to be an important predictor of message processing strategies and may moderate the effects of different frames of organ donation messages (Maheswaran & Meyers-Levy, 1990; Petty, Cacioppo, & Goldman, 1981). Hence, it is important to make sure that participants believe that the issue of organ donation does or could potentially be significant for their own lives. Perhaps the inclusion of a college student suffering from a disease that participants themselves are more likely to acquire (e.g., diabetes) could improve their feelings of similarity and issue involvement.

Conclusion

The present study demonstrated that, rather than ambivalence, perceptions of self-relevant risk associated with the prospect of becoming an organ donor tend to be the

deciding factor in individuals' decisions about whether to sign an organ donor card. No main effects for framing were discovered, perhaps because of the unique context this decision, involving a cost-benefit analysis of risks to the self and needs of potential organ recipients, situates it outside the realm of traditional health screening and prevention behaviors. In their recent review of the literature on loss- and gain-framed appeals, Rothman et al. (2006) point out that this line of research has been based on a very limited range of health behaviors. The unique circumstances surrounding organ donation may pose new challenges to the current understanding the effect that message framing has on altruistic and health-related behaviors.

Finally, this research did find that the loss frame was a moderately effective persuasive device for low-risk individuals, possibly because it increased the benefits they associate with the process of organ donation. Yet, high-risk individuals may have actively resisted the same effect. Although, diffusing high-risk individuals' negative perceptions about organ donation remains a worthy goal, mixed findings on the success of such efforts suggests they have the potential to do more harm than good by creating or reinforcing fears about organ donation (Smith et al., 1994). An interesting finding of the current study is that individuals who are not necessarily unwilling to donate may still lack the motivation to commit as organ donors. Thus, rather than focusing on changing the perceptions of high-risk individuals, research on organ donation would benefit from paying more attention to encouraging low-risk individuals to become donors. Accordingly, future studies should further examine message framing responses, benefit perceptions, and motivations to become organ donors among low-risk participants who are likely the most receptive candidates for organ donation.

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APPENDIX A

Organ Donation Attitude Scale Subscale Items

Benefits to Self

Add extra meaning to life
Endow death meaning
Respected and admired by family and friends
Set a good example
Feel proud of myself

Benefits to Others

Giving people hope of survival
Keep other living
Offer chance for being cured
Benefit humanity
Lives were saved

Misc. Benefit Items

Making a precious gift
A moral act

Risks to Self

Uneasy about body being cut up
Feel uncomfortable
Die with whole body
Buried with original parts
Body disfigured
Less likely to receive medical care
Prematurely declare death
Pronounce death even when alive
Appropriate medical technique not used
Intact body needed

APPENDIX B

Below is a copy of an article on a health issue. Please read this article carefully before proceeding to the questionnaire.

"Prospective Transplant Recipient **Awaits Death**"

Ask James Hall about the one thing he wants most in this world and, without missing a beat, he will tell you that he merely wants to attend his college graduation. Which isn't really asking much considering the 22-year-old aspiring neuroscientist just completed a double major in biology and psychology with a high grade point average. But to walk with his class and receive his diploma, he's got to stay alive. And that's where things get complicated.

For James, even normal activities are hard to accomplish these days. James suffers from cystic fibrosis and is one of nearly 3,000 patients in the U.S. who need a lung transplant—in his case, a double lung transplant.

Unfortunately, if James doesn't receive the new lungs that he needs, his chances of survival are poor. Recent statistics indicate that, in addition to experiencing a decline in their quality of life, patients with cystic fibrosis who do not receive a lung transplant have a decreased rate of survival.

Currently, James is functioning with a lung capacity of just 26 percent, and he recently became dependent on a breathing support machine to help him get the oxygen he needs. Until very recently, James was on his university campus regularly but because he needed to devote more time to doctor-prescribed breathing exercises, he was forced to complete his coursework from his home. **But school work is hard to focus on these days, and given the circumstances James feels anxious and concerned about the future.**

"I'm worried that my fate is unavoidable," he says solemnly. "I'm constantly worried that my next breath will be my last. It's not easy waiting for new lungs which may never come."

Many people with cystic fibrosis die younger than he is now, but he's almost made it far enough to don his cap and gown. Almost. Right now, James and his family are praying for a miracle.

Doctors say that without the help of a pair donated lungs that James so desperately needs, he will lose his chance to battle with impending lung failure and will most certainly die. Because of the shortage of available organs in the United States, James' fate is uncertain. And so he waits. And waits. Graduation is approaching quickly. He can only hope he'll get to walk down that aisle with his class.

Below is a copy of an article on a health issue. Please read this article carefully before proceeding to the questionnaire.

"Prospective Transplant Recipient **Looks Forward to Life**"

Ask James Hall about the one thing he wants most in this world and, without missing a beat, he will tell you that he merely wants to attend his college graduation. Which isn't really asking much considering the 22-year-old aspiring neuroscientist just completed a double major in biology and psychology with a high grade point average. But to walk with his class and receive his diploma, he's got to stay alive. And that's where things get complicated.

For James, even normal activities are hard to accomplish these days. James suffers from cystic fibrosis and is one of nearly 3,000 patients in the U.S. who need a lung transplant—in his case, a double lung transplant.

Fortunately, if James obtains the new lungs that he needs, the odds that his health will improve are remarkably good. Recent statistics indicate that, in addition to increasing the quality of life for patients with cystic fibrosis, lung transplantation dramatically increases their overall survival rate.

Currently, James is functioning with a lung capacity of just 26 percent, and he recently became dependent on a breathing support machine to help him get the oxygen he needs. Until very recently, James was on his university campus regularly but because he needed to devote more time to doctor-prescribed breathing exercises, he was forced to complete his coursework from his home. **Yet despite his hardships, James feels lucky to be alive and hopeful about the future.**

"This is just a temporary set back," he says optimistically. "It's not fun being on the waiting list for new lungs, but the pay off is life so I think it's definitely worth the wait."

Many people with cystic fibrosis die younger than he is now, but so far he's almost made it far enough to don his cap and gown. Almost. Right now, James and his family are praying for a miracle.

Doctors say that if James receives the help of a pair of donated lungs that he so desperately needs, he's expected to reverse his lung failure and live a life of certain promise. Because of the shortage of available organs in the United States, James' fate is uncertain. And so he waits. And waits. Graduation is approaching quickly. He can only hope he'll get to walk down that aisle with his class.

APPENDIX C

Georgia State University
Department of Communication
Informed Consent Form

Title: Coverage of Health Issues
Principal Investigator: Cynthia Hoffner
Student Principal Investigator: Elizabeth Cohen

I. Purpose: You are invited to participate in a research study. The purpose of the study is to assess college students' reactions to an article about an important health issue (it varies): skin cancer, organ donation, or nutrition. A total of 200 participants will be recruited for this study from Georgia State University. Participation will require 15-20 minutes of your time.

II. Procedures: If you decide to participate, you will be asked to read a short article and then complete a questionnaire that asks you about your opinions and responses. You will not receive any compensation for your participation.

III. Risks: In this study, you will not have any more risks than you would in a normal life.

IV. Benefits: Participation in this study may not benefit you personally. Overall, we hope to gain information to help us to better understand the nature of people's responses to messages about health issues. Your contribution would help us reach this understanding.

V. Voluntary Participation and Withdrawal: Participation in research is voluntary. If you decide to be in the study and change your mind, you have the right to drop out at any time. You may skip questions or stop participating at any time. Whatever you decide, you will not lose any benefits to which you are otherwise entitled.

VI. Confidentiality: We will keep your records private to the extent allowed by law. We will use a study number. Your name will not be on any study records. Only the principal investigators of this study will have access to the information you provide. It will be stored in a private-use file cabinet. Your name and other facts that might point to you will not appear when we present this study or publish its results. The findings will be summarized and reported in group form. You will not be identified personally.

VII. Contact Persons: If you have any questions about this study, please call Dr. Cynthia Hoffner by phone at 404-651-3200 or by email joucah@langate.gsu.edu, or Elizabeth Cohen by phone at 404-651-3633 or by email jouelc@langate.gsu.edu. If you have questions or concerns about your rights as a participant in this research study, you may contact Susan Vogtner in the Office of Research Integrity at 404-463-0674 or svogtner1@gsu.edu.

If you are willing to volunteer for this research, please sign below.

_____

Printed Name of Participant Signature of Participant Date

_____

Signature of Researcher Obtaining Consent Date

APPENDIX C

First, we have some questions about your current emotional state. Please read the questions below and indicate whether or not you are experiencing a particular emotion right now, at this very moment by checking either yes or no next to the corresponding question. If you check yes to any one of the questions, please indicate the extent that you are experiencing the emotion using the 7 – point scale (1 = slightly, 4 = moderately, and 7 = extremely).

1. Do you feel happy? ___Yes ___No

If you checked yes, how happy do you feel?

Slightly			Moderately			Extremely
1	2	3	4	5	6	7

2. Do you feel guilty? ___Yes ___No

If you checked yes, how guilty do you feel?

Slightly			Moderately			Extremely
1	2	3	4	5	6	7

3. Do you feel bittersweet? ___Yes ___No

If you checked yes, how bittersweet do you feel?

Slightly			Moderately			Extremely
1	2	3	4	5	6	7

4. Do you feel proud? ___Yes ___No

If you checked yes, how proud do you feel?

Slightly			Moderately			Extremely
1	2	3	4	5	6	7

5. Do you feel sad? ___Yes ___No

If you checked yes, how sad do you feel?

Slightly			Moderately			Extremely
1	2	3	4	5	6	7

6. Do you feel afraid? ___Yes ___No

If you checked yes, how afraid do you feel?

Slightly			Moderately			Extremely
1	2	3	4	5	6	7

7. Do you feel hopeful? ___Yes ___No

If you checked yes, how hopeful are you?

Slightly			Moderately			Extremely
1	2	3	4	5	6	7

Next, please tell us what you thought of the article that you just read:

8. How entertaining did you find the article?

Slightly			Moderately			Extremely
1	2	3	4	5	6	7

9. How well-written do you think the article was?

Slightly			Moderately			Extremely
1	2	3	4	5	6	7

Some states allow individuals to register as an organ donor by indicating their wishes on their driver's license.

10. Are you currently registered as an organ donor on your driver's license? ___yes ___no

When you complete this questionnaire you will have the opportunity to take an organ donation card. If you would like, you can take this card and have family members or close friend witness your signature. By signing this card you acknowledge that you wish to be an organ donor. Even if you have already registered as an organ donor on your drivers license, this card will serve as an additional testament of your wishes to donate.

11. Please answer the following questions regarding your intentions to sign the card by putting an X next to the statement that you feel best describes you.

___ I will definitely sign the card.

___ I will probably sign the card.

___ I am unsure as to whether or not I will sign it.

___ I will probably not sign it.

___ I will definitely not sign it.

___ I already have signed an organ donation card.

Now, please consider how you personally feel about becoming an organ donor or not becoming an organ donor. With respect to this decision, please use the following scales to indicate your thoughts.

12. How much indecision do you feel when you think about becoming an organ donor?

Feel No Indecision At All	1	2	3	4	5	6	7	Feel Maximum Indecision

13. How conflicted do you feel when you think about becoming and organ donor?

Feel No Conflict At All	1	2	3	4	5	6	7	Feel Maximum Conflict

14. When considering becoming an organ donor, how mixed is your reaction?

Completely One-Sided Reaction	1	2	3	4	5	6	7	Completely Mixed Reaction

Below are statements of beliefs about organ donation. Please read each one and decide the extent to which you agree or disagree. There are no right or wrong answers; please indicate the strength of your feelings by circling one of the following for each statement (1=disagree strongly; 6 = agree strongly):

15. My family wants me to be an organ donor.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

16. Organ donation leaves the body disfigured.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

17. An intact body is needed for the next life.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

18. By agreeing to donate organs at death, one sets a good example for others to follow.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

19. Deciding to donate one's organs at death adds extra meaning to life

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

20. Other members of my family would object to me signing an organ donor card.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

21. Organ donation endows death with more meaning and worth.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

22. Vowing to donate organs at death is a highly moral act.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

23. Vowing to donate organs at death makes one more respected and admired by family and friends.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

24. Extraordinary medical techniques will not be used to save the life of someone who has signed a donor card.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

25. A person will be less likely to receive adequate medical care after signing a donor card.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

26. There is a good chance that doctors will be more likely to prematurely declare the death of a person who has signed a donor card.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

27. Hearing about people whose lives were saved after the receipt of an organ makes me think about the importance of donating my organs after death.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

28. The person who offers a part of his or her body for transplantation is making a really precious gift.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

29. By agreeing to donate my organs after death, I am giving some people hope for survival.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

30. Promising to donate my organs upon my death makes me feel uncomfortable.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

31. Organ donation benefits the whole of humanity.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

32. When I die I want the whole of my body to die with me.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

33. A person who intends to donate their body parts at death increases the likelihood that one will be pronounced dead even though one is still alive.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

34. By donating a body part after my death, I could keep another person living.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

35. The thought of my body being cut up or taken apart after I'm gone makes me feel uneasy.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

36. By donating an organ at death, one can offer someone a better chance of being cured.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

37. Donating an organ after my death would make me feel proud of myself.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

38. When I die I want to be buried whole and with all my original parts.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

39. My family would support me signing an organ donor card.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

40. The shortage of donated organs in this country is a serious problem.

1	2	3	4	5	6
Disagree Strongly	Disagree	Disagree Slightly	Agree Slightly	Agree	Agree Strongly

41. Please estimate the percent of people on the national waiting list for an organ transplant that you think will receive the organs they need. There is no right or wrong answer, just circle your best estimate.

10% or less	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81-90%	91-100%

Now we'd like to find out a little more about you. Please indicate the extent to which you agree or disagree that each of the statements below is true of you, by circling a number between 1, *disagree strongly*, and 5 *agree strongly*.

42. I sometimes find it difficult to see things from the "other guy's point of view.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

43. Sometimes I don't feel very sorry for other people when they are having problems.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

44. I try to look at everybody's side of a disagreement before I make a decision.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

45. When I see someone being taken advantage of, I feel kind of protective towards them.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

46. I sometimes try to understand my friends better by imagining how things look from their perspective.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

47. Other people's misfortunes do not usually disturb me a great deal.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

48. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

49. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

50. I am often quite touched by things I see happen.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

51. I believe that there are two sides to every question and try to look at them both.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

52. I would describe myself as a pretty soft-hearted person.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

53. When I am upset at someone, I usually try to "put myself in his shoes" for a while.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

54. Before criticizing somebody, I try to imagine how I would fee if I were in their place.

1	2	3	4	5
Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly

Next, please answer a couple of questions about the article you just read.

55. Using the scale below, please indicate how positive or negative you felt that the tone of the article was.

Very Negative	1	2	3	4	5	6	7	Very Positive

56. Using the scale below, indicate how likely you think it is that James will survive.

Very Likely He Will **Die**	1	2	3	4	5	6	7	Very Likely He Will **Live**

Finally, please answer just a few more questions about yourself.

57. Are you male or female? ___Male ___Female
59. How old are you? _____years old

60. What is your major? _____

61. With what race/ethnicity do you identify?

___Asian/Pacific Islander ___Hispanic/Latino(a) ___White/Caucasian

___Black/African American ___Native American ___Other:_____

62. Have you been diagnosed with Cystic Fibrosis? ___yes ___no

63. Have any of your family members or close friends ever been diagnosed with Cystic Fibrosis?

___yes ___no

64. Have you ever been on the waiting list to receive an organ transplant?

___yes ___no

65. Have you ever received an organ transplant?

___yes ___no

66. Have any of your family members or close friends ever received an organ transplant?

___yes ___no

67. Are any of your family members or close friends on a waiting list to receive an organ transplant?

___yes ___no

68. Finally, is there anything else about organ donation that you would like to tell us?

_____

_____

_____

_____

_____

Thank You!