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INFLUENCE OF MESSAGES ON INTENTIONS CRITICAL TO ORGAN DONATION: THE APPLICATION OF CONSTRUAL LEVEL THEORY AND THEORY OF PLANNED BEHAVIOR

By

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ABSTRACT

INFLUENCE OF MESSAGES ON INTENTIONS CRITICAL TO ORGAN DONATION: THE APPLICATION OF CONSTRUAL LEVEL THEORY AND THEORY OF PLANNED BEHAVIOR

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This study combined construal level theory and the theory of planned behavior to examine individuals' intention to enroll in an organ donor registry in a near future. Based on construal level theory, the current study hypothesized that individuals who read a message emphasizing specific benefits of immediate enrollment would be more likely to intend to enroll than those who read a message describing general factual knowledge about organ donation or those who do not read any message about organ donation. In addition, the current study asked whether individuals would consider attitudes, subjective norms, and perceived behavioral control to a varying degree depending on whether they read a message emphasizing specific benefits of immediate enrollment, a message describing general factual knowledge about organ donation, or no message at all. To test the research hypothesis and research questions, the current study had a sample of 304 undergraduate college students in the Midwestern area. The participants were randomly assigned to one of two message conditions and the control condition. While the participants in the experimental condition read a message emphasizing specific benefits about immediate enrollment, the participants in the comparison condition read a message about general factual knowledge about organ donation. The participants in the control condition did not read any message. All the participants answered survey questionnaire items measuring attitudes, subjective norms, perceived behavioral control, and intention

to enroll in an organ donor registry in a near future. Results indicated that individuals had a similar level of intention to enroll in a near future across the three study conditions. It was also found that individuals relied on attitudes, subjective norms, and perceived behavioral control to a similar extent in forming intention to enroll across the three study conditions.

Dedicated to my family who has provided me with physical and emotional support throughout my Ph.D. education.

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Introduction

Enrollment in a state donor registry is an effective way to save lives. Donate Life America (2010) reported that "In 2009, 28 percent of organ donations, 30 percent of tissue donations and 38 percent of eye donations were authorized through state donor registries" (p. 1). Although 78% of the US population indicated that they would be likely or very likely to have their organs donated after their death (Gallop, 2005), only 37.1 percent of all U.S. residents age 18 and over were enrolled in state donor registries at the end of 2009 (Donate Life America, 2010). A majority of people in the US have positive attitudes about organ donation (Feeley, 2007; Feeley & Servoss, 2005; Gallop, 2005), but many of them still have not become designated donors. The fact that 71.6 percent of the total organ donors in 2009 had not signed up in their state donor registry before their death (Donate Life America, 2010) may show that many people keep perpetually postpone signing up in a donor registry.

Of many possible reasons why people do not register in a state donor registry despite of their willingness to be donors someday, the current study focuses on temporal distance as a factor. Enrolling in a state donor registry is a type of behavior that people can do it at any moment when they encounter a convenient opportunity (e.g., while being at a branch office of Departments of Motor Vehicles, while being online and visiting a Web site dedicated to a state donor registry). But also, it is a behavior that people do not have to do it for a very long time. Most people, especially college-aged young people, may consider deceased organ donation as a very distant future matter. Whether one signs up on a donor registry today or 20 years later does not change when he or she may

become a deceased donor. But people's view of the signing behavior itself may vary with when they consider doing it; in a very near future versus a distant future. In other words, factors important for intention to sign in a distant future may not be so for intention to sign in a near future.

Construal Level Theory (CLT) (Trope & Liberman, 2003; Trope, Liberman, & Wakslak, 2007) provides an explanation about how individuals evaluate behaviors based on when they intend to perform the behaviors. CLT suggests that, even for a same behavior, individuals associate a high-level construal (e.g., abstract and idealistic values) with the behavior if they imagine themselves performing the behavior in a distant future, whereas individuals associate a low-level construal (e.g., concrete and practical values) with the behavior if the behavior is to be performed in a near future. Consequently, individuals may consider different factors more or less importantly when they intend to perform a behavior in a near future versus a distant future. For example, individuals may consider signing up on a donor registry as a good thing to do and as an altruistic deed if they think of signing in a distant future. But if individuals may have to think about doing tvery soon, the actual steps necessary to do (e.g., finding a place and time to fill out a donor registration form) may become more salient.

In addition to CLT, relevant to intention to sign up in a donor registry is the Theory of Planned Behavior (TPB) (Ajzen, 1985, 1988, 2002), which explicates attitudes, subjective norms, and perceived behavioral control as three important factors for behavioral intention. Past research such as Park and Smith (2007) did not specify the time frame for the behavior of signing and showed that attitudes and subjective norms were significant factors for intention to sign, but perceived behavioral control was not. When

the time frame gets specified, however, there exists a possibility that people will consider each TPB component differently for intentions to sign in a near future versus in a distant future.

Integrating CLT and TPB, the preliminary study done by this author showed that people had stronger intentions to sign in a distant future (e.g., two years) than in a near future (e.g., two weeks). When attitudes were measured with time specification (e.g., attitudes about signing in two weeks and attitudes about signing in two years), attitudes were a much stronger factor for intention to sign in two years than for intention to sign within two weeks. This finding was consistent with the prediction that attitudes as abstract and idealistic values (i.e., a high-level construal) would be more salient for a behavior intended for a distant future than for a near future. The preliminary study of this author considered perceived behavioral control as concrete and pragmatic values (i.e., a low-level construal) because TPB conceptualizes perceived behavioral control as individuals' perception of the ease or difficulty of performing a behavior (i.e., considerations of practical inhibitors and facilitators of the behavior). It was predicted that perceived behavioral control would be a more important factor for intentions to sign within two weeks than for intention to sign in two years. But the finding was in the opposite direction; perceived behavioral control over signing in two years was more strongly and positively related to intention to sign in two years than perceived behavioral control over signing within two weeks was to intention to sign within two weeks. Finally, subjective norms, defined as important people's expectation about an individual performing a behavior, was not differentially related to intentions to sign within two

weeks and intentions to sign in two years, although subjective norms were a positive predictor of intentions to sign generally.

One implication of the preliminary study findings is that temporal distance should be an important consideration when making efforts to motivate people to enroll in a donor registry. If a goal of a campaign is to increase enrollment immediately during the campaign, the campaign will need to emphasize factors more relevant to a near future intention than a distant future intention. Finding a way to increase people's intention to sign up on a donor registry sooner than later can be a key to organ donation campaigns.

The current study applies the preliminary study findings in designing a message that can affect people's intentions to sign. By developing a message that can urge people to sign up soon and inform people of the benefits of signing up sooner than later, this study will examine whether people who read the message will have stronger intentions to sign in a near future than people who did not read the message. In this dissertation, chapter II provides a literature review on organ donation, CLT, and TPB, followed by hypotheses and research questions. Chapter III provides research design and measurement. Chapter IV and Chapter V provide results and discussion respectively.

Organ Donation

There has been a chronic shortage of available organs for transplants in the United States. In 2009, 54,865 individuals were added to the waiting list to receive an organ transplant, but only 24,464 transplants were performed with organs from 8,021 deceased donors and 6,610 living donors (United Network for Organ Sharing, 2010). Although the number of organs for transplant has been increasing over the years, more patients are being added to the waiting list than are being removed. The Institute of Medicine

concluded that "the best hope for closing the transplant organ gap lies in changing attitudes toward and awareness of organ donation" (Institute of Medicine of the National Academies, 2006, p. 3). The Institute proposed specific action plans that include education in combination with a variety of opportunities to enroll in an organ donor registry. As of April 2010, most states in the U.S. including the District of Columbia (with exceptions of Kansas and Wisconsin) have implemented first person consent legislation, which allows donor donation to proceed without consent from the family (United Network for Organ Sharing, 2010). Considering the importance of enrolling in a donor registry, Donate Life America has made efforts to accomplish a national goal of having 50% donor designation rate. Donor designation refers to a "documented, legally binding commitment by an individual to make an anatomical gift that can be revoked only by that individuals" (Donate Life America, 2010, p. 12). Although donor designate rate has increased from 24.4% in 2007 to 37.1 percent of all U.S. residents age 18 and over at the end of 2009 (Donate Life America, 2010), more efforts still need to be made to increase the donor designate rate and to better understand why or why not people do not sign up on a donor registry.

Enrollment in a donor registry is a behavior distinct from deceased organ donation itself, although individuals may form intentions to enroll based on characteristics of organ donation. Enrollment is a behavior individuals need to perform when they are alive in order to have their organs donated after death. Also, any individual can enroll in an organ donor registry, but not all designated donors eventually have their organs donated after death because of diverse reasons beyond one's own control such as ineligibility or

family objection. Thus, the current study focuses on intention to enroll in an organ donor registry, not on intention to donate organs.

Construal Level Theory

According to Construal Level Theory (CLT) (Trope et al., 2007), individuals have a hierarchy of construals, composed of high-level and low-level construals. High-level construals are abstract, central, essential, idealistic, and decontextualized cognitions of an event or a behavior, whereas low-level construals are concrete, practical, pragmatic, and contextualized cognitions of a behavior. For example, when individuals form intention to recycle newspapers and water bottles, they may have high-level construals such as "recycling is a socially responsible behavior" or "recycling is an environment-friendly behavior," that represent essential and idealistic characteristics of the behavior. On the other hand, individuals may have low-level construals for the same behavior such as availability of nearby recycling bins or specific types of plastic bottles appropriate for recycling. As for the behavior of enrollment in an organ donor registry, high-level construals may include perception of organ donation as an altruistic behavior saving lives or organ donation as a humane duty. In contrast, Examples for low-level construals may include availability of registration form and a lack of time for enrollment. In sum, while high-level construals are composed of central and essential characteristics of a behavior, low-level construals are based on context-specific and pragmatic cognitions.

Psychological distance plays an important role in activating high- or low-level construals. As individuals perceive an event as psychologically distant, they are more likely to have high-level construals rather than low-level construals. In other words, individuals perceive a psychologically distant event in terms of its prototypical and global

aspects of the event. In contrast, individuals consider idiosyncratic aspects of a psychologically close event. While there could be many different dimensions of psychological distance, research on CLT has mainly focused on three dimensions, spatial distance, social distance, and temporal distance, responsible for activation of high- or low-level construals (Trope et al., 2007).

A spatially distant location can activate high-level construals and a spatially close location can activate low-level construals (Henderson, Fujita, Trope, & Liberman, 2006). For example, Fujita and colleagues (2006) conducted two experiments in their study to examine whether individuals would have high- or low-level construals depending on spatial distance (i.e., spatially distant vs. close location). In one experiment, the researchers had their participants watch a video clip depicting two individuals conversing with each other. In one condition, the participants were instructed that the conversation in the video clip had taken place in a spatially distant location. In the other condition, the participants received the instruction that the conversation had taken place in a spatially close location. Then, the participants in both conditions were asked to write what they saw in the video clip. The researchers content-analyzed participants' writings and found that the participants in the distant condition were more likely to use abstract languages in their writing than those in the close condition were. Thus, the researchers concluded that a physically distant location activated high-level construals, which were reflected in individuals' writings.

Social distance also activates different levels of construals. When conceptualized as distance between oneself and others along a meaningful dimension such as group membership and familiarity, socially distant others activate high-level construals and

socially close others activate low-level construals (Idson & Mischel, 2001; Linville, Fischer, & Yoon, 1996). For example, individuals used only a few typical and global traits to describe out-group members (i.e., high-level construals), whereas individuals used many idiosyncratic, sometimes conflicting, adjectives to describe in-group members' traits (i.e., low-level construals) (Linville et al., 1996).

Temporal distance is the psychological distance focused on in the current study. Research showed that temporally distant vs. close events activated high-level vs. low-level construals about the events (Fujita, Eyal, Chaiken, Trope, & Liberman, 2008; Kivetz & Tyler, 2007; Liberman & Trope, 1998; Liberman, Sagristano, Trope, 2002; Liberman, Trope, McCrea, & Sherman, 2007; Nussbaum, Liberman, & Trope, 2006). For instance, researchers found that individuals were more likely to rely on global personality traits of their acquaintances, and thus more likely to expect their acquaintances to behave consistently across different situations in the distant future than in the near future (Nussbaum et al., 2003). Other researchers also provided evidence that temporal distance played an important role in activating different levels of construals (Liberman & Trope, 1998; Liberman et al., 2007). While individuals had more abstract reasons why they might perform a variety of behaviors in a distant future than in a near future, they had more concrete cognitions about how they might perform a variety of behaviors in a near future than in a distant future (Liberman & Trope, 1998; Liberman, Trope, McCrea, & Sherman, 2007). These researchers argued that reasons for an individual's behavior (i.e., why-cognition) reflected goal-relevant aspects of the behavior, and thus central and essential aspects of the behavior (i.e., high-level constrauls). On the other hand, individuals' cognitions about how-to-do (i.e., how-cognition) are based on means through

which individuals achieve certain goals, which are volatile to situational contingencies. In the context of organ donation, individuals may have goal-relevant why-cognitions (i.e., high-level construals) for their intention to enroll in an organ donor registry in a distant future, such as "to save lives" and "to help those in medical needs." In contrast, individuals may have goal-irrelevant cognitions (i.e., low-level construals), such as "lack of opportunity to enroll" or "unavailability of organ donor registry form" for their intention not to enroll in a near future.

Theory of Planned Behavior

According to the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), intention is a function of attitudes and subjective norms. While attitudes are based on beliefs about possible consequences resulting from performance of a behavior and evaluations of those beliefs, subjective norms refer to individuals' motivation to comply with normative expectations from others important to them. Results from meta-analyses provided support for the theoretical proposition that attitudes and subjective norms predict intentions (Armitage & Conner, 2001; Sheppard, Hartwick, & Warshaw, 1988).

TRA is limited, however, because attitudes and subjective norms predict intentions only for those behaviors over which individuals have perfect volitional control. In other words, individuals may not intend to perform a behavior despite positive attitudes and a high level of subjective norms about the behavior when the behavior is beyond their control. When individuals perceive that they do not possess resources and capabilities necessary for performing a behavior, they do not intend to perform the behavior. To address this limitation, Ajzen (1985, 1988) developed the Theory of Planned of Behavior (TPB) by including perceived behavioral control (PBC). PBC refers

to individuals' perceptions of ease or difficulty in performing a behavior, and is based on control factors that individuals perceived to be facilitating or inhibiting performance of the behavior. Meta-analyses found that attitudes, subjective norms, and PBC explained a significant amount of variance in behavioral intentions (Godin & Kok, 1996; Sutton, 1998).

CLT and TPB

Time is important in making more accurate predictions of intentions and behaviors in TPB. Ajzen (1988) argues that the relationship between intentions and behaviors are strongest when intentions are measured nearest to the time of the behavior. Temporal distance can be an important moderator between the three components of TPB (i.e., attitudes, subjective norms, and PBC) and intentions because individuals may consider the three components of TPB to a varying extent depending on temporal distance in forming intentions. Integrating CLT with TPB can provide information about which of the three components of TPB can be the basis for creating the most effective message in affecting intention to sign up on an organ donor registry in the near future.

Messages Affecting the Effects of TPB Components on Intentions

A comprehensive review of 30 intervention studies on TPB found that only half of the studies used the TPB components (i.e., attitudes, subjective norms, and PBC) to develop the interventions (Hardeman et al., 2002). Those studies that did use TPB components to develop interventions rarely reported how they manipulated the TPB components in the interventions. In addition, only two studies reported results on intentions or behaviors mediated by the TPB components. As a result, it is not feasible to draw an explicit conclusion on how interventions increase intentions through attitudes,

subjective norms, and PBC. Despite these limited findings, however, examination of 9 studies on theory-based TPB interventions included in the review and 6 studies published after the review provides rationale for the development of hypotheses in the current study.

Research showed that interventions could increase attitude, one of the TPB components that leads to intention. Some researchers found that interventions targeting attitudes actually increased attitudes, although attitudes did not mediate the relationship between interventions and actual behaviors (Hill, Abraham, & Wright, 2007). On the other hand, other researchers found evidence that intention was mediated by attitudes after exposure to interventions (Beale & Manstead, 1991; Booth-Butterfield & Reger, 2004). Also, research that did not use mediation analyses showed that people who received intervention messages had more positive attitudes and a higher level of intentions than those who did not (Brubaker & Fowler, 1990; Catherine, Sanderson, Jemmott, 1996; Crawley & Koballa, 1991; Murphy & Brubaker, 1990; Parrott, Tennant, Olejnik, & Poudevigne, 2008). In another study, however, an intervention was only effective in increasing intentions, but not attitudes (Armitage & Talibudeen, 2010). While there could be many different explanations for the mixed findings on the effectiveness of intervention messages in increasing intentions through attitudes, one possible explanation might be that intervention messages differed in the extent to which they emphasized the most salient and relevant characteristics of the target behavior. When intervention messages focus on the very beliefs individuals perceive as most relevant, they may be successful in increasing intentions through attitudes. Consistent with this explanation, a message targeting salient beliefs underlying attitudes was more likely to increase

attitudes and intentions (Chatzisarantis & Hagger, 2005) and message processing (Fabrigar, Priester, Petty, & Wegener, 1998) than a message targeting non-salient beliefs.

Intervention studies on TPB also reported mixed findings on the effectiveness of interventions in increasing intentions through subjective norms. While some studies reported that interventions increased subjective norms and intentions (Brubaker & Fowler, 1990; Hill, Abraham, & Wright, 2007; Parker, Stradling, & Manstead, 1996), others did not find such results (Booth-Butterfield & Reger, 2004; Elliot & Armitage, 2009; Parrott, Tennant, Olejnik, & Poudevigne, 2008). Also, some researchers did not manipulate subjective norms in their interventions at all (Brubaker & Fowler, 1990) or vaguely manipulated the construct by stating "others" to indicate important others to their participants (Hill, Abraham, & Wright, 2007), but found increased subjective norms after interventions. On the other hand, one study manipulated subjective norms and found increased subjective norms after interventions (Murphy & Brubaker, 1990), while another study did not manipulate subjective norms, and thus did not find increased subjective norms after interventions (Beale & Manstead, 1991).

The mixed findings on the effectiveness of interventions in increasing subjective norms indicate that it is very difficult to manipulate subjective norms in a way believable to individuals. Given that subjective norms refer to normative pressures from people important to oneself, researchers should know not only those people important to each participant but also the level of normative pressures those people important to each participant exert on him or her. Although some researchers identified those whom their participants considered important through in-depth interviews before composition of intervention messages (Armitage & Talibudeen, 2010; Elliot & Armitage, 2009), the

researchers were not able to assess the level of normative pressure their participants perceived to receive from others important to them.

Ajzen (1985, 1988) argues that when individuals perceive a behavior beyond their control, PBC should predict intention. Research on organ donation showed that individuals perceived enrollment beyond their control because most individuals reported a lack of time as one of major reasons for their unwillingness to enroll in the near future. Although research showed that PBC was not related to intention to enroll (Park & Smith, 2007; Yun & Park, 2010), thus indicating that individuals may perceive enrollment under their control, it is also possible that individuals overestimated their PBC, which led individuals to believe that enrollment is under their control. Individuals may overestimate their PBC because they expect to eventually have enough time and opportunities to enroll.

Research on persuasive communication indicates that individuals attend to different aspects of a message depending on whether or not the message is relevant to them (Petty & Cacioppo, 1984; Petty, Cacioppo, & Goldman, 1981). When individuals perceive that a persuasive message is relevant to them, they consider the quality of the arguments contained in the message in changing their attitudes. However, individuals consider credibility of the message source in changing their attitude when the message topic is not relevant to them (Petty et al., 1981). These results indicate that message relevance plays an important role in encouraging individuals to consider one aspect of a persuasive message as opposed to others in changing attitudes.

Temporal distance could be also an important factor that renders certain aspects of messages more effective than others. As individuals have high-level construals of a behavior in a distant future (Trope et al., 2007), a message activating high-level

construals would be more effective in increasing intention to perform the behavior in a distant future than in a near future. On the other hand, a message matching low-level construals would be more effective to increase intention in a near future than in a distant future. Fujita and colleagues conducted two experiments to compare two different messages, different in the beliefs each message emphasized, in terms of their influence on attitude depending on temporal distance (Fujita et al., 2008). In Study 1, the researchers randomly assigned their undergraduate student participants to one of two experimental conditions. In one experimental condition, the participants imagined themselves taking a class the following semester (i.e., near future). The participants read two messages containing statements describing the class. One message had statements mainly emphasizing primary and goal-relevant features of the class (i.e., high-level arguments), while the other message emphasized goal-irrelevant peripheral aspects of the class (i.e., low-level arguments). In the other condition, the participants imagined themselves taking the same class the following year (i.e., distant future) and read two messages identical to those the participants in the first condition read. The researchers found that the participants who imagined taking the class in the distant future exhibited more positive attitude toward the message with high-level arguments than toward the message with low-level arguments. Similarly, in Study 2, the researchers found that the participants preferred a message describing positive desirability features of an electronic device (i.e., high-level arguments) to a message describing feasibility features of the electronic device (i.e., low-level arguments) when the participants imagined themselves buying the device in the distant future. These results indicate that temporal distance renders individuals to attend to different aspects of a behavior. Thus, a message based on pragmatic, specific,

and contextualized aspects of a behavior (i.e., low-level construals) would be more likely to increase intention in a near future than a message focusing on essential, global, and idealistic aspects of the same behavior.

Hypotheses and Research Questions

Effects of Messages on Intentions. The primary goal of the current study is to find a way to increase individuals' behavioral intention to sign up on a donor registry in a near future. The preliminary study done by this authors showed that individuals have weaker intentions to sign in a near future than in a distant future. Although deceased organ donation can save many lives, a young person signing up on a donor registry today does not save other lives immediately. A message targeted at correcting myths about organ donation and informing general benefits of organ donation may help improve individuals' view about deceased organ donation, but may have a limited effect on the signing behavior itself. When imagining to perform the signing behavior in a near future, individuals may focus more on concrete and practical matters (e.g., too busy with doing other stuff, lack of time in searching for a Web site on organ donation). Because individuals may not be aware of the benefits of immediate enrollment, they may not see the need to sign up soon and may have no problem with postponing it. Reading a message that lists the benefits of immediate enrollment can be a way to motivate individuals to have stronger intention to sign in a near future. Thus, the following hypothesis is advanced:

Hypothesis 1: Individuals reading a message emphasizing immediate enrollment will indicate stronger intention to sign in two weeks than individuals who

did not read any message or individuals who read a message about general benefits and facts of organ donation.

Effects of Messages on the Relationships among TPB Components. As predicted by the hypothesis, a message emphasizing immediate enrollment may increase intention to sign in a near future. Although the message can directly affect intention, the message may also have an effect on the way each of TPB is related to intention to sign. The preliminary study of this author found that TPB components explained a smaller amount of variance in intention to sign within two weeks (adjusted $R^2 = .50$) than in intention to sign in two year (adjusted $R^2 = .74$). The current study questions whether the message emphasizing immediate enrollment can help TPB components to explain an increased amount of variance in intention to sign within two weeks.

Attitudes and intention. If a message emphasizing immediate enrollment can convince individuals to think more positively about enrolling in a near future (e.g. within two weeks), the message may strengthen the effects of attitudes on intention to sign up on an organ donor registry in a near future. However, if attitudes represent a high-level construal in such a way that attitudes about signing reflect abstract and idealistic values such as saving lives, the message emphasizing immediate enrollment may not be effective in affecting attitudes because message is supposed to make the signing behavior itself more salient than organ donation in general. The preliminary study done by this author showed that the relationship between attitudes and intention to sign was weaker when the TPB components were about two weeks than when they were about two years. This finding was consistent with the prediction that attitudes as abstract and idealistic concepts would be more strongly related to intention to sign in two years than intention to

sign within two weeks. To consider a possibility that the message emphasizing immediate enrollment may have an impact on the relationship between attitudes and intention, the following research question is posed:

Research Question 1: Will attitudes about signing be differentially related to intention to sign across the different message conditions?

Perceived behavioral control and intention. The preliminary study done by this author showed that perceived behavioral control was more strongly related to intention to sign when the TPB components were about two years than when they were about two weeks. This finding was inconsistent with the prediction that perceived behavioral control as concrete and practical concepts would be more strongly related to intention to sign within two weeks than intention to sign in two years. Because perceived behavioral control refers to individuals' perceptions of ease or difficulty in performing a behavior and considerations of barriers in performing the behavior, the preliminary study assumed that perceived behavioral control over the signing behavior might address individuals' consideration of practical matters and inhibitors such as a lack of time and inconvenient access to an organ donor registry. However, the preliminary study finding implied that perceived behavioral control might be closer to a high-level construal than a low-level construal. For the target group of the current study, individuals who have not enrolled but are willing to do so someday, may have an optimistic notion about the signing behavior (e.g., "when I am ready or certain about being a designated donor, I can easily find a way to sign up on a donor registry"). For tech-savvy college-aged people, finding an organ donor web registry might not be a relevant consideration, but instead whether one is mentally ready might be an important matter making it easy or difficult to sign up. As

long as perceived behavioral control is conceptualized and measured as perceived ease or difficulty in performing the behavior, it may be possible that perceived behavioral control over signing up on a donor registry may represent individuals' abstract projection of when they will be ready to become designated donors.

On the other hand, Park and Smith (2007) and Yun and Park (2009) reported that perceived behavioral control was not significantly related to intention to sign when the measurements of both perceived behavioral control and intention did not specify any time frame. For the behavior of signing up on a donor registry, past research findings seem to be inconsistent and unclear about the role of perceived behavioral control for behaviors to be performed in different times. Thus, for the effect of a message emphasizing immediate enrollment on the relationship between perceived behavioral control and intention to sign, a research question is posed as follows:

Research Question 2: Will perceived behavioral control be differentially related to intention to sign across the different message conditions?

Subjective norms and intention. While CLT is not directly concerned with the differential influence of social pressures from important others on intention, temporal distance may affect the relationship between subjective norms and intentions. The influence of subjective norms on intentions may be greater for a behavior to be performed in a distant future than in a near future, or vice versa, depending on individuals' own reasons for complying with subjective norms. Some uncertainty exists as to whether subjective norms are a high-construal concept or a low-construal concept associated with intentions to sign. On the one hand, individuals may be motivated to possess a positive and idealistic self-image by conforming to subjective norms, thus pleasing important

others. Individuals may want to have the self-image of a person who has harmonious social relationships with important others. Individuals may want to be a good and altruistic person of whom important others can be proud. Individuals consider idealistic aspects of a behavior when forming intentions to perform a behavior in a distant future (Liberman & Trope, 1998). If consideration of subjective norms about signing represent an idealistic aspect of signing up on a donor registry, the influence of subjective norms on intentions will be greater for a distant future than for a near future.

On the other hand, if individuals' consideration of subjective norms reflect practical matters, the influence of subjective norms on intentions will be greater for a near future than for a distant future. For example, the practical matters can involve coming across the right moment to find out what important people such as family members expect an individual to do regarding signing up on a donor registry. Most of the individuals who had enrolled were found to have communicated their enrollment to their family members (Morgan & Miller, 2001). But the target group of the current study, individuals who have not enrolled but are willing to do so someday, may have a varying level of uncertainty about what important people such as family members expect. If subjective norms represent concrete images of when, where, and how an individual found out important people's expectations in the past or can know them later, subjective norms may represent a low-level construal associated with intentions for a near future. Although the preliminary study done by this author showed that subjective norms were similarly related to intention to sign regardless of whether the TPB components were about two years or two weeks, the current study considers a possibility that a message can affect the relationship between subjective norms and intention to sign. A message emphasizing

immediate enrollment may be able to convince individuals to think more seriously about what enrolling in a near future (e.g., within two weeks) may mean. If so, it is questioned whether individuals who read the immediate enrollment message can be different from those who do not in terms of how subjective norms may be related to intention to sign within two weeks.

Research Question 3: Will subjective norms be differentially related to intention to sign across the different message conditions?

Method

Participants

Participants were undergraduate students enrolled at a large university in the Midwestern area. A total of 304 undergraduate students participated in the current study. Of participants (56.3% female), 68.1% were White American, 13.5% were African American, 4.6% were Asian American, 1.6% Hispanic American, and 12.2% were individuals of other ethnicities. Participants' age ranged from 18 to 53 ($M = 21.62$, $SD = 1.64$). Since the current study used a college student sample, students who were not considered to be traditional college students were excluded from analyses. To be specific, participants whose age constituted less than 1% were excluded from analyses. As a result, participants' age ranged from 18 to 27 ($M = 21.22$, $SD = 3.21$) in the current sample. Nineteen participants (6.1%) who reported that they had already signed an organ donor registry were excluded from analyses.

Design and Procedure

Participants were randomly assigned to one of three conditions; a control condition, an experimental message condition, and a comparison message condition. The

control condition did not show any message to participants and measured participants' attitude, subjective norms, PBC, and intention to sign up within two weeks.

Manipulation

The experimental message (i.e., a message listing the benefits of immediate enrollment) contained contents encouraging people to sign up right away. A previous study (Yun, 2010) had its participants to list reasons for and against signing an organ donor registry within two weeks. The analysis of the participants' responses provided information useful for constructing the experimental message. For example, the experimental message described benefits resulting from immediate enrollment, such as experiencing positive emotions resulting from enrollment and helping build high functioning state donor registries. The experimental message also included the information that many American people had already enrolled in an organ donor registry and that enrollment did not take too much time. On the other hand, the comparison message contained content adopted from the Gift of Life Michigan web site (the state's only federally designated organ and tissue recovery program in Michigan that also maintains the Michigan Organ Donor Registry) and the Donate Life America web site (a national coalition comprised of national organizations and 47 local affiliates across the United States that coordinate donation related activities at the grassroots level). To be specific, the comparison message contained factual information that anybody can be a potential donor regardless of age, race, or medical history, that major religions support organ donation, and that there is no cost to the donor or their family for organ donation.

The experimental message was expected to affect intentions to sign up to a greater extent than the control condition and the comparison message. Participants in the

experimental message condition and in the comparison message condition answered questions about their attitude, subjective norms, PBC, and intention to sign up within two weeks. See Appendix I for the messages.

Measurements

The measurement items of intention, subjective norms, and perceived behavioral control used a 5-point Likert response format (1 = strongly disagree, 5 = strongly agree). The measurement items of attitudes used a 5-point semantic differential response format (e.g., 1 = bad, 5 = good). Participants were also asked to indicate 1) whether they were a Michigan resident with a valid Michigan driver's license, 2) whether they had signed up on the State of Michigan organ donor web registry, 3) whether they were willing to donate their organs and tissue at the time of death. Participants provided demographic information and their state of residence. Table 1 provides means, standard deviations, and reliabilities for each variable as well as correlations among variables.

Attitudes. Four items assessed attitudes about signing within two weeks ($M = 3.87$, $SD = 0.68$, $\alpha = .81$) (i.e., "Signing up on an organ donor registry within two weeks is....") on bad-good, unwise-wise, unfavorable-favorable, and not beneficial-beneficial.

Subjective norms. Four items assessed subjective norms about signing within two weeks ($M = 2.44$, $SD = 0.83$, $\alpha = .83$) (e.g., "Most people who are important to me think that I should sign up on an organ donor registry within two weeks.").

Perceived behavioral control. Four items assessed perceived behavioral control over signing within two weeks ($M = 3.76$, $SD = 0.92$, $\alpha = .90$) (e.g., "It is easy to sign up on an organ donor registry within two weeks.").

Intentions. Four items assessed intention to sign within two weeks ($M = 2.68$, $SD = 1.00$, $\alpha = .95$) (e.g., "I intend to sign up on an organ donor registry within two weeks.").

Contact. Two questions were used as proxy measures for signing behavior. One question asked whether participants were willing to be contacted for enrolling in an organ donor registry within two weeks (26% of participants indicated yes). The other question asked whether participants were willing to be contacted for enrolling in the future (50% yes).

Confirmatory Factor Analysis was conducted to test distinctiveness of attitudes, subjective norms, PBC, and intention. Results showed that a four-factor solution was acceptable, Normed Fit Index (NFI) = .90, Comparative Fit Index (CFI) = .94, Incremental Fit Index (IFI) = .94, indicating that attitudes, subjective norms, PBC, and intention were four separate constructs.

Results

Overview

Nineteen participants (6.1%) who had signed an organ donor registry were excluded from analyses because they could not sign again. In addition, only Michigan State residents (n = 279, 89.1%) were included in the analyses because individuals in different states and countries may have different opinions and attitudes about organ donation. As a result, 29 (9.3%) international students and 34 (10.9%) US citizens from other states were excluded from analyses. Since one of the purposes of the current study was to provide implications for communication campaigns for those who are willing to donate, the current study included only those who were willing to donate at the time of death (n = 247, 79.7%). The remaining number of participants (n = 186) available for the

main analyses yielded about 62 participants for each of the three conditions. The number of participants was sufficient for detecting a moderate size of effect. For comparing the experimental condition and the control condition, the minimum required sample size per group is 51 for Cohen's *d* of .50 (i.e., $r = .24$) and desired statistical power level of .80 when testing a one-tailed hypothesis. However, the number of participants would not be sufficient for detecting a small size of effect. For comparing the experimental condition and the control condition, the minimum required sample size per group is 310 for Cohen's *d* of .20 (i.e., $r = .10$, a moderate effect size) and desired statistical power level of .80 when testing a one-tailed hypothesis.

The Effects of Messages on Intention

H1 predicted that individuals reading a message emphasizing immediate enrollment will indicate stronger intention to sign in two weeks than individuals who did not read any message or individuals who read a message about general benefits and facts of organ donation. To test H1 about differences across three conditions, one-way ANOVA (Analysis of Variance) was conducted with intention to sign within two weeks as the dependent variable. Results did not show a significant main effect for the condition, $F(2, 183) = 0.04$, $p = .958$, $\eta^2 = .00$. Thus, data were not consistent with H1. Means and standard deviations for each condition are provided in Table 1.

Effects of Messages on the Relationships among TPB Components

Regression analysis was conducted to answer research questions. Before analysis, two dummy variables were created. For the dummy variable, Condition[1], the experimental message condition was coded as 0 and the comparison message condition was coded as 1. Significance for Condition[1] indicates difference between individuals in

these two conditions. For the dummy variable, Condition^2, the experimental message condition was coded as 0 and the control condition was coded as 1. Attitudes, subjective norms, and PBC were mean-centered before multiplied with each dummy variable. For hierarchical multiple regression analysis, the first block included two dummy variables, attitudes, subjective norms, and PBC, and the second block included interaction terms between the dummy variables and the continuous variables.

Results indicated that the overall model was significant, F (11, 174) = 9.39, p < .001, $adj.R^2$ = .33. The predictors in the first block contributed to intention to sign, F (5, 180) = 19.73, p < .001, $adj.R^2$ = .33. Attitudes was positively related to intention: unstandardized coefficient [B] = 0.45, SE = .10, β = .31, t = 4.71, p < .001, squared semipartial correlation [sr^2] = .08. Subjective norms was also positively related to intention, B = 0.44, SE = 0.08, β = .37, t = 5.90, p < .001, sr^2 = .012. However, PBC was not related to intention, B = 0.12, SE = 0.07, β = .11, t = 1.78, p = .077, sr^2 = .01. The dummy variable, Condition^1, was not significant, B = 0.04, SE = 0.14, β = .02, t = 0.29, p = .773, sr^2 = .00, indicating that the participants in the experimental message condition and those in the comparison message condition had a similar level of intention to sign within two weeks. The dummy variable, Condition^2, was not significant, B = –0.14, SE = 0.15, β = –.07, t = –1.00, p = .341, sr^2 = .00. These results indicate that the participants in the experimental message condition and those in the control condition did not differ in their intention to sign within two weeks.

To answer research questions, the interaction terms in the second block were examined. The predictors in the second block did not contribute to intention to sign,

F_{change} (6, 174) = 0.86, p = .528, R^2_{change} = .02. RQ1 asked whether the relationship between attitudes and the intention would defer depending on the two message conditions and the control condition. The interaction between Condition[1] and attitude was not significant, B = 0.03, SE = 0.22, β = .01, t = 0.11, p = .912, sr^2 = .00. These results indicated that participants in the experimental message condition and those in the comparison message condition considered attitude to a similar extent in forming intention to sign within two weeks. The interaction between Condition[2] and attitudes was not significant either, B = –0.13, SE = 0.25, β = –.05, t = –0.53, p = .596, sr^2 = .00. These results showed that participants in the experimental message condition and those in the control condition did not differ in their reliance on attitudes in forming the intention.

RQ2 asked about differential relationship between subjective norms and intention to sign within two weeks depending on the two message conditions and the control condition. The interaction between Condition[1] and subjective norms was not significant, B = –0.06, SE = 0.18, β = –.03, t = –0.35, p = .727, sr^2 = .00. These results indicated that participants in the experimental message condition and those in the comparison message condition considered subjective norms to a similar extent in forming the intention. On the other hand, the interaction between Condition[2] and subjective norms was not significant, B = 0.20, SE = 0.19, β = .10, t = 1.05, p = .296, sr^2 = .00. That is, the relationship between subjective norms and the intention was similar both in the experimental message condition and in the control condition. RQ3 asked whether PBC would be differentially related to intention across different message conditions. Results showed that the interaction between Condition[1] and PBC was not significant, B = –0.27, SE = 0.18, β = –

.13, $t = -1.49$, $p = .137$, $sr^2 = .01$. The relationship between Condition^2 and PBC was not significant, $B = -0.03$, $SE = 0.17$, $\beta = -.02$, $t = -0.20$, $p = .842$, $sr^2 = .00$. These results indicated that individuals' reliance on PBC in forming the intention was similar across the three conditions in the current study.

Additional Findings

To examine whether participants would differ in their willingness to be contacted about enrolling in an organ donor registry in two weeks or in the distant future, two chi-square analyses were conducted. The first chi-square analysis used the condition the participants were assigned to (i.e., the experimental message condition, the comparison message condition, or the control condition) and willingness (i.e., willingness or unwillingness to be contacted about enrolling in two weeks). Results indicated that participants did not differ in their willingness to be contacted about enrolling in two weeks across the three conditions, χ^2 (2) = 0.53, $p = .767$. Table 4 shows the frequencies of those willing or unwilling to be contacted about enrolling within two weeks for each condition. The second chi-square analysis used the condition the participants were assigned to and willingness. Results revealed that participants did not differ in their willingness to be contacted about enrolling in the future across the three conditions, χ^2 (2) = 4.53, $p = .104$. Table 5 shows the frequencies of those willing or unwilling to be contacted about enrolling in the future.

Discussion

Summary and Interpretation

CLT holds that individuals consider specific aspects of a behavior when they intend to perform the behavior in a near future, whereas individuals consider broad and

general aspects of the same behavior when they intend to perform the behavior in a distant future (Trope & Liberman, 2003; Trope et al., 2007). Focusing on intention to sign an organ donor registry in a near future, the current examined whether a message emphasizing benefits of immediate enrollment would be more effective in increasing intention to sign an organ donor registry in the near future than a message describing general benefits and facts about organ donation or no message at all. In addition, the current study examined differential influence of TPB components (i.e., attitude, subjective norms, and PBC) on intention to sign in a near future depending on exposure to different messages or no message.

Results revealed that individuals had a similar level of intention to sign in a near future whether they read a message describing benefits of immediate enrollment, a message describing general benefits and facts of organ donation, or no message. These results were not consistent with the expectation based on CLT that a message consistent with low-level construals might be more effective than a message with high-level construals in increasing intention to perform a behavior in a near future. One reason for the results might be that the experimental message and the comparison message in the current study were not strong enough to encourage individuals to sign an organ donor registry in the near future. Since individuals may not consider enrollment as a priority, stronger messages than those in the current study should be employed to render individuals to feel enrollment as exigent. Such messages may emphasize societal benefits resulting from one's enrollment, which were not included in the two messages of the current study. Societal benefits may include saving lives and ending the sufferings of patients and their families in society. To the extent that individuals perceive these

benefits as practical, specific, and imminent (i.e., low-level construals), they may intend to sign an organ donor registry in the near future.

Results also showed that attitude was related to intention to sign in the near future to a similar extent across three study conditions. The participants in the experimental message condition did not rely on their own attitude in forming the intention more than their counterparts in the comparison message condition and in the control condition did. One possible explanation for these results is similar to that provided for the findings about similar level of the intention across three study conditions. That is, the experimental message was not stronger than the comparison message or no message to render individuals to rely on their attitude to a greater extent in forming intention than the participants in other conditions.

Subjective norms was not related to intention to sign in the near future to a different extent across three study conditions. The participants in the experimental message condition did not estimate a higher level of social norms than the participants in the other conditions, and the former did not consider subjective norms more than the latter did in forming intention. One explanation might be that while the experimental message had information about social norms, it did not directly address subjective norms. Since subjective norms refer to normative expectations from important others (Ajzen, 1985, 1988), it is very difficult to manipulate subjective norms unless normative expectations each person has about his or her important others are known to researchers. After reading the message that a majority of Americans have already signed, the participants in the experimental message condition were expected to project the societal level norms onto their personal level. That is, the participants were expected to feel that

their important others (e.g., family members) would belong to the majority who had already signed and that their important others would think the participants should sign an organ donor registry soon. However, results from the current study were not consistent with the expectation.

For the relationship between PBC and intention, results indicated that the experimental message did not differ from the comparison message or no message in its ability to make individuals consider PBC in forming intention. Research on CLT showed that individuals were more likely to consider feasibility than desirability for a near future behavior (Liberman & Trope, 1998), and thus individuals reading a message addressing PBC (i.e., the experimental message) were expected to consider PBC to a greater extent than those reading a message not addressing PBC or no message at all in forming intention to sign in a near future. One explanation for the results inconsistent with the expectation may be that while the experimental message was designed to increase PBC by describing enrollment as an easy behavior, a stronger manipulation of PBC might have increased PBC as well as predictive power of PBC. For example, a message may provide more detailed information about how individuals can sign an organ donor registry or may provide an actual link to donor registries.

Limitations

The current study has three primary limitations. First, since the current study used a student sample, results from the current study may not be generalizable to other populations. However, college students share similar demographic characteristics of those more willing to donate organs (e.g., higher level of education and younger age), which makes college students effective communication campaign targets (Feeley &

Servoss, 2005). As the enrollment in colleges across the US has been increasing over the years, from 14.4 million in 2000 to 17.1 million in 2006 (US Census, 2010), communication campaigns exclusively focusing on college students are expected to result in a high enrollment rate.

Second, given the non-significant findings for the hypothesis and research questions, the two messages in the current study might have been too weak to affect the relationship between TPB components (i.e., attitude, subjective norms, and PBC) and the intention. In addition, a single message, no matter how strong it is, may not be sufficient to encourage individuals to sign an organ donor registry in the near future. Thus, a series of messages might be necessary for successful interventions.

Third, the current study focused on intention instead of actual behaviors. While results from the current study showed that attitude and subjective norms were related to intention, examination of the relationship between attitude, subjective norms, intention, and actual behavior would provide more useful implications for theories and health communication campaigns. In addition, a longitudinal design may be more appropriate than a cross-sectional design in the examination of actual behavior.

Implications for Campaigns

The current study has two some implications for health communication campaigns about organ donation. First, the current study found that attitude was related to intention to sign in the near future. However, results from the current study imply that message emphasizing benefits of immediate enrollment and benefits and general facts about organ donation are not effective in increasing attitude and intention to sign an organ donor registry in the near future. Instead, other aspects of enrollment or organ

donation might be fruitful. An effective campaign message to increase attitude may include more tangible and imminent societal benefits resulting from one's enrollment.

Second, the current study found that subjective norms was related to intention to sign an organ donor registry in the near future. However, the current study found evidence indicating that a single message may not increase subjective norms. Rather than a single message, interventions may need to involve multiple sessions targeting at small group of individuals (e.g., family, friends groups) so that individuals would have normative expectations among themselves from positive information about organ donation, including societal benefits.

Theoretical Implications

Despite some limitations, the current study has important theoretical implications. The current study examined intention to perform a behavior in the near future. In doing so, the current study combined TPB (Ajzen, 1985, 1988) and CLT (Trope et al., 2007) in an attempt to better predict individuals' intention. Given past findings that individuals consider different components of TPB depending on temporal distance (near future behavior vs. distant future behavior), it may be beneficial for TPB studies to specify time frame so that studies can increase prediction accuracies. While the current study did not find evidence indicating that a message containing low-level construals is more effective in increasing attitudes, subjective norms, and PBC regarding enrollment in a near future than a message including high-level construals was, the current study was the first attempt to examine messages with the consideration of temporal distance. Future research needs to employ stronger manipulation in other behavioral contexts.

Conclusion

As a predictor of behavior, intention is an important focus of many social psychological theories and communication campaigns. While many theories have theoretical propositions predicting intentions, they do not consider temporal distance or time frame. Since individuals consider different aspects of a behavior in forming intention to perform a behavior in the near future or in the distant future, it is important to test how well constructs of a theory and manipulations of the constructs predict intention depending on temporal distance. Future research should employ stronger manipulations, or messages including constructs relevant to individuals' different cognitions depending on temporal distance.

Appendix A *Experimental Message*

Why wait?
Sign up on the Michigan organ donor registry now

If you are willing to be an organ donor at the time of your death in order to save the lives of many other people. Don't wait until it is too late, and don't postpone enrolling on a donor registry. Enroll soon and become a designated donor. Enrolling yourself on a state organ donor web registry sooner than later is a good thing to do for many reasons.

1. Feel good.
Enrolling on a state organ donor web registry is an altruistic behavior. Enrolling now does not mean that you donate your organs now. But enrolling now increases greatly the potential to save many others' lives later. You will certainly feel good after adding your name to the Michigan Organ Donor Registry. Signing up means you have done one more good deed for society!

2. Have no worries.
If you sign up now, you don't have to do it again. Whenever you hear or see organ donation sign-up campaign messages, you can tell yourself, family, and friends, "I did it already" and smile ☺

3. Join many others who already did it.
Join 86.3 million people who are already enrolled on donor registries in the United States. These people didn't postpone enrollment. Why should you?

4. Help create high-functioning state donor registries.
Your enrollment helps organ donor registries to be more valuable. The more people enroll on state donor registries, the more useful the donor registries become. For example, matching donors and patients in need can be done faster and more effective.

5. Make it easy for your family and loved ones.
Enrollment helps family and loved ones to avoid confusion or delays if they happen to be left with making the donation decision.

6. Got a minute? Got a computer? Can you Google "organ donation Michigan"?
Only a couple of clicks on the Internet can get you to the Michigan organ donor registry. Let's get to it!

Appendix B *Comparison Message*

Why be an organ donor?
Organ donation saves lives

There is no greater gift you can share than the gift of life. Become an organ and tissue donor. Your decision could save or improve the lives of as many as 50 people. Help the thousands of people in Michigan waiting for a transplant.

Organ and tissue transplants offer patients a new chance at healthy, productive, normal lives and return them to their families, friends and communities. You have the power to change someone's world by being a donor. It's about living. It's about Life.

Despite continuing efforts at public education, misconceptions and inaccuracies about donation persist. Learn these facts to help you better understand organ, eye and tissue donation:

Fact: Anyone can be a potential donor regardless of age, race, or medical history.

Fact: All major religions in the United States support organ, eye and tissue donation and see it as the final act of love and generosity toward others.

Fact: If you are sick or injured and admitted to the hospital, the number one priority is to save your life. Organ, eye and tissue donation can only be considered after you are deceased.

Fact: When you are on the waiting list for an organ, what really counts is the severity of your illness, time spent waiting, blood type, and other important medical information, not your financial status or celebrity status.

Fact: An open casket funeral is possible for organ, eye and tissue donors. Through the entire donation process the body is treated with care, respect and dignity.

Fact: There is no cost to the donor or their family for organ or tissue donation.

Appendix C *Measurements*

Measurements

A1. Are you a Michigan resident with a valid Michigan driver's license? Yes _____ No _____

A2. Are you currently an organ donor with a red heart symbol on the front of your Michigan driver's license? Yes _____ No _____

A3. Are you currently an organ donor who has signed the back of your driver's license with signature of a witness? Yes _____ No _____

A4. Are you currently an organ donor who has signed up on the State of Michigan organ donor web registry? Yes _____ No _____

A5. Are you a registered organ donor in another state? Yes _____ No _____

A6. Have you had a conversation with your family about your wishes to be an organ donor?
Yes _____ No _____

A7. If you are not currently an organ donor who has signed up on a donor registry, are you willing to sign up on an state organ donor registry someday. Yes ____ No _____

A8. Are you willing to donate your organs and tissue at the time of death. Yes _____ No _____

D1. Your age _____

D2. Your Gender: Male _____ Female _____

D3. Your Ethnicity (check one):
Caucasian _____
African American _____
Native American _____
Asian American _____
Hispanic _____
Pacific Islander _____
Mixed (please specify) _____
Other (please specify) _____

D4. Your Academic Status (check one):
Freshman _____ Sophomore _____ Junior _____
Senior _____ MA student _____ Ph.D. student _____

D6. Are you an international student? Yes _____ No _____
If yes, which country are you from? _____

BIS1. I intend to sign up on an organ donor registry within two weeks.
BIS2. I mean to sign up on an organ donor registry within two weeks.
BIS3. I have it in my mind to sign up on an organ donor registry within two weeks.
BIS4. I will sign up on an organ donor registry within two weeks.

Signing up on an organ donor registry within two weeks is:

Good	_____ Very good	_____ good	_____ neutral	_____ bad	_____ Very bad	Bad
Unwise	_____ Very unwise	_____ unwise	_____ neutral	_____ wise	_____ Very wise	Wise
Favorable	_____ Very favorable	_____ favorable	_____ neutral	_____ unfavorable	_____ Very unfavorable	Unfavorable
Beneficial	_____ Very beneficial	_____ beneficial	_____ neutral	_____ unbeneficial	_____ Very unbeneficial	Unbeneficial

SN1. Most people who are important to me think that I should sign up on an organ donor registry within two weeks.
SN2. Most people whose opinion I value consider that I should sign up on an organ donor registry within two weeks.
SN3. It is expected of me that I sign up on an organ donor registry within two weeks.
SN4. My family and friends in general think that I should sign up on an organ donor registry within two weeks.

PBCS1. It is easy to sign up on an organ donor registry within two weeks.
PBCS2. Ways to sign up on an organ donor registry within two weeks are easily available to me.
PBCS3. I can sign up on an organ donor registry within two weeks.
PBCS4. I know how to sign up on an organ donor registry within two weeks.

Q1. May we contact you within two weeks about enrolling in an organ donor registry?
Yes_____ No_____
Q2. May we contact you in the future about enrolling in an organ donor registry?
Yes_____ No_____

Table 1 Zero-Order Correlations, Reliabilities, Means, and Standard Deviations

		Attitudes	SN	PBC	Intention	Contact in two weeks[1]	Contact in the future[2]
Attitudes		(.81)					
SN		.28**	(.83)				
PBC		.31**	.15*	(.90)			
Intention		.45**	.48**	.27**	(.95)		
Contact[1]		.28**	.19*	.14	.29**	NA	
Contact[2]		.20**	.11	.12	.21**	.57**	NA
Experimental	*M*	3.86	2.45	3.91	2.73	NA	NA
Condition (n = 68)	*SD*	0.65	0.76	0.84	0.77		
Comparison	*M*	3.89	2.50	3.77	2.79	NA	NA
Condition (n = 61)	*SD*	0.74	0.89	0.84	1.01		
Control	*M*	3.86	2.38	3.57	2.51	NA	NA
Condition (n = 57)	*SD*	0.67	0.86	1.08	1.20		
	M	3.87	2.44	3.76	2.68	NA	NA
Total (N = 186)	*SD*	0.68	0.83	0.92	1.00		
ANOVA Results		$F(2, 183) = 0.04, p = .958, \eta^2 = .00$	$F(2, 183) = 0.32, p = .728, \eta^2 = .00$	$F(2, 183) = 2.07, p = .129, \eta^2 = .02$	$F(2, 183) = 1.25, p = .288, \eta^2 = .01$	NA	NA

Note: Reported on the diagonal are reliabilities for attitude, SN (Subjective norms), PBC (Perceived behavioral control), and intention to sign within two weeks. Contact in two weeks[1] is individuals' willingness to be contacted within two weeks about enrolling in an organ donor registry. Contact in the future[2] is individuals' willingness to be contacted in the future about enrolling in an organ donor registry. SN = subjective norms; PBC = perceived behavioral control. * $p < .05$, ** $p < .01$

Table 2 Regression Results

	B	*SE*	β	*t*	*sr*
First Block					
Intercept	2.54	0.10		24.94***	
Condition[1]	0.04	0.14	.02	0.29	.02
Condition[2]	–0.14	0.15	–.07	–1.00	–.10
Attitudes	0.45	0.10	.31	4.71***	.28
SN	0.44	0.08	.37	5.90***	.35
PBC	0.12	0.07	.11	1.78	.11
$F(5, 180) = 19.73, p < .000, adj.R^2 = .34$					
Second Block					
Condition[1] × Attitudes	0.02	0.22	.01	0.11	.01
Condition[1] × SN	–0.06	0.18	–.03	–0.35	–.02
Condition[1] × PBC	–0.27	0.18	–.13	–1.49	–.09
Condition[2] × Attitudes	–0.13	0.25	–.05	–0.53	–.03
Condition[2] × SN	0.20	0.19	.10	1.05	.06
Condition[2] × PBC	–0.03	0.17	–.02	–0.20	–.01
$F_{change}(6, 174) = 0.86, p = .528, R^2_{change} = .02$					

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

sr: semipartial correlation

As for multicollinearity, predictors in each block had variance inflation factor (VIF) ranging from 1.00 to 3.38, which is lower than the traditional rule of thumb of 10 (Cohen, Cohen, West, & Aiken, 2003).

Condition[1]: Dummy variable with the experimental message condition coded as 0 and the comparison message condition as 1

Condition[2]: Dummy variable with the experimental message condition coded as 0 and the control condition as 1

SN: Subjective norms

PBC: Perceived behavioral control

Table 3 Regression Results for Each Condition

Experimental Condition	*B*	*SE*	β	*t*	*sr*
Attitudes	0.49	0.11	.42	4.34***	.41
SN	0.40	0.10	.40	4.17***	.40
PBC	0.20	0.09	.22	2.34*	.22
	$F(3, 64) = 15.80, p < .001, adj.R^2 = .40$				
Comparison Condition	*B*	*SE*	β	*t*	*sr*
Attitudes	0.51	0.17	.38	3.02**	.33
SN	0.34	0.14	.30	2.51**	.28
PBC	–0.06	0.14	–.05	–0.45	–.05
	$F(3, 57) = 8.36, p < .001, adj.R^2 = .27$				
Control Condition	*B*	*SE*	β	*t*	*sr*
Attitudes	0.36	0.23	.20	1.57	.17
Subjective Norms	0.60	0.16	.41	3.71***	.40
Perceived Behavioral Control	0.17	0.14	.15	1.18	.13
	$F(3, 53) = 10.74, p < .001, adj.R^2 = .34$				

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

sr: semipartial correlation

The variance inflation factor (VIF) for all the predictors was less than 1.42, which is lower than the conventional rule of 10 (Cohen et al., 2003). Thus, multicollinearity did not pose a major concern.

Table 4 (Un)Willingness to be Contacted within Two Weeks

	Willing	Unwilling	Total
Experimental Condition	19	49	68
Comparison Condition	17	44	61
Control Condition	13	44	57
Total	49	137	186

Table 5 (Un)Willingness to be Contacted in the Future

	Willing	Unwilling	Total
Experimental Condition	36	32	68
Comparison Condition	35	26	61
Control Condition	22	35	57
Total	93	93	186

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