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The Influence of University-Related International Experience, Volunteer Service,and Service-Learning on Moral Growth

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and Service-Learning on Moral Growth

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ABSTRACT

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This thesis empirically tests whether university-related volunteer service, international experience, and service-learning have a positive moral impact on students and whether the peer reference group moderates this relationship. I use a measure of morality based on the recent work on values by Shalom Schwartz. A novel approach to measuring the social psychological phenomenon of the peer reference group is used in which the relative strength of the peer reference group is measured. The peer reference group was included in hypothesized models as a moderator between volunteer service, international experience, service-learning, and moral growth. Cross-sectional survey data of 633 engineering students was used, and most hypothesized relationships lacked statistical significance. However, university-related volunteer service has a positive and statistically significant relationship with morality. Post-hoc analysis gives some evidence that the peer group and individuals within the peer group may be the antecedent of how a student values volunteer service, international experience, and service-learning.

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INTRODUCTION

Traditionally a concern for moral growth was a part of higher education (Fleckenstein 1997:1348; Dalton, Russell, and Kline 2004; Chickering 2006); however, the moral growth of students waned in priority for a period of time (Pascarella and Terenzini 1991). In recent years, interest in research on the moral growth of students in higher education has experienced a resurgence (Mayhew and King 2008; Mayhew, Seifert, and Pascarella 2010). This may be due to a number of factors including "national scandals (e.g., predatory lending), political discussions (e.g., continuing debates about U.S. military interventions abroad), and technological advances (e.g., genetic engineering and cloning)" (Mayhew et al. 2010:357).

In this thesis I consider the influence of university-related volunteer experience, university-related international experience, and university-related service-learning on a value-based measure of moral growth. In a model of higher education student outcomes proposed by Pascarella and Terenzini (2005), these university experiences are expected to have a significant impact on student outcomes and are activities that university administration has some control over. I also investigate whether the peer group moderates these relationships. Using cross-sectional data for students attending an Intermountain West university, I conclude that university-related volunteer service has a statistically significant and positive relationship with morality (i.e., self-transcendent values). Other relationships tested were not statistically significant. Six hundred thirty-three engineering students completed the survey for this study, which is a 34% response rate.

This thesis contributes to the literature in various ways. In this thesis I use a value-based measure of moral growth taken from Schwartz's (2007) measure of moral inclusiveness (See also Schwartz 1994; Schwartz et al. 2012). Using this value-based measure I conclude that there

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is a positive association between university-related volunteer service and moral growth. This thesis adds to the literature by explicating the peer group's influence (Terenzini and Reason 2005) through a social psychological perspective. Furthermore, post-hoc analysis provides preliminary support for the assertion that the peer group may influence individual students to value university activities (e.g., volunteer service), which are associated with various outcomes in higher education. These analyses suggest that the theoretical model by Terenzini and Reason (2005) may benefit from adding the influences of the peer group as antecedents of such values.

LITERATURE REVIEW

A Brief Review of Ethics Education in Modernity

Character development used to be a more important part of higher education but has been pushed to the periphery of academic objectives in recent years. Emile Durkheim (1925) argued that encouraging student's secular moral growth through education was a necessity. As Durkheim noted, the removal of more traditional moral values in education without a secular moral replacement lead to a loss of "elements that are properly moral" (1972:110). Something was replaced with nothing. After the establishment of public universities under the Morrill Act in 1862 direct approaches to developing moral character in higher education in the United Stated declined (Pascarella and Terenzini 1991:335). In the past higher education in the U.S. was based on a model of character education (Fleckenstein 1997:1348; Dalton et al. 2004; Chickering 2006). Compared with other objectives higher education currently struggles to prepare students ethically (Rabouin 1997:249). Faculty support for holistic character education has declined (Sax et al. 1996) although such support has been proposed to be a key factor in character development (Pascarella and Terenzini 1991; Astin 1993). Starting in the 19th and throughout the 20th century character development waned in both priority and as a clearly stated goal of the U.S. higher

education experience. Studies warn that there has been a continued trend downward in student ethical growth in higher education (Kuh et al. 1997), and call for a return to a civic mission for university education (Checkoway 2001). Character development results from moral growth, which is the focus of this thesis.

Recently there has been "renewed interest in understanding the roles of colleges and universities in promoting outcomes with moral dimensions" (Mayhew et al. 2010:357). After several decades of focusing on student learning and attrition, scholars who primarily study higher education are interested again in understanding how moral growth occurs as a part of the higher education experience[1] (Mayhew and King 2008). In such studies, scholars have predominantly used the outcome of moral reasoning.

Previous research on influences on the moral growth of students in higher education has focused on a very narrow range of outcomes. Often scholars focus on identifying influences on the growth of moral reasoning (Mayhew and Engberg 2010; Mayhew et al. 2012) typically using two primary means of measuring moral growth in higher education research (Pascarella, Terenzini, and Feldman 1991): the Moral Judgment Instrument (Colby et al. 1983; Loxley and Whiteley 1986) and the Defining Issues Test (Rest, Davison, and Robins 1978; Boss 1994; Mayhew et al. 2010). The Defining Issues Test uses Likert scales to assess how a respondent thinks through a moral dilemma. The Moral Judgment Instrument uses an interview and scoring system (Colby et al. 1983) to do the same thing. Both these tests seek to identify how advanced a respondent's moral thinking is using Lawrence Kohlberg's (1973) six stages of moral development.

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[1] http://education.stateuniversity.com/pages/1844/College-its-Effect-on-Students.html

On the other hand, researchers have not found a strong connection between moral reasoning and moral action (Blasi 1980; Stets and Carter 2011). For example, Blasi's (1980) review, which remains the "definitive work on the issue over 20 years later" (Walker 2004:2), shows that moral reasoning and moral behavior are related, although moral reasoning only explains about 10% of the variance of moral action (Walker 2004). Therefore, a great deal more needs to be considered to fully understand what motivates or leads to moral action.

Researchers in higher education have sought to identify the experiences that significantly influence moral growth (Colby et al.1983; Rest and Thoma 1985; King and Mayhew 2002; Narvaez and Bock 2002; Simmons et al. 2013). Studies have focused on the effect of service-learning on the growth of moral reasoning (Boss 1994; Gorman et al. 1994). Furthermore, scholars have not addressed the influence of international experience and students engaging in general service encouraged by the university on moral growth. Studies outside of higher education have considered what leads to commitment to volunteer (Matsuba et al. 2007) or continued volunteer commitment (Omoto and Snyder 1995). Within higher education, volunteer service has been used as an indication of positive ethical behavior itself (Astin and Antonio 2000; Finelli et al. 2012). In a meta-analysis of moral education and moral judgment (Schlaefli et al. 1985), volunteer service was only mentioned once and in connection to a service-learning class. Vegelgesang and Astin's (2000) study in higher education considered the influence of volunteer service on non-moral values, beliefs, academic skills, and leadership. Scholars have also addressed ethics courses, general education courses, social diversity courses, and outdoor programs on moral reasoning (King and Mayhew 2002). Volunteerism is one area that has been empirically explored in values research (Omotto and Snyder 1995; Hitlin 2004), although not with explicitly moral outcomes.

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A Model of Student Change in Higher Education

One model that considers the moral growth of students in higher education, proposed by Terenzini and Reason (2005), has been called the "definitive source of the impact of college on student outcomes" (Kuh et al. 2006:75). This model includes organizational elements as antecedents of student outcomes, such as institutional selectivity and size, residential character, student-faculty ratio, endowment, diversity, and academic progress information systems (Kuh et al. 2006). Examples of student outcomes include student attrition, student learning, and student persistence (Kuh et al. 2006). Although higher education research generally focuses on student persistence and learning, moral growth is included in some models in the higher education literature, including the model by Terenzini and Reason (2005). Their model is a concrete model for administrators and those who want actionable concepts that make a difference in student outcomes. Terenzini and Reason's (2005) model excluded antecedents that have little or no effect on student outcomes or that are abstract and hard to implement (Berger 2000). The outcomes associated with the impact of the peer environment and other antecedents are included in this model. See Figure 1.

(Insert Figure 1)

In this model, value changes are a part of the "change" outcome of student involvement with higher education. Furthermore, "development" as defined in this model is meant explicitly to include moral growth and reasoning (Ro, Terenzini and Yin 2012). Terenzini and Reason (2005) assert that the peer environment is a valuable means of influence that is itself influenced by the university. For example, peers of those who had a service-learning experience had a greater desire to have a service-learning experience themselves (Johnson 2009:15).

The peer environment includes peer level influences such as a student's reference group. A reference group is "a group, collectivity, or person which the actor takes into account in some manner in the course of selecting a behavior from among a set of alternatives, or in making a judgment about a problematic issue. A reference group helps to orient the actor in a certain course, whether of action or attitude" (Williams 1972:110). A reference group is any group that influences an individual's choices or self-reflections. Terenzini and Reason refer to the importance of the peer reference group, but state that an "explication of the underlying mechanisms by which the peer environment's influence exerts itself is beyond the scope of [their] paper" (2005:11). Because reference group influence on students may be substantial and lasting, in the following section I discuss research explaining the processes and mechanisms related to peer reference group influences.

Interactionist Theory and the Impact of the Peer Group on Values

Interactionist theory explains fundamentally how the reference group functions in order to influence students. In Krahe's (1992) review of interactionism, he states that contemporary interactionist theory hinges on four main postulates (Magnusson and Endler 1977), which are often operationalized and understood differently. However the most commonly shared core of the theory includes the following:

1. Actual behavior is a function of a continuous process of multidirectional interaction or feedback between the individual and the situations he or she encounters.

2. The individual is an intentional, active agent in this interaction process.

3. On the person side of the interaction, cognitive and motivational factors are essential determinants of behavior.

4. On the situation side, the psychological meaning of situations for the individual is the important determining factor. (Krahe 1992:70)

According to interactionist theory, through ongoing two-way interactions with others we create our own interpretation or understanding of those interactions and are influenced by that interpretation (Krahe 1992). This influence is cyclical. For example, an individual may interact with others, interpret those interactions, and then interact with those same others again, interpreting those interactions as well. An example of a group that exhibits this kind of influence on an individual is a reference group.

The peer group is a substantial reference group for students in higher education. University students gravitate towards the values and beliefs of their peer group (Astin and Panos 1969). At a university, students are desocialized from old attitudes, values, and behaviors and socialized into new ones (Feldman and Newcomb 1969). Students in higher education separate from prior reference groups, enter a period of transition where they interact with new reference groups, and incorporate the normative values and behaviors of their new peer reference group (Tinto 1993). Tinto's model and use of the interactionist perspective to predict student attrition has reached near-paradigmatic status (Braxton, Sullivan, and Johnson 1997:108) and illustrates the importance of reference groups in understanding student outcomes in higher education. The impact of a peer reference group is not only substantial but also long-lasting.

Changes in individuals that are attributed to reference group influence are likely to persist over time (Newcomb 1952; Alwin 1991), do not require actual membership within a group (Siegel and Siegel 1957; Singer 1981), and often occur as a result of identification with the reference group, but not vice-versa (Guimond 1997). Individuals may begin to socialize themselves to a reference group prior to actually joining the group (Hyman and Singer 1968),

which is called anticipatory socialization. The cohesiveness of the group influences the power it has over the individual (Schachter 1951; Forsyth 1990). However, some findings suggest that reference group influence can exist in higher education even in less cohesive groups (Guimond 1997). This is likely, given that a student only needs a perception of a group to be influenced by the group and not actual group membership. Group influence through micro-social processes like the enforcement of social norms is different from the macro-social processes that support reference group influence (Antonio 2004). The peer reference group is a school-level phenomenon (Antonio 2004) and is theoretically distinct from influence of direct interpersonal interactions.

Macro-social reference group influence will likely be manifested in changes in student values (Kelley 1947) that may also shape behavior (Feather 1995). Schwartz (1994:21) defines values as "desirable trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity." Values are enduring beliefs (Rokeach 1973), are expressed based on underlying attitudes (Katz 1960), pertain to a desirable end state or behavior, transcend specific situations, guide selection or evaluation of behavior and events, and are ordered by relative importance (Schwartz and Bilsky 1987; Schwartz 1992). While values do not directly cause behavior, they are enacted when actors are aware that there is value conflict (Schwartz 1994) and do play a motivational role in shaping behaviors (Feather 1995). Values "express basic human needs (Rokeach 1973; Schwartz 1992), and these needs, by definition, motivate social behavior" (Hitlin and Piliavin 2004:380). Empirical evidence indicates that by changing values, behavior will change (Rokeach 1973; Ball-Rokeach et al. 1984; Bardi and Schwartz 2003). Cognitive and affective components, which are more central, are more resistant to change (Rokeach 1968:117; Alwin 1991). However, if a more central

cognitive component is changed the influence on the individual is considerably more significant (Alwin 1991). While the peer group may influence student values (Terenzini and Reason 2005) a student's age is not a factor that is likely to alter the power of the peer group to do so.

Within higher education it is not necessarily the age of students that results in changes in a student's values. Past theory has posited the primacy of peer influence on teenagers associated with the developmental stage related to their age. Recent findings cast doubt on the complete primacy of age and indicate that the relative strength of the peer group may also explain peer influence on teenagers. Steinberg and Monahan (2007) found that resistance to peer group increases linearly from ages 10 through 18 and that there is little change in resistance to peer group influence between ages 18 and 30. Steinberg and Monahan (2007) conclude that previous findings that showed an increased impact of the peer group from ages 14 through 18 may be due to the strength of the peer group, and not because individuals are becoming less independent from their peer group. By the time the average student reaches college at age 18 they are not significantly more susceptible to peer group influence than older adults (Steinberg and Monahan 2007). Regardless of age, students are likely to be influenced in a university setting because of the power of their peer reference group.

Reference groups influence individuals whether young or old. When interacting with their parents, children as young as 6 months old have demonstrated social referencing behavior (Walden and Baxter 1989), which is the ability to read and imitate social behavior, and is a precursor to adopting the behaviors of a reference group (Feinman 1982). In a 10-year longitudinal study of persons 70 and older, reference groups were found to influence how individuals defined their age status (Bultena and Powers 1978). It is not necessarily the age of the student, but the significance of the peer group in their life that determines the power of peer

reference group influence. Research shows that "older people may be equally open to change but less likely than young adults to encounter change inducing events (Tyler and Schuller, 1991; Guimond, 1995)" (Guimond 1997:238). It is the desire to identify with the peer group and not their age that should significantly alter the ability of the peer reference group to influence the average university student.

Students who want to identify with peers will likely be influenced more than students who do not want to identify with their peers. The power of this kind of reference group is grounded in the actual or desired identification between an individual and the group (French and Raven 1959). Regarding a reference group, identification means the desire to take upon oneself the characteristics of a group and share a feeling of oneness with them (French and Raven 1959). When a student wants to identify with the peer group, that peer group becomes their normative reference group. A normative reference group is a group to which "individuals are motivated to gain or maintain acceptance" (Dawson and Chatman 2001:12). A normative reference group exerts a stronger influence than a comparative reference group. A comparative reference group is a group that an individual does not identify with, or does not want to identify with, that is used to make evaluative judgments of oneself (Kelley 1952). A comparative reference group still influences an individual, but not to the same degree as a normative group.

The Link Between Values and the Goals of Ethical Growth in Higher Education

Values that motivate an individual to consider the well being of others are known as self-transcendent values (Schwartz 1992). According to Shalom Schwartz, self-transcendent values are represented in two overarching categories: *universalism* and *benevolence. Universalism* considers the welfare of others, specifically others who may not be a part of an individual's in-group (Schwartz 1992). Universalism is a value that builds "understanding, appreciation,

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tolerances, and protection for the welfare of all people and for nature" (Schwartz 1994:22). *Benevolence* is defined as, "preservation and enhancement of the welfare of people with whom one is in frequent personal contact" (Bardi and Schwartz 2003:1208). Benevolence motivates individual to benefit others to whom individuals have strong ties.

Prior research laid a foundation for defining self-transcendent values as moral values. Schwartz (2007) argued for the morality of self-transcendent values with evidence from survey data that addressed the relationship between self-transcendent values and moral values. Furthermore, a link between values and morality has been argued based on the moral ideals learned through socialization into a society's social norms or on the change in values that occurs during progressive stages of moral development (Feather 1988; Joyner and Payne 2002). However, efforts have not been successful in showing that the relationship of values to morality is based on the connection between values and moral reasoning. Empirical analysis that has attempted to link values with moral reasoning has found few or weak correlations (Simmons 1982; Wilson 1983; Weber 1993; Ostini and Ellerman 1997). However, a study by Agle, Mitchell, and Sonnenfeld (1999) operationalized values using an instrument with an ethics component. This study found that moral reasoning accounts for only a small part of what leads to moral action, suggesting that values may indeed lead to moral action, but not primarily through the construct of moral reasoning.

While there are many ways to connect self-transcendent values with morality, their connection with specific goals of character development in higher education has not been explicated. In the following I define a range of salient goals of ethics education. I then connect the parts of self-transcendent values, universalism, and benevolence with some of these goals. In

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this way I attempt to show how self-transcendent values motivate students to meet the goals of an ethics education.

The following table is a synthesis of the goals of an ethics education found in higher education literature with a focus on business organization literature. Since most college graduates will likely work in a business or organization, many of the objectives are directly relevant to their future work situations. The objectives of ethics education listed were adapted from Rossouw (2002), Armstrong, Ketz, and Owsen (2003), and coded statements of scholars about the intent of ethics education (Garff and Agle work in progress).

(Insert Table 1)

Regarding the latter source, Garff and Agle coded statements of the intents of an ethics education mentioned by academics and educators that are not currently formally defined. Coding followed the guidance of Weiss (1995). These possible outcomes of ethics education lay the groundwork for connecting the value of universalism to specific aims of ethics education. See Figure 2.

(Insert Figure 2)

As tolerance is one of the underlying values universalism is based on, an increase in universalism should help meet the goal of enhancing moral tolerance. Universalism also encompasses a concern for others, which would influence moral sensitivity, a concern for certain others (i.e., stakeholders). Values create enduring motivation for behavior, so by increasing a value such as universalism, moral motivation should also increase. Values motivate and form behaviors, so by increasing universalism I would expect that a student would also gain more moral action experience. Benevolence also relates to desirable outcomes of an ethics education. See Figure 3.

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(Insert Figure 3)

As defined by Schwartz, benevolence is the "preservation and enhancement of the welfare of people with whom one is in frequent personal contact (helpful, loyal, forgiving, honest, responsible, true friendship, mature love)" (Schwartz 1992:11) and promotes the flourishing of groups. Benevolence promotes values such as loyalty, responsibility, and being helpful that should strengthen a leader's resolve to be aware of their responsibility and provide support. Thus, an increase in benevolence should also help to increase moral leadership. Benevolence helps create and maintain stronger ties with others through honesty, mature love, and true friendship. Strong ties help to facilitate change in others (Krackhardt 1992). Thus, stronger ties with others should coincide with an increase in moral persuasion ability, which is the ability to influence others to live according to some minimal moral expectations. Since values create enduring motivation for behavior, increasing a value such as benevolence should lead to an increase in moral motivation. I would also expect an increase in benevolence to increase moral action as an increase in benevolence would help motivate and form moral behavior.

Self-transcendent values help students to meet the ethical objectives of higher education. However, the self-transcendent values of universalism and benevolence may do more than meet these goals of predetermined moral standards. Increasing self-transcendent values may also help students to engage in an ongoing moral process and thereby fulfill their moral responsibility towards others.

How Values Help to Meet a Student's Moral Responsibility

Scholars have often justified the link between values and morality on the ability of values to motivate individuals to achieve a predetermined or predefined standard of morality. For

example, the question, "what is moral?" has been answered by scholars as whatever those in a society claim promotes the well being of others (Schwartz 2007). Rokeach equated honesty with morality (1973), making the connection between values and morals axiomatic. However, defining a value as moral because it is self-evident, i.e., what is best for society or has consensus for promoting well being, has limitations. For example, in the Holocaust German leaders considered what was good for society and for the wellbeing of humanity to be mass genocide (Bauman 2013). In order to help ensure that how individuals act is moral, engaging in a continuing process of seeking to be moral may be more useful than only seeking to meet pre-defined criteria of what constitutes morality.

In addition to predefined standards of morality, understanding what motivates students to engage in a continuing process that leads to moral outcomes may be important. In this instance, rather than asking, "What is moral?" we might ask, "What is morally responsible?" French philosopher Emmanuel Levinas looked at morality as a continuing process and not deducible to what was best for society or what reached consensus about promoting wellbeing; he challenged a modernist perspective that societal institutions determine what is moral (Knapp 2000:195). According to Levinas, in order for persons to be morally responsible they must consider the needs of the other, use their limited knowledge to best serve the other, and revise their interactions when they gain new knowledge of what actually benefits the other, continuing to seek to benefit the other while never fully knowing or being contented that the other has been served (Knapp 2000). Being morally responsible means being conscious of our actions and their effects, earnestly seeking to benefit another, and going beyond what society defines as moral. In short, moral responsibility is about living a moral process. Values have the potential to motivate individuals to live such a process. Figure 4 illustrates major parts of the process of meeting moral

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responsibility, although is not a complete review of Levinas's theories of moral responsibility. An individual might pass through these stages in a different order than is shown below.

(Insert Figure 4)

Following the ideas of Levinas, uncertainty about and discontentment with whether our actions really meet another's needs (e.g., life, love, protection) drive us to seek knowledge and awareness of what and how to meet the needs of another. Once we feel that we understand what we can do to help meet another's needs we are driven by our discontentment to take action, to do something. Uncertainty about the actual outcomes of this action leads us to reflect on that action. Have we met the needs of the other? Uncertainty about and discontentment with whether another has their needs met motivates us continue the process. We gain new insight into how to serve another, take new action to meet the other's needs, and reflect on the outcomes of that new action. By this process individuals should meet their moral responsibility to others. However, in order for this process to work we must not dehumanize another; we must always consider the needs of another viable.

It is not the outcomes of values (e.g., care, compassion) that may be linked with moral responsibility, but rather how self-transcendent values motivate individuals to engage in a moral process. Self-transcendent values should motivate individuals to engage in a moral process because self-transcendent values, by definition, are cognitive goals that motivate an individual to engage in behavior that directly or indirectly benefits the other (Schwartz 2007). In this way values may help students to meet their moral responsibility to others. Since values are cognitive goals (Schwartz 1994), the means necessary to reach those goals is malleable, meaning that values may motivate individuals to revise their interactions to benefit others in situations where their behavior is not beneficial. By motivating individuals to revise their behavior, values

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motivate individuals in a way that helps them to meet their moral responsibility towards others. It seems implicit that the discontentment needed to drive the process of moral responsibility forward will arise in students as a natural outcome of having a cognitive goal that is unmet.

One possible weakness of values for motivating students to meet their moral responsibility is the influence of values on awareness and knowledge. Values, as cognitive priorities, probably do not inherently make an individual more knowledgeable or aware of the outcomes of their actions to meet another's needs. However, seeking awareness and knowledge is necessary to take new actions to meet another's needs (Knapp 2000). Inasmuch as students do gain awareness and knowledge of the outcomes of their behavior, it is likely that unbeneficial action will change to meet the overarching cognitive goal to meet the other's needs.

Another weakness of values in meeting moral responsibility is related to cultural context: people may extend the providence of other-regarding behavior more or less to others depending on cultural norms (Schwartz 2007). However, within more democratic countries, such as the US, other-regarding behavior is extended more liberally (Schwartz 2007). Thus, for the purposes of this thesis, and within the context of similar societies, on average self-transcendent values will likely be extended more liberally to others (Schwartz 2007), and not only to members of a societal in-group. This does not mean that racial groups or those of lower social status aren't marginalized in a society. It means that there will be some in a society that feel that marginalizing those groups is wrong. For example, if no one in the US felt that racism was wrong, then self-transcendent values would not be a useful measure of morality. If however, some feel that it is wrong, then it can be said that different races have not been dehumanized to the point where they are totally excluded from moral behavior.

How to Influence Values in Higher Education

There is ample evidence that the peer group has a direct impact on student outcomes. Prior research has shown that peer groups do have significant impact on student values and that "interaction with peers will influence moral development" (Ho 2006:84). Peers have been found to influence humanistic values and community attitudes (Berger 2000), attention to social issues and participation in community action programs (Gurin et al. 2002), racial-ethnic attitudes (Sax 2004), and academic dishonesty (McCabe and Trevino 1993, 1997; McCabe, Trevino and Butterfield 1999). Interaction with the peer group through extracurricular activities (Finger, Borduin, and Baumstark 1992) has been found to influence students. College sports team involvement (Bredemeir and Shields 1986) has been found to influence students' moral reasoning.

In summary, as a reference group, the peer group is probably more influential than other reference groups at other times in students' lives. The peer group affects students' lives through their continued interaction in many settings. Students may find themselves interacting with their peer group in social, educational, work, and residential settings. The degree of pervasiveness of peer group interactions may enhance the degree of influence of the peer group as a reference group.

Terenzini and Reason (2005) theorized that the peer environment moderates the effects of student involvement in an organization's academic programs and/or co-curricular activities and student learning and development outcomes. More specifically, "individual student experiences" is one element of the peer environment that the authors suggest is affected by elements of the organizational context. Figure 5 shows elements of Terenzini and Reason's (2005) comprehensive model of influences on student learning and persistence.

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(Insert Figure 5)

Applying Terenzini and Reason's (2005) model to academic and other programs of interest to this study, university-based international experiences, volunteer service, and service-learning may produce a change in student values. The peer reference group moderates these relationships. In Terenzini and Reason's (2005) model, a service-learning class and study abroad or other university-based international experience would be included in academic and co-curricular experiences. Volunteer service is defined as an out-of-class experience unless it was required which would then be considered part of the academic and co-curricular programs. Whether an out-of-class-experience or part of an academic program, these experiences all culminate in the individual student's experience. Individual experiences may influence certain learning and development outcomes, including a change in values.

Prior research also has shown that the organizational context and out-of-class experiences influence student outcomes. In their 2012 study, Ro, Terenzini and Yin (2012) examine internal organizational characteristics, including faculty culture, pedagogical practices, curricular emphasis, and professional skill emphasis. They conclude that these parts of the organizational context directly influence student outcomes over and above student and other university characteristics. Other elements of the organizational context, such as non-professional clubs (e.g., women or minority clubs), humanitarian engineering projects (e.g., Engineers Without Borders), and volunteer service, have been shown to have a positive and statistically significant influence (Palmer 2011). In Palmer's (2011) study these parts of the organizational context influenced engineering students' ability to anticipate and understand the wider ramifications of their work. Compartmentalization and not understanding the wider ramifications of engineering work may lead to unethical outcomes (Haws 2001).

STATEMENT OF THE PROBLEM AND HYPOTHESIS

In this study I test the relationships between student participation in university-based international experience, university-based volunteer service, university-based service-learning, and a change in self-transcendent values. I also test the moderating influence of the peer reference group between these associations (Figure 6). In this thesis I argue that an increase in self-transcendent values helps students to meet their moral responsibility towards others and to meet the goals of an ethics education. However, I do not empirically test these latter assertions. Unlike prior studies which determine a student's progression through different stages of moral thinking, this thesis uses a value based measure of moral growth to determine the relative priority of moral values over other values. In doing so, this thesis does not attempt to measure moral action, but rather addresses what causes the student to gain enduring motivation to act morally (i.e., self-transcendent values).

(Insert Figure 6)

The hypotheses for this study include the following:

Hypothesis 1: A student's involvement in university-based international experience is positively related to an increase in self-transcendent values.

Hypothesis 2: The peer reference group moderates the relationship between a student's involvement in university-based international experience and an increase in self-transcendent values

Hypothesis 3: A student's involvement in university-based volunteer service is positively related to an increase in self-transcendent values

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Hypothesis 4: The peer reference group moderates the relationship between a student's involvement in university-based volunteer service and an increase in self-transcendent values

Hypothesis 5: Involvement in service-learning is positively related to an increase in self-transcendent values.

Hypothesis 6: The peer group moderates the relationship between a student's involvement in service-learning and an increase in self-transcendent values

METHODS

Study Sample

Data were collected from students at a school of engineering in the Western United States. Students were sent emails with links to an online Qualtrics survey and offered the opportunity to enter into a drawing for a $30 Amazon.com gift card following completion of the survey. An email with a survey link was sent to approximately 1,864 engineering students. One to two follow-up emails were sent to encourage participation in the survey (depending on department) and to increase department response rates. As department-maintained email lists were used, some emails may have been sent to inactive email accounts, meaning that the actual response rate may have been slightly higher. In total, 633 surveys were completed representing at least a 34% response rate for this study.

In the region in which these surveys were administered there is a large proportion of members of The Church of Jesus Christ of Latter-day Saints (i.e., LDS), or informally, "Mormons." LDS members are debatably similar to other protestant churches on many dimensions of religiosity. (Erickson, Call, and Brown 2012). In the student population for this study there may be a higher percentage of individuals with international experience than in

comparable institutions of higher education as LDS students often delay education to participate in an 18 or 24 month proselyting experience, which may take place outside the U.S. These experiences may create a problem with self-selection for this study. In order to help reduce the likelihood of self-selection the sample includes engineering students, a group that has been shown to be somewhat less likely to have other-regarding values.

The challenge for engineering students to remain other-regarding is significant due to the often compartmentalized and technical focus of their work. Engineering students have been found to be more willing to cheat than students in other majors (Carpenter et al. 2006; Harding et al. 2006) and may have lower empathy than other majors (Eshbaugh et al. 2010). Engineering students may be trained to focus on small aspects of one problem which may lead them "to become oblivious to the wider ramifications of their work" (Haw 2001:223) including the moral dimensions of their work.

In addition to the constraints of the study sample, the particular university context for this study may constrain generalizability. The university from which students were surveyed has a strong tradition of encouraging service involvement. Thus, the norms and context would likely influence greater participation in service than may exist at some other universities

Measures

Data collection utilizes a survey questionnaire that includes questions about student involvement in different university-related international experiences, volunteer service, and service-learning. These university experiences constitute the independent variables. Questions are asked about the student's peer reference group for the moderator variables. The index created from reference group questions includes social network questions, social comparison questions, and questions about their desire to affiliate with the peer group. Control variables come from

questions that include basic demographic information such as age, race, gender, and marital status. Questions are asked that assess the student's self-transcendent values of universalism and benevolence from Schwartz (2012). The two self-transcendent items from Schwartz's (2012) survey on values in contrast with self-enhancement values will be used as a proxy measure for moral growth. (See the survey questionnaire in Appendix A.) I use ordinary least squares regression (OLS) analysis to examine the relationships between variables. Figure 7 shows the relationships I tested in this study.

(Insert Figure 7)

Dependent Variable

Schwartz (2012) used factors of self-transcendent values to form a moral inclusiveness scale (Schwartz 2007), which determined who is included or not included in an individual's self-transcendent values. Similarly, I use self-transcendent values to form a moral scale. It should be noted that universalism, a part of self-transcendent values, is more or less inclusive of out-group members depending on how inclusive a society is of racial, religious, or other differences (Schwartz 2007). The US scores high in moral inclusiveness (Schwartz 2007). This means that in the US, those with a high level of universalism extend those values more liberally to others (Schwartz 2007).

By using the entire range of self-transcendent values I hope to get a broad understanding of moral growth. An increase in self-transcendent values should indicate an increase of many values that relate to other-regarding behavior. The value framework proposed by Schwartz (1992, 1994, 2012) was designed to be a comprehensive set of values "encompassing virtually all the types of values to which individual attribute at least moderate importance as criteria of evaluation" (1992:59). Shalom Schwartz included the most salient self-transcendent factors in his instrument. However, his list of measured variables does not include all potential self-

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transcendent values (Schwartz 1992). The five factors that constitute the self-transcendent values measured in this study represent the most salient and distinct values used by Schwartz (2012) to measure self-transcendence. The following is a list of motivational goals from Schwartz (2012) that comprise the measured factors of self-transcendent values:

1. Being a reliable member of the in-group

2. Being a trustworthy member of the in-group

3. Devotion to the welfare of in-group members

4. Commitment to equality

5. Commitment to justice

6. Commitment to protection for all people

7. Preservation of the natural environment

8. Acceptance of those who are different from oneself

9. Understanding for those who are different than oneself

As a value represents a relative priority, having an absolute value of self-transcendence is not as meaningful as comparing it against other values. Data from forty samples collected in twenty countries show that self-enhancement values are those values that are directly opposed to self-transcendent values (Schwartz 1992). Self-transcendent values and self-enhancement values compete with each other within an individual's cognitive framework. Self-enhancement values oppose the "acceptance of others as equals and concern for their welfare" in lieu of "emphasizing the pursuit of one's own relative success and dominance over others" (Schwartz 1994:25). Self-enhancement values motivate individuals to benefit themselves even to the detriment of others. (Schwartz 1992).

In contrast to self-transcendent values are self-enhancement values. The following is a list of motivational goals from Schwartz (2012) that comprise the measured factors of self-enhancement values:

1. Success according to social standards

2. Power through exercising control over other people

3. Power through control of material resources

4. Power through control of social resources

In order to gauge the relative strength of self-transcendence I compared an individual's self-transcendent values to their self-enhancement values. To do so I subtracted self-enhancement values from self-transcendent values, which indicates the spread between self-transcendence and self-enhancement. This served to indicate the strength of the individual's relative priority of self-transcendent values over their self-enhancement values (or possibly the reverse). (See Schwartz et al. 2012 for a review of issues of value measurement in Schwartz.) By using the portion of this comprehensive value set that is associated with other-regarding values and those values that directly oppose other-regarding values, this study may give a better sense of change in moral character than by directly testing for a few other-regarding values (Omotto and Snyder 1995) or behavior.

In this thesis I use a relative ranking (i.e., subtracting self-enhancement from self-transcendence) to measure self-transcendent values. However, it is important to recognize the debate concerning the use of rankings versus absolute ratings (Agle and Caldwell 1999). There are valid theoretical and methodological reasons to use ratings instead of rankings when measuring values (Agle and Caldwell 1999). For these analyses in this thesis I follow Schwartz's method in using a rating to determine values (Schwartz et al. 2012).

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The latent variables of self-transcendent and self-enhancement values are operationalized by a multi-item scale. Two versions of the survey are administered; the selection of the correct instrument is based on the respondent's gender. The instruments only differ in the pronouns used in the survey. Respondents are asked to indicate "how much that person is or is not like you." Statements include "It is important to him that the weak and vulnerable in society be protected" or, "It is important to her to protect the natural environment from destruction of pollution." There are fifteen items related to self-transcendent values and nine items for self-enhancement values. The six-point Likert scale associated with each statement used the following: 1 = not like me at all, 2 = not like me, 3 = a little like me, 4 = moderately like me, 5 = like me, 6 = very much like me. Appendix A includes all the questions used to measure self-enhancement and self-transcendent values in the survey.

In summary, the dependent variable is the result of subtracting the sum of self-enhancement values from self-transcendent values. The resulting score provides a way to analyze how much more or less the respondent values self-transcendent values over self-enhancement values. The final range of this variable is from 1 through 120, although I divide this range to include categories 1-6, like the Likert-scale for each question.

Independent Variables

The independent variables of service, service-learning, and university-based international experience are measured through various indicators. "Service-learning" is a variable measuring whether students are involved in service-learning or not. Students are asked the following: "Sometimes university classes are designed to include a significant element of service. For example, a class could include the opportunity to learn about under-served or underprivileged people and design something to address their needs, like designing a water filter for those in a

developing country. Another example might be a class on government that requires civic or community service. Have you taken a class designed to include a significant element of service?" Possible answers include the following: 1 = Yes, 0 = No.

"Service" is a variable that considers the frequency of university-related volunteer service involvement using two questions. Students are asked, "How often do you accept service opportunities offered on campus? Examples include a Red Cross blood donation on campus or participating in a food drive" with available answers including the following: 1 = never, 2 = a few times a year, 3 = once a semester, 4 = a few times a semester, 5 = once a month, 6 = 2-3 times a month, 7 = once a week, 8 = 2-4 times a week, 9 = almost daily, 10 = daily. Students are also asked, "How often do you perform service off-campus that you heard about through your involvement at your university? Examples include tutoring children at local schools or giving time to a non-profit organization" with available answers including the same response categories as the prior question. These two questions are combined into a single scale for purposes of analysis.

"International" is a variable operationalized with multiple statements. To determine if students have had any international experience they are asked, "Have you been outside the U.S?" with available answers including the following: 1 = Yes, 0 = No. Students who answered "No" are not asked further questions about their international experience. Students who answer "Yes" are asked, "What are the reasons you have been outside the U.S? Please select all that apply" with the following options for answers: 0 = Humanitarian service sponsored by your university, 1 = Humanitarian service not sponsored by your university, 2 = study abroad, 3 = other university program, 4 = military service, 5 = work, 6 = religious, 7 = vacation with family, 8 = vacation with friends, 9 = vacation alone, 10 = exchange student before college, 11 = visit family

abroad. A single binary variable was created from this question where 0 = No university-related international experience and 1 = Yes university-related international experience. If a student responded that they traveled because of a study abroad, humanitarian service sponsored by their university or another university program, then the variable "international" was coded as a 1. For the purposes of this study I am primarily interested in the student's experience related to higher education and not to experiences outside of higher education.

Reference Group Moderator Variable

> The concept of reference group is almost unique among the tools available to the social psychologist... It is a variable intimately associated with that central problem of social psychology: the relating of self to society. The hand-to-hand advancement of reference-group theory and of the research procedures which can make it possible would therefore seem to be one of social psychology's greatest needs (Newcomb 1951:92).

Since this statement was made much progress has been made in the effort to operationalize the concept of a reference group. This study builds on this progress by seeking to add to the literature on reference group theory by determining the degree to which the peer group is a reference group. Just as network ties may be strong or weak (Granovetter 1973; Lin 1999) the strength of reference group influence may vary as well. However, past studies have not addressed this possibility.

Reference group theory is based on the work of Charles Cooley (1902) who considered how individuals were influenced by what they perceived others thought of them and how important those 'others' were to the individual (Dawson and Chatman 2001). Reference group theory has been used to help explain different outcomes. For example, it has been used to explain the feelings on wage differences (Patchen 1961) and how to market products (Moschis 1976). Operationalized throughout studies in various streams of research, reference groups have been treated as pre-supposed categories or groups (Stern and Keller 1953; Melikian and Diab 1959).

Sometimes reference groups were operationalized as a dichotomous variable. That is, researchers have sought to discover if a group is a reference group or not (Hartley 1960, Korte and Sylvester 1982). Past studies have used interviews (Patchen 1961), short free answer surveys (Kuhn and McPartland 1954; McPhail and Tucker 1972) survey ranking questions (Stern and Keller 1953), and other surveys (Hartley 1960; Korte and Sylvester 1982). This study seeks to determine not only if the peer group is a reference group, but also the degree to which the peer group is a reference group. In this study the reference group is treated as a continuous variable. The following table shows what survey questions were used to operationalize the reference group moderator.

There are three different "peer group influence" variables: one to moderate the relationship between international experience and self-transcendent values, one to moderate the relationship between service-learning and self-transcendent values, and one to moderate the relationship between volunteer service and self-transcendent values. Each of these variables is based on a multi-dimensional index created by six questions. The first five questions of the index for each of the moderator variables is the same as the others. That is, the following five questions are a part of each index to create the moderator variables.

The second and fifth questions are adapted from Levin and Cross (2004), the third and fourth questions are adapted from Gibbons and Buunk (1999), and the first and last questions are informed by a study by Dawson and Chatman (2001). The first reference group question students are asked is, "How much do you want to gain or maintain the acceptance of your peers?" with possible answers including the following: 0 = Not at all, 1 = A little, 2 = Some, 3 = A lot, 4 = To a large extent. The second reference group question students are asked is "To what extent do you interact with your peers?" with possible answers including the same response categories as the

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first question. The third reference group question students are asked is "To what extent do you try to find out what your peers think?" with possible answers including the same response categories as the first question. The fourth reference group question students are asked is "To what extent do you compare how you do things with your peers?" with possible answers including the same response categories as the first question. The fifth reference group question students are asked is "How frequently do you spend your leisure time with members of your peer group?" with possible answers including the same response categories as the first question.

The final reference group question students are asked varies by what peer activity it moderates. For example, for volunteer service students are asked, "To what extent do you desire to share the greater peer group's attitude towards volunteer service?" with possible answers including the following: 0 = Not at all, 1 = A little, 2 = Some, 3 = A lot, 4 = To a large extent. The same question is asked regarding service-learning and international experience. Put together, these six questions constitute a scale that determines how strong of a reference group the peer group is for the respondent and thus how strong the moderator variable of "Reference Peer Influence" is. As these moderator variables are created using mostly the same scale they were not included all at once in a regression model but were analyzed one at a time in similar models.

Five essential elements guided my selection of questions for the reference group index. These included the possibility of a reference group to be a membership group, the comparison (whether desired or not) between the individual and their reference group, the respondent's desire for group acceptance, the respondent's professed perception of group values, and the respondent's desire to emulate group values. Each of these elements has its roots in reference group theory and was used to help create a continuous moderator variable for the analysis in this study.

Reference groups refer to both membership groups and non-membership groups (Merton and Kitt 1950). Prior studies have used network tie questions to help determine the strength of reference group membership for individuals (Abrams et al. 1990; Ellemers et al. 1997). This makes sense, as stronger ties with a group should increase the group's salience to an individual's thinking. In other words, the more frequent and intense interactions are with a group, the more the group is likely to influence the individual's thinking. However, reference group influence also depends on the degree to which an individual compares him or herself with a group and the degree to which an individual identifies with a group. In this study I also use two network-tie questions to help determine the strength of the influence of the peer reference group. The two network-tie questions are, "How frequently do you spend your leisure time with people in the following groups?" and "To what extent do you interact with people in each group?" (Levin and Cross 2004). Factor analysis was already performed on these questions (Levin and Cross 2004). These questions for the strength of a student's social network are adapted from research by Levin and Cross (2004). Tie strength was measured by using viable questions to assess both frequency and intensity of interaction (Marsden and Campbell 1984).

While reference group theory is similar to social network theory it has some differences. It is based on the principle that people take the standards of others as a basis for making self-appraisals, comparisons, and moving into various social realms (Hyman and Singer 1968:3). Reference group theory is distinct from social network theory in the power of the group to influence individuals prior to group membership through anticipatory socialization (Merton and Kitt 1950; Elias 2006), and after the group may no longer be in close or frequent contact with the individual. Thus, the ability of the group to influence the individual with *or without* actual dyadic relationships is important. Furthermore, reference group theory implicitly takes into account the

disconnect that may exist between the beliefs of a group and perceived beliefs of a group. Each student within a university does not likely have a perfect sample of the peer group's beliefs and would thus vary in their individual opinion of group values. This is especially likely when an individual is forming beliefs about a large peer group. Reference group theory focuses on what the student thinks the group's values, beliefs, and attitudes are and how *that perception* then influences the student.

Social network questions do not capture the full meaning of reference group influence. In addition to interaction with a group, individuals must compare themselves to the group. Furthermore, it is not only important to test if an individual can make a comparison with a group, but also how much they compare themselves with a group. Cooley (1902:186) remarked that it is the "weight of the other" that influences us. It is more than having a perception of the other, but also the weight or strength of the comparison between self and other. Two questions in this survey were used to consider the degree to which individuals compare themselves with the peer reference group. The questions were, "To what extent do you compare how you do things with your peers?" and "To what extent do you try to find out what your peers think?" These questions were adapted from the literature on social comparisons (Gibbons and Buunk 1999). Factor analysis was performed by Gibbons and Buunk (1999). The analysis indicated a 0.67 factor loading for the prior and 0.30 factor loading for the latter question. Both questions include the following possible answers: 0 = Not at all, 1 = A little, 2 = Some, 3 = A lot, 4 = To a large extent.

In summary, the prerequisite of reference group influence is having some perception of the group. The degree of desire to adopt group values, strength of network ties, degree of desire to affiliate with peers, and the degree of comparison to the peer group are combined to create a

reference group scale. This scale is a continuous variable that constitutes the reference group variables in this study.

Control Variables

Control variables include basic demographic characteristics. "Married" is a dichotomous variable where 0 = not married and 1 = married. "Female" is a dichotomous variable where 0 = male and 1 = female. "Age" is a binary variable where 0 = under 24 years old and 1 = 24 and over. "Caucasian" is also a binary variable with 0 = not Caucasian and 1 = Caucasian.

Estimation Procedures

After examining a model with only control variables, each hypothesized independent variable is added one at a time to highlight the effects of each new variable. Similarly, each moderating variable is added one at a time. However, only one moderating variable was included in each model. This was necessary due to the high degree of correlation among the different moderator variables. For each step of my analysis, I include binary variables that help control for influential observations. A few observations (about ten) are dropped prior to analysis. These were cases where responses appear invalid as respondents answered all 24 questions for the dependent variable exactly the same.

Descriptive Statistics

Descriptive statistics for the dependent and independent variables are in Table 2, which presents the means, standard deviations, and reliability coefficients (using Cronbach's alpha) for these variables. The measure for university-related volunteer service has a lower reliability (0.55) than 0.7. These descriptive statistics show the less demographically diverse nature of the study sample.

(Insert Table 2)

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As Table 2 shows, 89 percent of the students are Caucasian, and 15 are percent female; 41 percent are over 23 years old, and 40 percent are married. Students in the sample engaged in university-related volunteer service on average 2-4 times a semester and had an average set of self-transcendent values of 3.95 on a six-point scale (1-6). Thirty-nine percent had taken a service-learning class, and 18 percent had had a university-related international experience.

Volunteer service may not have a high reliability coefficient because it is a two-item scale. However, when both items were included separately in the same regression model they showed an almost identical positive coefficient and were statistically significant. While a reliability coefficient of 0.55 is low, it may be considered acceptable in a new research context (Nunnally and Bernstein 1967) or in a two-item scale (Anderson and Coughlan 1987).

RESULTS

The following section includes analysis of descriptive statistics and multivariate regression. Both descriptive statistics and regression analysis provide support for Hypothesis 3 that university-related volunteer service is positively associated with self-transcendent values. Other hypotheses tested are not statistically significant.

Distributions on Key Variables

I calculated cross-tabulations for key variables to get a sense of the distribution of the dependent variable across the different independent variables. Table 3 and Table 4 show these distributions. For each table, self-transcendent values are divided into low, moderate, and high based on the percentile ranking of self-transcendent value scores in the sample. Scores approximately from the first through 33rd percentile are in the category "Low." These include scores from 1.85 through 3.125 on a 6-point scale. Scores approximately above the 33rd percentile but below the 66th percentile are in the category "Moderate." These include scores

from 3.126 through 3.5. Scores above the 66th percentile are in the category "High." These include scores from 3.51 through 4.5 on a six-item scale. Scores were not exactly divided into three equal categories because often times many students had the same score. This same process was used to divide scores for student involvement in volunteer service after taking out students with no volunteer service. Thus low, moderate, and high represent relative ranking within the sample, not including students who give no volunteer service.

(Insert Table 3 and Table 4)

Table 3 is an assessment of the dependent variable, split into low, moderate, and high, across the independent variables. The results in Table 3 lend preliminary support for Hypothesis 3 that university-related volunteer service is positively associated with character development. The results in Table 3 show that higher levels of self-transcendent values are associated with higher levels of university-related volunteer service involvement. For example, forty percent of students who engage in a high level of volunteer service also have a high level of self-transcendent values. Only 31 percent of students who engage in moderate or low volunteer service have a high level of self-transcendent values. Furthermore, students who engage in low to moderate levels of volunteer service show an increase in self-transcendent values over students who engage in no volunteer service. While 31 percent of students who engage in moderate or low levels of volunteer service have high self-transcendent values, only 24 percent of students who engage in no volunteer service have a high level of self-transcendent values. On the opposite end of the spectrum, 46 percent of students who give no volunteer service have low self-transcendent values while 31 percent of low and moderate levels of volunteer service have low self-transcendent values. Only 29 percent of those who engage in a high level of volunteer service have low self-transcendent values.

The results in Table 3 show modest differences between those who take a service-learning class (Hypothesis 5) or who have university-related international experience (Hypothesis 1) and self-transcendent values. These differences are not statistically significant. 33 percent of students who haven't had a service-learning class have a high level of self-transcendent values while 34 percent of students who took a service-learning class have a high level of self-transcendent values. Similarly, 33 percent of students with no university-related international experience have a high level of self-transcendent values. 34 percent of students with no university-related international experience have a high level of self-transcendent values. The results in Table 4 show similarly small differences between gender, race, and age.

Table 4 presents results that indicate that gender, race, and age show a modest difference in self-transcendent values. These differences are not statistically significant. In Table 4 the dependent variable of self-transcendent values is split into low, moderate, and high, across the various control variables. Table 4 shows that 34 percent of women have high self-transcendent values while 33 percent of men have high self-transcendent values. Thirty-three percent of students under 24 years of age have high self-transcendent values. Thirty-five percent of students 24 years old and older have a high level of self-transcendent values. Race had the most dramatic effect, although this finding is not statistically significant and is thus not generalizable. Within the sample 34 percent of Caucasian students had a high level of self-transcendent values while 29 percent of non-Caucasian students had a high level of self-transcendent values.

Results in Table 5 give preliminary support for Hypothesis 3 that volunteer service has a positive influence on character development. There is a positive correlation between self-transcendent values and volunteer service. This relationship is statistically significant.

As Table 5 shows, none of the variables are strongly correlated. Table 5 presents correlations and statistical significance between all variables except moderator variables. There are no correlations between variables above 0.5, which minimizes concerns about multicollinearity. The variables of age, gender, married, and Caucasian are control variables,

(Insert Table 5)

Regression Analysis

Table 6 presents the results of models that regress self-transcendent values on the independent variables. Starting with the first model, independent variables are added into the regression equation to highlight the effects of each variable. The first model examines the effects of the control variables age, gender, race, marital status, and influential observations. Models 2 through 4 add measures of student involvement in volunteer service (H3), service-learning (H5), and international experience (H1), all related with university involvement. As model 4 shows, only volunteer service and the controls for influential observations are statistically significant.

(Insert Table 6)

When university-related volunteer service is added (model 2) the results indicate a positive relationship. This provides additional support for Hypothesis 3 that student involvement in volunteer service may produce an increase in self-transcendent values. I specified model 2 without volunteer service logged, and it did show a positive and statistically significant relationship with a coefficient of 0.03. This coefficient remained the same when specifying models 3-4 with the non-logged service variable.

When the service-learning (model 3) and university-related international experience variables (model 4) are added, they have a positive but non-significant relationship with self-transcendent values. Other variables may be influencing this relationship. Post-hoc analysis gives

some evidence for certain types of international experience to increase self-transcendent values. The section on "Unexpected Findings" has details of post-hoc analysis.

Table 7 presents the results of models that regress self-transcendent values on the independent variables with the peer group moderators included (Hypothesis 2, 4, and 6). The results show that the peer group is not a statistically significant moderator of the relationship between involvement in university activities and self-transcendent values (models 5-7). From this analysis I cannot provide any evidence that the peer group moderates the relationship between university-based volunteer service (H4), service-learning (H6), international experience (H2), and self-transcendent values.

<center>(Insert Table 7)</center>

In order to see if the different factors of the multi-dimensional peer group moderator did have moderating influence, I analyzed them separately in regression models. It seemed likely that perhaps one factor might moderate the relationship between student activities and self-transcendent values. All factors analyzed were not statistically significant moderators of the relationship between university activities and self-transcendent values. These factors included the strength of social network ties with the peer group, the strength of social comparison with the peer group, and the strength of identification with the peer group. The lack of any of these factors to moderate the hypothesized relationships (Terenzini and Reason 2012) lends evidence for the need to reorganize the theoretical model to consider how the peer group influences students.

Both binary variables that were created to help account for leveraged observations, CooksD and Dfits, are statistically significant across all models (models 1-7). This indicates that there are observations that are highly leveraged that are influencing the regression model,

although the inclusion of these binary variables helps to mitigate the influence of highly leveraged observations. After looking at the data it appears that one theme that emerges for leveraged observations is that some students who report abnormally high levels of volunteer service also report high levels of desire for achievement (i.e., desire for ambition, success, and recognition) and low levels of concern for nature.

DISCUSSION

Considering my findings in relation to the theoretical model proposed by Terenzini and Reason (2005), I found support for their assertion that an out-of-classroom experience can influence a student's values. Specifically, my analysis indicates that on average, increasing involvement in university-related volunteer experience is associated with an increase in self-transcendent values and thus moral growth. If a university aims to encourage moral growth this finding provides support for administrative action to encourage volunteer service both on and off-campus. In a broader sense, this finding also offers more support to the notion that out-of-classroom university-related experiences can influence students. It is likely that the university can encourage volunteer service not only by starting volunteer initiatives itself, but also by giving access to campus spaces and encouraging student organizations that initiate volunteer service involvement. Rather than studying a specific type of volunteer service, any type of volunteer service that was linked with university involvement is considered in this study.

This thesis did not provide support for the assertion of Terenzini and Reason (2005) that academic or co-curricular experiences like international experience or service-learning influence a student's moral growth. Researching academic and co-curricular experiences is important because they can be influenced by university administration and are more likely than other variables in higher education to substantially influence student outcomes (Terenzini and Reason

2005). Unfortunately, I cannot conclude with any degree of certainty that there is a relationship between service-learning, university-related international involvement, and self-transcendent values. Nor can I conclude that the peer group influences the relationship between university activities and self-transcendent values. Thus, this thesis does not provide evidence that would support the hypothesis that a service-learning class can stimulate moral growth. However, there is some evidence that some types of international experience may influence moral growth.

The analyses presented did not provide support for the assertion of Terenzini and Reason (2005) that the peer group moderates the relationship between different student experiences (e.g., volunteer service, service-learning, international experience) and a change in moral growth. The multi-dimensional reference group moderator was broken down into separate factors and analyzed to see if perhaps one factor might moderate the relationship between student activities and self-transcendent values. None of the factors analyzed were statistically significant. These included social network ties, social comparison, and questions about a student's desire to identify with the peer group. However, it is important to understand how the peer group influences student outcomes like moral growth as the peer group is such a salient part of the higher education experience.

While it was hoped that moral growth could be measured in this study, the lack of statistically significant results may not mean that moral growth is not enhanced by involvement in international experience or service-learning. Self-transcendent values are only one way to understand and measure the concept of moral growth. Students may be experiencing an increase in moral growth owing to involvement in service-learning or international experience that would be better measured through another measure of morality.

Using the Schwartz (2007) value scale as a way to measure morality is a recent approach that has not been applied extensively. The relationship between volunteer service and morality has now been empirically substantiated through the theoretical lens of cognitive values. Furthermore, the specificity of considering the influence of all types of volunteer service, which are directly related to involvement at a university, is a novel approach as well. Prior studies focused on specific service interventions or on service in general.

Unexpected Findings and Directions for Future Research

The following section presents a post-hoc analysis of the data in order that is intended to suggest avenues for future research. It is exploratory in nature and would require confirmation by more robust measures, data, and analysis before any conclusions could be drawn. The following analysis does not relate directly to the hypothesized relationships in this study, except to reference them. The two primary findings of post-hoc analysis include how international experience or the peer group might influence self-transcendent values.

Results presented in Table 8 utilize data for student experiences with international travel, specifically their interest learning about locals. The "desire to learn about locals" is a variable based on a 7-point Likert scale and comes from a single question. Students are asked, "How much do you want to learn about locals when you travel to their country?" Only students who have travelled internationally are asked this question. (See Appendix A.)The analysis shows that the desire to learn about locals when students travel internationally has a positive relationship with self-transcendent values. Previous analysis showed that international experience did not significantly influence self-transcendent values (Model 4, Table 6). The analysis in Table 8 provides support to the assertion that the motivations for international travel and the type of

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experiences gained while traveling may influence a student's self-transcendent values, and thus moral growth.

(Insert Table 8)

If a university cannot influence student desire to learn about locals, then investing effort to research this relationship would seem less viable. However, further analysis gives preliminary evidence that the university may influence a student's desire to learn about locals. Table 9 presents results that indicate a difference between full-time and less than full-time students on their desire to learn about locals. Full-time students, on average, have a stronger desire to learn about locals than not full-time students. These results are based on a two-sample t-test of the desire to learn about locals by full-time and not full-time student status. Together, Table 8 and Table 9 indicate that a valuable area for future research would include the influence of different motivations for travel and types of international experiences on self-transcendent values. For example, future research could consider the influence of students engaging in significant interpersonal interactions with locals when travelling abroad and how reflective students are of their experiences.

(Insert Table 9)

It is possible that the peer group helps to form values. Therefore, examination of the significance of the peer group in the formative stages of value change may be useful. In my post-hoc analysis I found evidence that the peer group, and individuals within the peer group may influence students to value volunteer service (Figure 8). This relationship was explored in a multivariate regression model (Table 10). Prior analysis has shown that involvement in volunteer service is positively associated with self-transcendent values (Table 6).

(Insert Figure 8)

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Table 10 presents the results of a model that regresses students' self-reported value of volunteer service on the perceived values of the peer group for volunteer service and the desire to be like another individual at the university who gives volunteer service. This model controls for age, gender, race, and marital status. The model also controls for influential observations (i.e., CooksD and Dfits).

The peer group may help to form a stronger value of volunteer service. The results of a preliminary analysis indicate a positive relationship between what the student perceives the peer group's value for volunteer service is and a student's own value of volunteer service (Table 10). The strong association between these variables (0.51) suggests that the peer group may have significant weight in the student's mind when determining how much they choose to value volunteer service. The peer group may help to encourage involvement in volunteer service, which in turn may lead to moral growth.

Individuals within the peer group may help to form a stronger value of volunteer service. The results of this analysis indicate a positive relationship between the desire to be like another individual at the university who engages in volunteer service and a student's value of volunteer service (Table 10). The strong correlation between these two variables (0.41) indicates that certain individuals within the peer group may have substantial weight in the student's mind when the student determines how much they value volunteer service. This model shows an R squared of 0.33. However, the variance might be better explained by other variables. Future research should consider what other antecedents might explain a student's value of volunteer service in order to determine what has the most salient influence. At the very least, these results help to draw a direct connection between the peer group and its influence on students. It is important to recognize the influence of the peer group on students of higher education. It may be that when a

university is successful at influencing the peer group, that peer group will serve as a reinforcing mechanism of university influence, encouraging the moral growth of its students.

(Insert Table 10)

In the model tested in Table 10, the perceived value of peers is based on the question, "At a more general level, how important are the following activities to your university peer group?" including "volunteer service." This question uses a 9-point Likert scale where 1= opposed to my principles, 5 = important, 9 = of supreme importance (See Appendix A). To see if students had a reference individual for volunteer service they were asked, "At your university, do you have a friend or classmate that you desire to be more like when it comes to their attitude towards volunteer service?" with possible answers 1 = Yes, 2 = No, and 3 = I don't know. If a student answers "Yes" they are asked, "How much do you desire to be like them with respect to their valuing volunteer service?" with possible answers including 1 = A little, 2 = Some, 3 = A lot, and 4 = To a large extent.

Table 10 shows results of a regression analysis that gives preliminary evidence that both the peer group and individuals within the peer group influence a student's self-reported value of volunteer service. These findings contrast with Hypothesis 4 that the peer group serves as a moderator between involvement in volunteer service and a change in self-transcendent values. Prior hypothesis testing (Models 5-7, Table 7) also indicates that the peer group was not a statistically significant moderator between service-learning, international experience, and self-transcendent values. These findings lend support to the notion that the peer group may help to form values themselves.

These findings indicate that the theoretical model of Terenzini and Reason (2005) could incorporate the influence of the peer group as not only a moderating influence, but as something

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that also forms values itself. The peer group may influence students to place value on certain out-of-classroom, academic, and co-curricular activities. By increasing the priority of these activities a student will be more likely to engage in these activities. These activities, in turn, may be associated with various outcomes in higher education, including moral growth.

While the results in Table 8, Table 9, and Table 10 are potentially interesting, they are based on single item measures. These findings should be investigated more fully with multi-item scales and inclusion of other explanatory variables. It will be important to see if the relationships continue to be statistically significant. A future analysis of a student's value of volunteer service (Table 10) might include other activities a student could engage in so that the relative priority (i.e., value) of volunteer service is measured (Schwartz er al. 2012) instead of a simple Likert-scale (Table 10; Omotto and Snyder 1995). At the very least, these results indicate that there are many possibilities moving forward to help build theory and empirically substantiate and explicate the influence of higher education on moral growth.

Having a desire to learn about locals when traveling abroad may be an important factor in what determines the moral growth of students who have international experiences. My post-hoc analysis indicated that a desire to learn about locals when traveling abroad is positively associated with moral growth (i.e., self-transcendent values). For some students, spending time abroad may be like going to the gym, but never working out. Traveling provides the opportunity, but not the requirement, to experience moral growth. For example, it is possible to travel abroad remaining almost completely insulated from experiences with others in those foreign places. Staying in an all-inclusive resort in Cancun, Mexico might provide a completely different cultural experience than staying with locals in a small town hostel. Taking trains across France may provide a better chance to mingle with the French then traveling with other students on a

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tour bus. Taking a tour bus isn't bad; it's just that students may be insulated so much that they interact with entertainment, museums, and their peers more than with the people who live in the places to which they travel. It would be interesting to investigate the different motivations for travel and different types of experiences gained while traveling to see what has an impact on moral growth and what does not. It may also prove valuable to see how an educational institution could assist in cultivating morally valuable types of international experiences or motivations for travel. My analysis does suggest that the university has an influence on motivations for international travel.

A university may have the ability to encourage morally valuable international experiences. According to my analysis full-time students have a greater desire to learn about locals than less than full-time students. The desire to learn about locals when traveling abroad is positively associated with moral growth. Full-time students may be more likely to view travel as an opportunity to advance their education. Learning about locals would be one way to gain an educational experience. Those who are not full-time students may view travel as less of an educational perspective and more as a vacation from work or other activities. Thus, the university context may help motivate morally valuable international experience.

LIMITATIONS

A major limitation of this study is the cross-sectional design which precludes testing the potential causal nature of the variables. Thus, the association of volunteer service with self-transcendent values can only be inferred as a possible explanation of the data. Additional variables may account for the changes between time in a higher education institution and the level of self-transcendent values. The current study is also limited in that it took place in one region in the United States. Reverse causality may exist. As the study did indicate significant

results for the relationship between self-transcendent values and volunteer service, this study should be replicated longitudinally and in more diverse regions to determine causal mechanisms and increase generalizability. Despite these limitations this study may suggest plausible explanations for the patterns found in the data.

CONCLUSION

> Colleges cannot force students to participate in organized campus activities or perform leadership roles. However, they can and should be accountable for creating the conditions that promote such behavior (Kuh 1995).

Higher education has an opportunity to influence individuals before they enter or re-enter the work force and make new kinds of decisions that impact individuals and society. Durkheim (1925) argued that education is the place to teach societal morality, more so than the family. Hoge et al. (1982) similarly argue that value socialization takes place more in external groups, like religious groups, than within the nuclear family. Regardless of where value growth takes place, higher education institutions certainly have an opportunity to help prepare students to be more ethical in their careers. Furthermore, students want to receive ethical education (Bok 2006).

Making ethical growth a priority in higher education should help in the development of a good society (Collins 1996). However, a university has a limited amount of time to influence students, typically just four years. While it is not the primary goal of the university to ensure that students must act ethically, a university may help students to grow ethically. A university cannot guarantee ethical behavior, but it can make it more likely. In some sense, it can be unethical for higher education institutions to ignore student ethical development. In the past it was said that, "all the colleges boast of the serviceable patriot as their ideal product" (Veysey 1970:119). Could you imagine a university today promoting its students as dishonest or future criminals? Diplomas communicate some level of approval or legitimacy for graduates, and it ought to be a

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consideration of the university that imbues such approval or legitimacy to make some effort to

help prevent its abuse.

REFERENCES

State University. 2014. "College and Its Effect on Students – Early Work on the Impact of College, Nine Generalizations, Later Studies, Pascarella and Terenzini." Retrieved Mar. 13, 2014 (http://education.stateuniversity.com/pages/1844/College-its-Effect-on-Students.html).

Abrams, Dominic, Margaret Wetherell, Sandra Cochrane, Michael A. Hogg, and John C. Turner. 1990. "Knowing What to Think by Knowing Who You Are: Self-Categorization and the Nature of Norm Formation, Conformity and Group Polarization." *British Journal of Social Psychology* 29(2):97-119.

Agle, Bradley R., and Craig B. Caldwell. 1999. "Understanding Research on Values in Business a Level of Analysis Framework." *Business & Society* 38(3):326-87.

Agle, Bradley R., Ronald K. Mitchell, and Jeffrey A. Sonnenfeld. 1999. "Who Matters to Ceos? An Investigation of Stakeholder Attributes and Salience, Corporate Performance, and Ceo Values." *Academy of Management Journal* 42(5):507-25.

Alwin, Duane Francis. 1991. *Political Attitudes over the Life Span: The Bennington Women after Fifty Years*. Madison, WI: University of Wisconsin Press.

Antonio, Anthony Lising. 2004. "The Influence of Friendship Groups on Intellectual Self-Confidence and Educational Aspirations in College." *The Journal of Higher Education* 75(4):446-71.

Armstrong, Mary Beth, J. Edward Ketz, and Dwight Owsen. 2003. "Ethics Education in Accounting: Moving toward Ethical Motivation and Ethical Behavior." *Journal of Accounting Education* 21(1):1-16.

Astin, Alexander W. 1993. *What Matters in College? Four Critical Years Revisited*. San Francisco, CA: Jossey-Bass.

Astin, Helen S., and Anthony Lising Antonio. 2000. "Building Character in College." *About Campus* 5(5):3-7.

Ball-Rokeach, Sandra J., Milton Rokeach, and Joel W. Grube. 1984. *The Great American Values Test: Influencing Behavior and Belief through Television*: New York City: The Free Press.

Bardi, Anat, and Shalom H. Schwartz. 2003. "Values and Behavior: Strength and Structure of Relations." *Personality and Social Psychology Bulletin* 29(10):1207-20.

Bauman, Zygmunt. 1993. *Postmodern Ethics*. Malden, MA: Blackwell Publishing.

Bauman, Zygmunt. 1995. *Life in Fragments: Essays in Postmodern Morality*. Malden, MA: Blackwell Publishing.

Bauman, Zygmunt. 2013. *Modernity and the Holocaust*: Ithaca, NY: Cornell University Press.

Berger, Joseph Buryl. 2000. "Organizational Behavior at Colleges and Student Outcomes: A New Perspective on College Impact." *The Review of Higher Education* 23(2):177-98.

Blasi, Augusto. 1980. "Bridging Moral Cognition and Moral Action: A Critical Review of the Literature." *Psychological Bulletin* 88(1):1.

Bok, Derek. 2006. *Our Underachieving Colleges: A Candid Look at How Much Students Learn and Why They Should Be Learning More*: Princeton, NJ: Princeton University Press.

Boss, Judith A. 1994. "The Effect of Community Service Work on the Moral Development of College Ethics Students." *Journal of Moral Education* 23(2):183-98.

Braxton, John M., Anna Shaw Sullivan, and Robert M. Johnson. 1997. "Appraising Tinto's Theory of College Student Departure." *Higher Education: Handbook of Theory and Research* 12(1):107-64.

Bultena, Gordon L., and Edward A. Powers. 1978. "Denial of Aging: Age Identification and Reference Group Orientations." *Journal of Gerontology* 33(5):748-54.

Carpenter, Donald D., Trevor S. Harding, Cynthia J. Finelli, Susan M. Montgomery, and Honor J. Passow. 2006. "Engineering Students' Perceptions of and Attitudes Towards Cheating." *Journal of Engineering Education* 95(3):181-94.

Checkoway, Barry. 2001. "Renewing the Civic Mission of the American Research University." *Journal of Higher Education* 72(2):125-47.

Chickering, Arthur. 2006. "Strengthening Spirituality and Civic Engagement in Higher Education." *Journal of College and Character* 8(1):1-5.

Colby, Anne, Lawrence Kohlberg, John Gibbs, Marcus Lieberman, Kurt Fischer and Herbert D Saltzstein. 1983. "A Longitudinal Study of Moral Judgment." *Monographs of the Society for Research in Child Development* 48(2):1-124.

Collins, Denis. 1996. "Serving the Homeless and Low-Income Communities through Business & Society/Business Ethics Class Projects: The University of Wisconsin-Madison Plan." *Journal of Business Ethics* 15(1):67-85.

Cooley, Charles Horton. 1902. *Human Nature and the Social Order*. New York City: Scribner.

Dawson, E. Murell, and Elfreda A. Chatman. 2001. "Reference Group Theory with Implications for Information Studies: A Theoretical Essay." *Information Research* 6(3):6-3.

Durkheim, Emile. 1925. *Moral Education. A Study in the Theory and Application of the Sociology of Education. Translated by Everett K. Wilson and Hermann Schnurer*. New York City: The Free Press.

Durkheim, Emile, and A. Giddens. 1972. *Emile Durkheim: Selected Writings*. Cambridge, England: Cambridge University Press.

Elias, Rafik Z. 2006. "The Impact of Professional Commitment and Anticipatory Socialization on Accounting Students' Ethical Orientation." *Journal of Business Ethics* 68(1):83-90.

Erickson, Lance D., Vaughn R.A. Call, and Ralph B. Brown. 2012. "Sos—Satisfied or Stuck, Why Older Rural Residents Stay Put: Aging in Place or Stuck in Place in Rural Utah." *Rural Sociology* 77(3):408-34.

Eshbaugh, Elaine M., Patricia E. Gross and Tatum Satrom. 2010. "Predictors of Self-Reported Likelihood of Working with Older Adults." *Educational Gerontology* 36(4):312-29.

Feather, Norman T. 1988. "Values, Valences, and Course Enrollment: Testing the Role of Personal Values within an Expectancy-Valence Framework." *Journal of Educational Psychology* 80(3):381.

Feather, Norman T. 1995. "Values, Valences, and Choice: The Influences of Values on the Perceived Attractiveness and Choice of Alternatives." *Journal of Personality and Social Psychology* 68(6):1135.

Feinman, Saul. 1982. "Social Referencing in Infancy." *Merrill-Palmer Quarterly* 28(4):445-70.

Feldman, Kenneth A., and Theodore Mead Newcomb. 1969. *The Impact of College on Students*. Chicago: Transaction Publishers.

Finelli, Cynthia J., Matthew A. Holsapple, Eunjong Ra, Rob M. Bielby, Brian A. Burt, Donald D. Carpenter, Trevor S. Harding and Janel A. Sutkus. 2012. "An Assessment of Engineering Students' Curricular and Co-Curricular Experiences and Their Ethical Development." *Journal of Engineering Education* 101(3):469-94.

Finger, William W., Charles M. Borduin and Karen E. Baumstark. 1992. "Correlates of Moral Judgment Development in College Students." *The Journal of Genetic Psychology* 153(2):221-23.

Fleckenstein, Marilynn P. 1997. "Service Learning in Business Ethics." *Journal of Business Ethics* 16(12-13):1347-51.

Forsyth, Donelson R. 1990. *Group Dynamics*. Pacific Grove, CA: Brooks Cole Publishing.

French Jr, John RP., and Bertram Raven. 1959. "The Bases of Social Power." Pp. 150-167 in
Studies in Social Power, edited by D. Cartwright and A. Zander. Ann Arbor, MI:
Research Center for Group Dynamics, Institute for Social Research

Garff, Parry Fader and Bradley R. Agle. Work in progress. "Objectives of Ethics Education and
University Means of Influence."

Gibbons, Frederick X., and Bram P. Buunk. 1999. "Individual Differences in Social Comparison:
Development of a Scale of Social Comparison Orientation." *Journal of Personality and
Social Psychology* 76(1):129.

Gorman, Margaret, Joseph Duffy, and Margaret Heffernan. 1994. "Service Experience and the
Moral Development of College Students." *Religious Education* 89(3):422-31.

Granovetter, Mark S. 1973. "The Strength of Weak Ties." *American Journal of Sociology*.
78(6):1360-80.

Gumport, Patricia J. 2001. "A Report to Stakeholders on the Condition and Effectiveness of
Postsecondary Education." *Change: The Magazine of Higher Learning* 33(3):27-42.

Gurin, Patricia, Eric L. Dey, Sylvia Hurtado, and Gerald Gurin. 2002. "Diversity and Higher
Education: Theory and Impact on Educational Outcomes." *Harvard Educational Review*
72(3):330-67.

Harding, Trevor S., Cynthia J. Finelli, Donald D. Carpenter, and Matthew Mayhew. 2006.
"Examining the Underlying Motivations of Engineering Undergraduates to Behave
Unethically." *Proceedings of the 2006 ASEE Annual Conference and Exposition,
Chicago, IL.*

Hartley, Ruth E. 1960. "Norm Compatibility, Norm Preference, and the Acceptance of New
Reference Groups." *The Journal of Social Psychology* 52(1):87-95.

Haws, David R. 2001. "Ethics Instruction in Engineering Education: A (Mini) Meta-Analysis."
Journal of Engineering Education 90(2):223-29.

Hitlin, Steven, and Jane Allyn Piliavin. 2004. "Values: Reviving a Dormant Concept." *Annual
Review of Sociology*. 30(1):359-93.

Ho, Yi-Hui. 2006. "The Impact of Interaction with Peers on College Student Development." *The
Journal of Human Resource and Adult Learning*. 10(1):81-87.

Hoffmann, John P. 2010. *Linear Regression Analysis: Applications and Assumptions.* United
Stated of America: Electronic self-published.

Hoge, Dean R., Gregory H. Petrillo, and Ella I. Smith. 1982. "Transmission of Religious and Social Values from Parents to Teenage Children." *Journal of Marriage and the Family*. 44(3):569-80.

Hyman, Herbert Hiram, and Eleanor Singer. 1968. *Readings in Reference Group Theory and Research*. New York City: The Free Press

Johnson, Peter E. 2009. "Direct and Indirect Benefits of an International Service-Learning Design Project: Educational Effects on Project Members and Their Peers." *International Journal for Service Learning in Engineering, Humanitarian Engineering and Social Entrepreneurship* 4(1):15-30.

Joyner, Brenda E., and Dinah Payne. 2002. "Evolution and Implementation: A Study of Values, Business Ethics and Corporate Social Responsibility." *Journal of Business Ethics* 41(4):297-311.

Katz, Elihu. 1960. "Communication Research and the Image of Society Convergence of Two Traditions." *American Journal of Sociology* 65(5):435-40.

Kelley, Earl C. 1947. *Education for What Is Real. Vol. 1*. New York City: Harper & Row.

Kelley, Harold H. 1952. "Two Functions of Reference Groups." Pp. 410-414 in *Readings in Social Psychology, edited by* G.E. Swanson, T.M. Newcomb, and E.L. Hartley. New York City: Holt, Rinehart and Winston.

King, Patricia M., and Matthew J. Mayhew. 2002. "Moral Judgment Development in Higher Education: Insights from the Defining Issues Test." *Journal of Moral Education* 31(3):247-70.

Knapp, Stan J. 2000. "Emmanuel Levinas and the Moral Displacement of Knowledge: Rethinking the Relation between the Moral and Social Orders." *Current Perspectives in Social Theory* 20(1):187-213.

Kohlberg, Lawrence. 1973. "The Claim to Moral Adequacy of a Highest Stage of Moral Judgment." *The Journal of Philosophy* 70(18):630-46.

Korte, Charles, and Andrew Sylvester. 1982. "Expectations, Experience, and Anticipatory Socialization at a Scottish University." *The Journal of Social Psychology* 118(2):187-97.

Krackhardt, David. 1992. "The Strength of Strong Ties: The Importance of Philos in Organizations." *Networks and Organizations: Structure, Form, and Action* 216(1):216-239.

Krahé, Barbara. 1992. *Personality and Social Psychology: Towards a Synthesis*. Los Angeles: Sage Publications, Inc.

Kuh, George D. 1995. "The Other Curriculum: Out-of-Class Experiences Associated with Student Learning and Personal Development." *The Journal of Higher Education* 66(2):123-55.

Kuh, George D., Nick Vesper, Mark R. Connolly, and C. Robert Pace. 1997. *College Student Experiences Questionnaire: Revised Norms for the Third Edition.* Bloomington, IN: Center for Postsecondary Research and Planning, Indiana University.

Kuh, George D., Jillian Kinzie, Jennifer A. Buckley, Brian K. Bridges and John C. Hayek. 2006. "What Matters to Student Success: A Review of the Literature." Pp. 1-151 in *Commissioned Report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success*.

Kuhn, Manford H., and Thomas S. McPartland. 1954. "An Empirical Investigation of Self-Attitudes." *American Sociological Review* 19(1):68-76.

Levin, Daniel Z., and Rob Cross. 2004. "The Strength of Weak Ties You Can Trust: The Mediating Role of Trust in Effective Knowledge Transfer." *Management Science* 50(11):1477-90.

Lin, Nan. 1999. "Social Networks and Status Attainment." *Annual Review of Sociology* 25(1):467-87.

Loxley, Janet C., and John M. Whiteley. 1986. *Character Development in College Students: The Curriculum and Longitudinal Results.* Vol. 2. Schenectady, NY: Character Research Press.

Magnusson, David, and Norman S. Endler. 1977. *Personality at the Crossroads: Current Issues in Interactional Psychology*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Marsden, Peter V., and Karen E. Campbell. 1984. "Measuring Tie Strength." *Social Forces* 63(2):482-501.

Matsuba, M. Kyle, Daniel Hart, and Robert Atkins. 2007. "Psychological and Social-Structural Influences on Commitment to Volunteering." *Journal of Research in Personality* 41(4):889-907.

Mayhew, Matthew J., and Patricia King. 2008. "How Curricular Content and Pedagogical Strategies Affect Moral Reasoning Development in College Students." *Journal of Moral Education* 37(1):17-40.

Mayhew, Matthew J., and Mark E. Engberg. 2010. "Diversity and Moral Reasoning: How Negative Diverse Peer Interactions Affect the Development of Moral Reasoning in Undergraduate Students." *The Journal of Higher Education* 81(4):459-88.

Mayhew, Matthew J., Tricia A. Seifert, and Ernest T. Pascarella. 2010. "A Multi-Institutional Assessment of Moral Reasoning Development among First-Year Students." *The Review of Higher Education* 33(3):357-90.

Mayhew, Matthew J., Tricia A. Seifert, Ernest T. Pascarella, Thomas F. Nelson Laird, and Charles F. Blaich. 2012. "Going Deep into Mechanisms for Moral Reasoning Growth: How Deep Learning Approaches Affect Moral Reasoning Development for First-Year Students." *Research in Higher Education* 53(1):26-46.

McCabe, Donald L., and Linda Klebe Trevino. 1993. "Academic Dishonesty: Honor Codes and Other Contextual Influences." *Journal of Higher Education* 64(5):522-38.

McCabe, Donald L., and Linda Klebe Trevino. 1997. "Individual and Contextual Influences on Academic Dishonesty: A Multicampus Investigation." *Research in Higher Education* 38(3):379-96.

McCabe, Donald L., Linda Klebe Trevino, and Kenneth D. Butterfield. 1999. "Academic Integrity in Honor Code and Non-Honor Code Environments: A Qualitative Investigation." *Journal of Higher Education* 70(2):211-34.

McPhail, Clark, and Charles W. Tucker. 1972. "The Classification and Ordering of Responses to the Question 'Who Am I?' " *The Sociological Quarterly* 13(3):329-47.

Merton, Robert K., and A.S. Kitt. 1950. "Contributions to the Theory of Reference Group Behavior " in *Continuities in Social Research: Studies in the Scope and Method of" the American Soldier."* edited by R. K. Merton, and P. F. Lazersfeld.

Moschis, George P. 1976. "Social Comparison and Informal Group Influence." *Journal of Marketing Research* 36(3):237-44.

Narvaez, Darcia, and Tonia Bock. 2002. "Moral Schemas and Tacit Judgement or How the Defining Issues Test Is Supported by Cognitive Science." *Journal of Moral Education* 31(3):297-314.

Newcomb, Theodore M. 1951. "[a Book Review of] Continuities in Social Research: Studies in the Scope and Method of the American Soldier, Edited by Robert K. Merton and Paul F. Lazarsfeld." *American Journal of Sociology* 57(1):90-92.

Newcomb, Theodore M. 1952 "Attitude Development as a Function of Reference Groups: The Bennington Study." Pp. 420-430 in *Society for the Psychological Study of Social Issues, Readings in Social Psychology.* 2nd ed. edited by Guy E. Swanson, Theodore M. Newcomb, and Eugene L. Hartley. New York: Holt.

Nunnally, Jum C., Ira H. Bernstein. 1967. *Psychometric Theory*. 3rd ed. New York City: McGraw-Hill

Omoto, Allen M., and Mark Snyder. 1995. "Sustained Helping without Obligation: Motivation, Longevity of Service, and Perceived Attitude Change among Aids Volunteers." *Journal of Personality and Social Psychology* 68(4):671.

Ostini, Remo, and D. Andrew Ellerman. 1997. "Clarifying the Relationship between Values and Moral Judgement." *Psychological Reports* 81(2):691-702.

Palmer, Betsy. 2011. "Design in Context: Where Do the Engineers of 2020 Learn This Skill?" Proceedings of the American Society for Engineering Education, Vancouver, Canada (2011)

Pascarella, Ernest T., Patrick T. Terenzini, and Kenneth A. Feldman. 1991. *How College Affects Students*. San Francisco: Jossey-Bass

Patchen, Martin. 1961. *The Choice of Wage Comparisons*: Upper Saddle River, NJ: Prentice-Hall.

Pless, Nicola M., Thomas Maak, and Günter K. Stahl. 2012. "Promoting Corporate Social Responsibility and Sustainable Development through Management Development: What Can Be Learned from International Service Learning Programs?" *Human Resource Management* 51(6):873-903.

Rabouin, Michelle. 1997. "Lyin't (*) Gers, and 'Cares' Oh My: The Case for Feminist Integration of Business Ethics." *Journal of Business Ethics* 16(3):247-61.

Rest, James R., Mark L. Davison, and Steven Robbins. 1978. "Age Trends in Judging Moral Issues: A Review of Cross-Sectional, Longitudinal, and Sequential Studies of the Defining Issues Test." *Child Development* 49(2):263-79.

Rest, James R., and Stephen J. Thoma. 1985. "Relation of Moral Judgment Development to Formal Education." *Developmental Psychology* 21(4):709.

Ro, Hyun Kyoung, Patrick T. Terenzini, and Alexander C. Yin. 2012. "Between-College Effects on Students Reconsidered." *Research in Higher Education* 54(3):253-282.

Rokeach, Milton. 1968. *Beliefs, Attitudes and Values: A Theory of Organization and Change.* San Francisco, CA: Jossey-Bass.

Rokeach, Milton. 1973. *The Nature of Human Values*. New York City: Free press.

Rossouw, G.J. 2002. "Three Approaches to Teaching Business Ethics." *Teaching Business Ethics* 6(4):411-33.

Sax, L.S., A. Astin, W. Korn, and S. Gilmartin. 1996. "The American College Teacher." Washington, DC: Nation Press.

Sax, Linda J. 2004. "Citizenship Development and the American College Student." *New Directions for Institutional Research* 2004 122(1):65-80.

Schachter, Stanley. 1951. "Deviation, Rejection, and Communication." *The Journal of Abnormal and Social Psychology* 46(2):190.

Schlaefli, Andre, James R. Rest, and Stephen J. Thoma. 1985. "Does Moral Education Improve Moral Judgment? A Meta-Analysis of Intervention Studies Using the Defining Issues Test." *Review of Educational Research* 55(3):319-52.

Schwartz, Shalom H., and W. Bilsky. 1987. "Toward a Psychological Structure of Human Values." *Journal of Personality and Social Psychology* 53(1):550-62.

Schwartz, Shalom H. 1992. "Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries." *Advances in Experimental Social Psychology* 25(1):1-65.

Schwartz, Shalom H. 1994. "Are There Universal Aspects in the Structure and Contents of Human Values?" *Journal of Social Issues* 50(4):19-45.

Schwartz, Shalom H. 2007. "Universalism Values and the Inclusiveness of Our Moral Universe." *Journal of Cross-Cultural Psychology* 38(6):711-28.

Schwartz, Shalom H., Jan Cieciuch, Michele Vecchione, Eldad Davidov, Ronald Fischer, Constanze Beierlein, Alice Ramos, Markku Verkasalo, Jan-Erik Lönnqvist, and Kursad Demirutku. 2012. "Refining the Theory of Basic Individual Values." *Journal of Personality and Social Psychology* 103(4):663.

Siegel, Alberta Engvall, and Sidney Siegel. 1957. "Reference Groups, Membership Groups, and Attitude Change." *The Journal of Abnormal and Social Psychology* 55(3):360.

Simmons, Dale D. 1982. "Is There Compassion in Principled Moral Judgment?" *Psychological Reports* 50(2):553-54.

Simmons, Richard S., William E. Shafer, and Robin S. Snell. 2013. "Effects of a Business Ethics Elective on Hong Kong Undergraduates' Attitudes toward Corporate Ethics and Social Responsibility." *Business & Society* 52(4):558-91.

Singer, Eleanor. 1981. "Reference Groups and Social Evaluations." Pp. 66-87 in *Social Psychology: Sociological Perspectives* edited by Morris Rosenberg, and Ralph H. Turner. New York City: Basic Books

Smith, Christian, and Patricia Snell. 2009. *Souls in Transition: The Religious and Spiritual Lives of Emerging Adults*: Oxford, England: Oxford University Press.

Stern, Eric, and Suzanne Keller. 1953. "Spontaneous Group References in France." *Public Opinion Quarterly* 17(2):208-17.

Terenzini, Patrick T., and Robert D. Reason. 2005. "Parsing the First Year of College: A Conceptual Framework for Studying College Impacts." Presented at The A*nnual Meeting of the Association for the Study of Higher Education, Philadelphia, PA*.

Tinto, V. 1993. *Leaving College: Rethinking the Causes and Cures of Student Attrition.* Chicago, IL: University of Chicago Press

Veysey, Laurence R. 1970. *The Emergence of the American University*. Vol. 596. Chicago: University of Chicago Press.

Vogelgesang, Lori J., and Alexander W. Astin. 2000. "Comparing the Effects of Community Service and Service-Learning." *Michigan Journal of Community Service Learning* 7(1):25-34.

Walden, Tedra A., and Abigail Baxter. 1989. "The Effect of Context and Age on Social Referencing." *Child Development* 60(6):1511-18.

Walker, Lawrence J. 2004. "Gus in the Gap: Bridging the Judgment-Action Gap in Moral Functioning." Pp. 1-20 in *Moral Development, Self, and Identity* edited by Daniel K. Lapsley, and Darcia Narvaez.

Weber, James. 1993. "Exploring the Relationship between Personal Values and Moral Reasoning." *Human Relations* 46(4):435-63.

Weiss, Robert S. 1995. *Learning from Strangers: The Art and Method of Qualitative Interview Studies*. New York City: The Free Press

Welsch, Roy E., and Edwin Kuh. 1977. *Linear Regression Diagnostics.* Cambridge, MA: National Bureau of Economic Research

Williams, Trevor H. 1972. "Educational Aspirations: Longitudinal Evidence on Their Development in Canadian Youth." *Sociology of Education* 45(2):107-33.

Wilson, John P. 1983. "Motives, Values and Moral Judgments." *Journal of Personality Assessment* 47(4):414-26.

APPENDIX A: SURVEY SENT TO ENGINEERING STUDENTS

By measuring the perceived value of the group as well as the actual group value (by summing individual's values across the sample) this survey instrument has the potential to test mediators and moderators of the connection between perceived group values and actual group values. While correct knowledge of group values is not essential to the influence of the reference group itself, the main construct being tested in this study, systematic incorrect perceptions of group values may be of interest to future scholars as it is the perception which yields influence over the individual. In other words, if there is a social cause for incorrect perceptions of the group then knowing that cause may be of interest to scholars who are concerned with the influence of the perceptions themselves. However, the investigation of the antecedents of perception is beyond the scope of this study. The following is the survey sent to engineering students. It should be noted that the internal logic of the survey which determines which students received what questions has not been included. This following is for illustrative purposes only.

Engineering Student Experience Survey
Please help us to better serve you and your fellow engineering students by taking this survey. The survey is about your college experiences both inside and outside the classroom. Survey topics include, but aren't limited to, community service, university classes, and international experience. Your responses are completely anonymous and confidential. No personal identifying information will be reported. Participation in this 10-minute survey is voluntary. Your responses are for research purposes only. You can withdraw from the survey at any point. Responses from this survey will only be reported as summaries and not individually. You will not be paid for taking this survey. This survey involves minimal risk to you. Please take this survey only once. Your feedback will help administrators to gain support for positive university classes, programs and experiences. Upon completion of this 10-minute survey you may enter into the $30 Amazon.com gift card drawing. If you have questions or concerns you may contact us at: surveyconcerns@gmail.com

❑ I am at least 18 years old and am voluntarily taking this survey

What country are you from?
○ United States of America
○ Afghanistan
○ Albania
○ Algeria
○ Andorra
○ [all countries listed here on actual survey]

Which State are you from?
○ Alabama
○ Arizona
○ Arkansas
○ California
[All states listed here on actual survey]

What is your gender?
○ Male
○ Female

Please answer the following Yes / No Questions

	Yes	No
Do you participate in service that is required by your university? (E.g., required service for a scholarship, for your classes or major)	○	○
Do you volunteer for service that is not required by your university? (E.g., donate blood, tutor fellow students)	○	○
Have you been outside the U.S?	○	○
Are your parents or sibling engineers or engineering students?	○	○
Are you married?	○	○
Do you plan to work as an engineer after you graduate?	○	○

What are the reasons you have been outside the U.S? Please select all that apply.

- ❑ Humanitarian service sponsored by your university
- ❑ Humanitarian service not sponsored by your university
- ❑ Study abroad
- ❑ Other University program
- ❑ Military service
- ❑ Work
- ❑ Religious
- ❑ Vacation with family
- ❑ Vacation with friends
- ❑ Vacation alone
- ❑ Exchange student before college
- ❑ Visit family living abroad
- ❑ Other _____

How much do you want to learn about locals when you travel to their country?

- ○ Not at all
- ○ .
- ○ Little
- ○ .
- ○ Some
- ○ .
- ○ A Lot

What is the longest period of time you spent outside the U.S?

- ○ Less than two weeks
- ○ Two to four weeks
- ○ One to three months
- ○ Four to six months
- ○ Six to 12 months
- ○ More than a year

About how much time all together (in years) would you estimate that you have spent outside the U.S?

- ○ 0-1 Years
- ○ 1-2 Years
- ○ 2-3 Years
- ○ 3-4 Years
- ○ 4-5 Years
- ○ 5-6 Years
- ○ 6-7 Years

○ 7-8 Years
○ 8-9 Years
○ 9-10 Years
○ 10 or more years

Please answer the following Yes / No Questions

	Yes	No
Do you participate in service that is required by your university? (E.g., required service for a scholarship, for your classes or major)	○	○
Do you volunteer for service that is not required by your university? (E.g., donate blood, tutor fellow students)	○	○
Have you traveled to a country outside both your home country and the U.S?	○	○
Are your parents or siblings engineers or engineering students?	○	○
Are you married?	○	○
Do you plan to work as an engineer after you graduate?	○	○

What are the reasons you have been outside your home country? Please select all that apply.
❑ Humanitarian service sponsored by your university
❑ Humanitarian service not sponsored by your university
❑ Study abroad
❑ Other University program
❑ Military service
❑ Work
❑ Religious
❑ Vacation with family
❑ Vacation with friends
❑ Vacation alone
❑ Exchange student before college
❑ Visit family living abroad
❑ Other _____

What is the longest period of time you spent outside your home country?
- ○ Less than two weeks
- ○ Two to four weeks
- ○ One to three months
- ○ Four to six months
- ○ Six to 12 months
- ○ More than a year

About how much time all together (in years) would you estimate that you have spent outside your home country?
- ○ 0-1 Years
- ○ 1-2 Years
- ○ 2-3 Years
- ○ 3-4 Years
- ○ 4-5 Years
- ○ 5-6 Years
- ○ 6-7 Years
- ○ 7-8 Years
- ○ 8-9 Years
- ○ 9-10 Years
- ○ 10 or more years

About how much cumulative time (in years) would you estimate that you have spent inside the U.S?
- ○ 0-1 Years
- ○ 1-2 Years
- ○ 2-3 Years
- ○ 3-4 Years
- ○ 4-5 Years
- ○ 5-6 Years
- ○ 6-7 Years
- ○ 7-8 Years
- ○ 8-9 Years
- ○ 9-10 Years
- ○ 10 or more years

Please indicate how much you would you like to go on a study abroad and why:

❍ None _____
❍ Little _____
❍ Some _____
❍ A Lot _____

Sometimes university classes are designed to include a significant element of service. For example, a class could include the opportunity to learn about under-served or underprivileged people and design something to address their needs, like designing a water filter for those in a developing country. Another example might be a class on government that requires civic or community service.

	Yes	No
Have you taken a class designed to include a significant element of service?	❍	❍

For the class that you took that included a significant element of service, was your grade significantly influenced by doing (or not doing) service?

❍ Yes
❍ No
❍ Not sure

Please consider how often you perform service for civic, charitable or humanitarian reasons.

	Never	1-2 times a year	Once a semester	2-3 times a semester	Once a month	2-3 times a month	Once a week	2-4 times a week	Almost daily	Daily
How often do you perform service off-campus that you heard about through your involvement at your university? ♦ Examples include tutoring children at local schools or giving time to a	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

non-profit organization. How often do you accept service opportunities offered on campus? ♦ Examples include a Red Cross blood donation on campus or participating in a food drive	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

How important are the following activities to you?

	Opposed to My Principles	Not Important	.	.	Important	.	.	Very Important	Of Supreme Importance
Volunteer service	❍	❍	❍	❍	❍	❍	❍	❍	❍
International experience	❍	❍	❍	❍	❍	❍	❍	❍	❍
Taking a class that is designed to include service	❍	❍	❍	❍	❍	❍	❍	❍	❍

At a more general level, how important are the following activities to your university peer group?

	Opposed to Their Principles	Not Important	.	.	Important	.	.	Very Important	Of Supreme Importance	I have no perception of this
Volunteer service	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
International experience	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Taking a class that is designed to include service	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

	Not at all	A little	Some	A lot	To a large extent
To what extent do you desire to share the greater peer group's attitude towards volunteer service?	❍	❍	❍	❍	❍

Please answer the following questions about your relationship to your general peer group.

	Not at all	A little	Some	A lot	To a large extent
To what extent do you desire to share the greater peer group's attitude towards international experience?	❍	❍	❍	❍	❍

Please answer the following questions about your relationship to your general peer group.

	Not at all	A little	Some	A lot	To a large extent
To what extent do you desire to share the greater peer group's attitude towards taking a class designed to include an element of service?	○	○	○	○	○

Please answer the following questions about your relationship to your general peer group.

	Not at all	A little	Some	A lot	To a large extent
How much do you want to gain or maintain the acceptance of your peers?	○	○	○	○	○
To what extent do you interact with your peers?	○	○	○	○	○
To what extent do you try to find out what your peers think?	○	○	○	○	○
To what extent do you compare how you do things with your peers?	○	○	○	○	○

How frequently do you spend your leisure time with members of your peer group?
- ○ Never
- ○ Rarely
- ○ Once a month
- ○ 2-3 times a month
- ○ Once a week
- ○ More than once a week

At your university, do you have a friend of classmate that you desire to be more like when it comes to volunteer service?
- ○ Yes
- ○ No
- ○ I don't know

How much do you desire to be like them with respect to their attitude towards volunteer service?
- ○ A little
- ○ Some
- ○ A lot
- ○ To a large extent

Compared to your peer group, how much do you think they value volunteer service?
- ○ Not at all
- ○ A little
- ○ Some
- ○ A lot
- ○ An extreme amount

At your university, do you have a friend of classmate that you desire to be more like when it comes to international experience?
- ○ Yes
- ○ No
- ○ I don't know

How much do you desire to be like them with respect to their valuing international experience?
- ❍ A little
- ❍ Some
- ❍ A lot
- ❍ To a large extent

Compared to your peer group, how much do you think they value international experience?
- ❍ Not at all
- ❍ A little
- ❍ Some
- ❍ A lot
- ❍ To a large extent

At your university, do you have a friend of classmate that you desire to be more like when it comes to their attitude towards a class designed to include an element of service?
- ❍ Yes
- ❍ No
- ❍ I don't know

How much do you desire to be like them with respect to their valuing a class designed to include an element of service?
- ❍ A little
- ❍ Some
- ❍ A lot
- ❍ To a large extent

Compared to your peer group, how much do you think they value taking a class designed to include an element of service?
- ❍ Not at all
- ❍ A little
- ❍ Some
- ❍ A lot
- ❍ To a large extent

Descriptions of a hypothetical person follow. Please read each description of this hypothetical person and think about how much he is or is not like you.

	Not like me at all	Not like me	A little like me	Moderately like me	Like me	Very much like me
It is important to him that the weak and vulnerable in	❍	❍	❍	❍	❍	❍

society be protected.						
It is important to him to be the one who tells others what to do	○	○	○	○	○	○
It is important to him to care for nature.	○	○	○	○	○	○
It is important to him to take care of people he is close to.	○	○	○	○	○	○
It is important to him to be tolerant toward all kinds of people and groups.	○	○	○	○	○	○
It is important to him to be very successful	○	○	○	○	○	○
It is important to him to own expensive things that show his wealth	○	○	○	○	○	○
It is important to him that people he knows have full confidence in him.	○	○	○	○	○	○
It is important to him that people do what he says they should	○	○	○	○	○	○
It is important to him to have the power that	○	○	○	○	○	○

money can bring	○	○	○	○	○	○
It is important to him to take part in activities to defend nature.	○	○	○	○	○	○
It is important to him to be wealthy	○	○	○	○	○	○
It is very important to him to help the people dear to him.	○	○	○	○	○	○
It is important to him to be a dependable and trustworthy friend.	○	○	○	○	○	○
It is important to him to listen to and understand people who are different from him.	○	○	○	○	○	○
It is important to him that every person in the world have equal opportunities in life.	○	○	○	○	○	○
It is important to him to protect the natural environment from destruction or pollution.	○	○	○	○	○	○
It is important to him to	○	○	○	○	○	○

	Not like me at all	Not like me	A little like me	Moderately like me	Like me	Very much like me
concern himself with every need of his dear ones.						
It is important to him to have ambitions in life	○	○	○	○	○	○
It is important to him that everyone be treated justly, even people he doesn't know.	○	○	○	○	○	○
It is important to him that all his friends and family can rely on him completely.	○	○	○	○	○	○
It is important to him that people recognize what he achieves	○	○	○	○	○	○
It is important to him to have the power to make people do what he wants	○	○	○	○	○	○
It is important to him to accept people even when he disagrees with them.	○	○	○	○	○	○

Descriptions of a hypothetical person follow. Please read each description of this hypothetical person and think about how much he is or is not like you.

	Not like me at all	Not like me	A little like me	Moderately like me	Like me	Very much like me
It is important to her that the	○	○	○	○	○	○

weak and vulnerable in society be protected.					
It is important to her to be the one who tells others what to do	○	○	○	○	○	○
It is important to her to care for nature.	○	○	○	○	○	○
It is important to her to take care of people she is close to.	○	○	○	○	○	○
It is important to her to be tolerant toward all kinds of people and groups.	○	○	○	○	○	○
It is important to her to be very successful	○	○	○	○	○	○
It is important to her to own expensive things that show her wealth	○	○	○	○	○	○
It is important to her that people she knows have full confidence in her.	○	○	○	○	○	○
It is important to her that people do what she says they should	○	○	○	○	○	○
It is important to her to have	○	○	○	○	○	○

the power that money can bring	❍	❍	❍	❍	❍	❍
It is important to her to take part in activities to defend nature.	❍	❍	❍	❍	❍	❍
It is important to her to be wealthy	❍	❍	❍	❍	❍	❍
It is very important to her to help the people dear to her.	❍	❍	❍	❍	❍	❍
It is important to her to be a dependable and trustworthy friend.	❍	❍	❍	❍	❍	❍
It is important to her to listen to and understand people who are different from her.	❍	❍	❍	❍	❍	❍
It is important to her that every person in the world have equal opportunities in life.	❍	❍	❍	❍	❍	❍
It is important to her to protect the natural environment from destruction or pollution.	❍	❍	❍	❍	❍	❍
It is important to her to concern herself	❍	❍	❍	❍	❍	❍

with every need of her dear ones.						
It is important to her to have ambitions in life	○	○	○	○	○	○
It is important to her that everyone be treated justly, even people she doesn't know.	○	○	○	○	○	○
It is important to her that all her friends and family can rely on her completely.	○	○	○	○	○	○
It is important to her that people recognize what she achieves	○	○	○	○	○	○
It is important to her to have the power to make people do what she wants	○	○	○	○	○	○
It is important to her to accept people even when she disagrees with them.	○	○	○	○	○	○

What is your age?
- ○ 18-19
- ○ 20-23
- ○ 24-29
- ○ 30-40
- ○ 40-50
- ○ 50-60
- ○ 60+

Please select one or more of the following racial categories to describe yourself.
- ❑ American Indian or Alaska Native
- ❑ Asian
- ❑ African American
- ❑ Native Hawaiian or Pacific Islander
- ❑ Caucasian
- ❑ Hispanic / Latino
- ❑ Other _____

Please confirm your current major:
- ❍ Bioengineering
- ❍ Chemical Engineering
- ❍ Civil & Environmental Engineering
- ❍ Electrical & Computer Engineering
- ❍ Material Science & Engineering
- ❍ Mechanical Engineering
- ❍ School of Computing
- ❍ School of Technology
- ❍ Other Degree Program

Which other degree program are you in?
- ❍ Computer Engineering
- ❍ Entertainment Arts & Engineering
- ❍ Nuclear Engineering
- ❍ Petroleum Engineering
- ❍ Other _____

Which major in the school of technology?
- ❍ Construction Management
- ❍ Facility & Property Management
- ❍ Industrial Design
- ❍ Information Technology
- ❍ Manufacturing Engineering Technology
- ❍ Technology Engineering Education
- ❍ Other _____

Please indicate which degree program in which you are currently enrolled.
- ❍ Bachelors
- ❍ Masters
- ❍ PhD

How many years of college education have you had?
- ○ 0-1
- ○ 1-2
- ○ 2-3
- ○ 3-4
- ○ 4-5
- ○ 5-6
- ○ 6-7
- ○ 7-8
- ○ 8-9
- ○ 9-10
- ○ 10-11
- ○ 11-12
- ○ 12-13
- ○ 13+

Are you a full-time or part-time student?
- ○ Full-time
- ○ Part-time
- ○ Not Actively Pursuing a Degree
- ○ Other _____

Figure 1: Terenzini and Reason's (2005) Theoretical Model of Higher Education[2]

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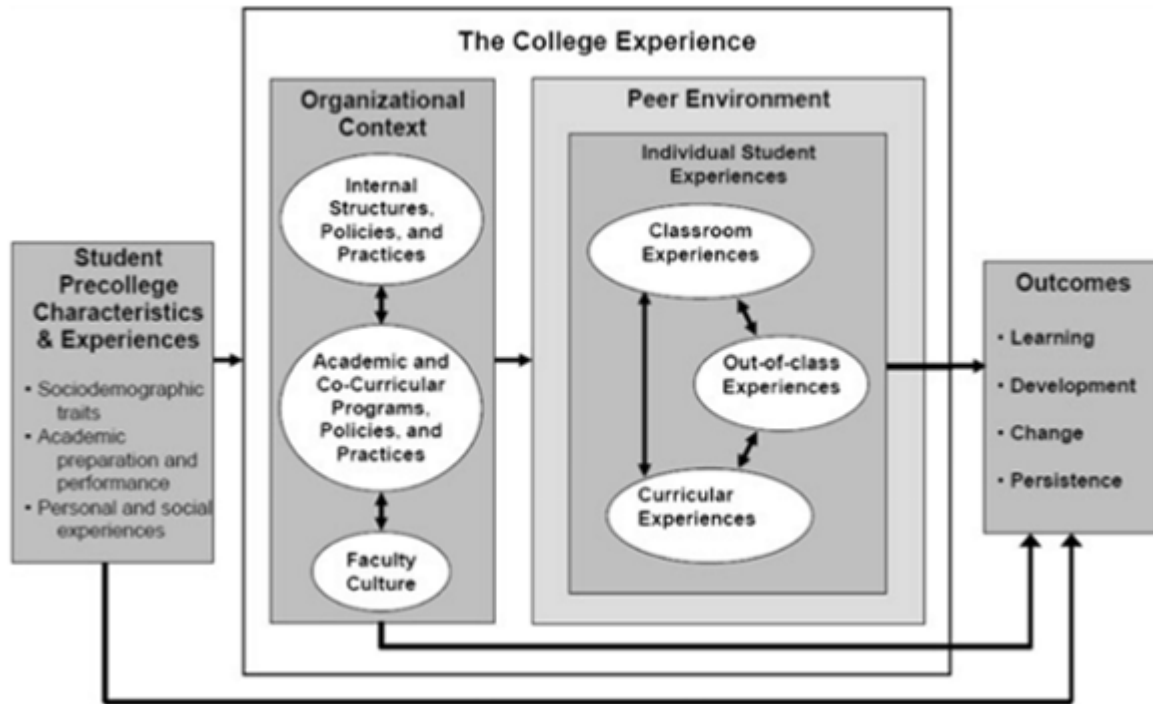
[2] This figure is from Ro, Terenzini, and Yin 2012.

Figure 2: Ethical Objectives of Higher Education that Relate to Universalism

Moral
Tolerance

Moral
Sensitivity

Universalism

Moral
Motivation

Moral
Action
Experience
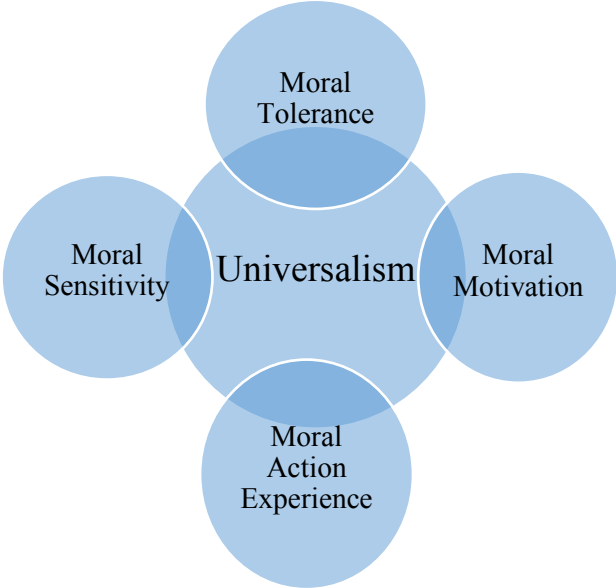
Figure 3: Ethical Objectives of Higher Education that Relate to Benevolence

Figure 4: A Process of Moral Responsibility

Taking action to meet the other's needs

Uncertainty and Discontentment of need meeting action

Seeking knowledge and awareness of what and how to meet the others needs

Reflection on need meeting action

Figure 5: Elements of Terenzini and Reason's (2005) Theoretical Model for the Present Study

Figure 6: Empirical and Theoretical Contributions of This Thesis

Figure 7: Hypothesis Tested Empirically in This Thesis

Figure 8: Post-Hoc Model of the Peer Group as the Antecedent of Student Values

Table 1: Ethical Objectives of Higher Education

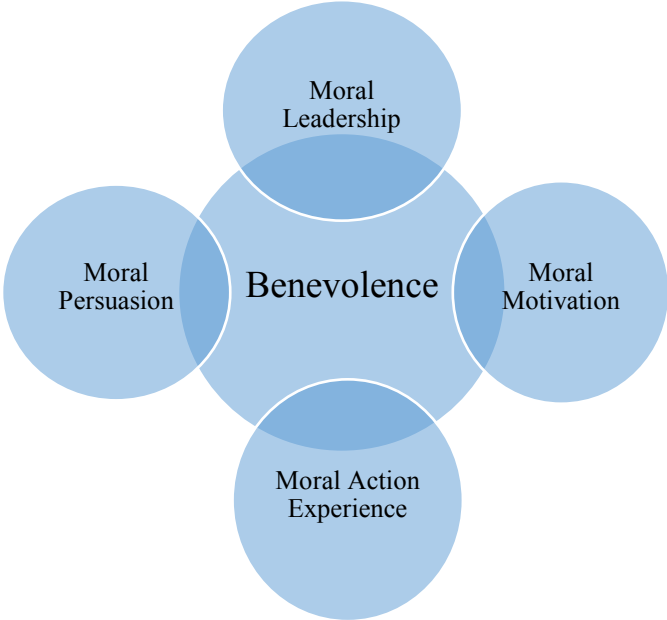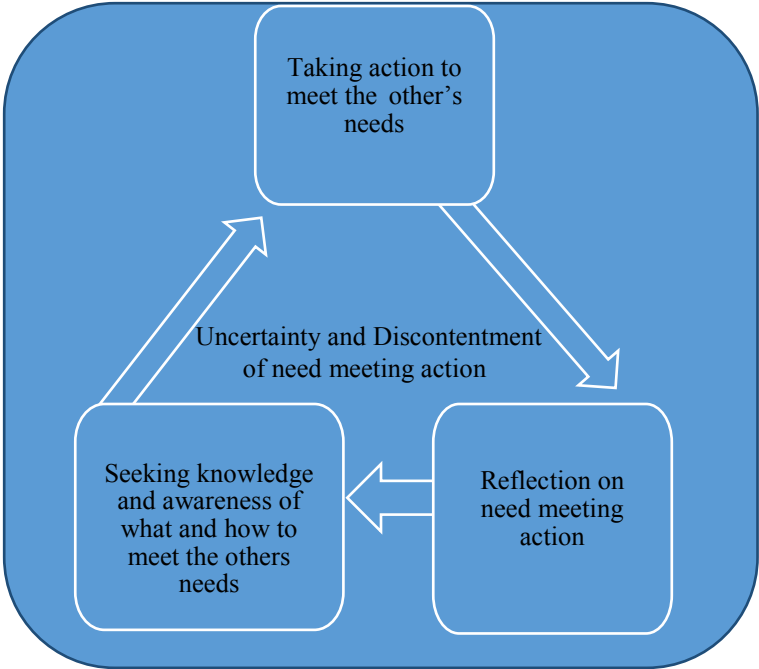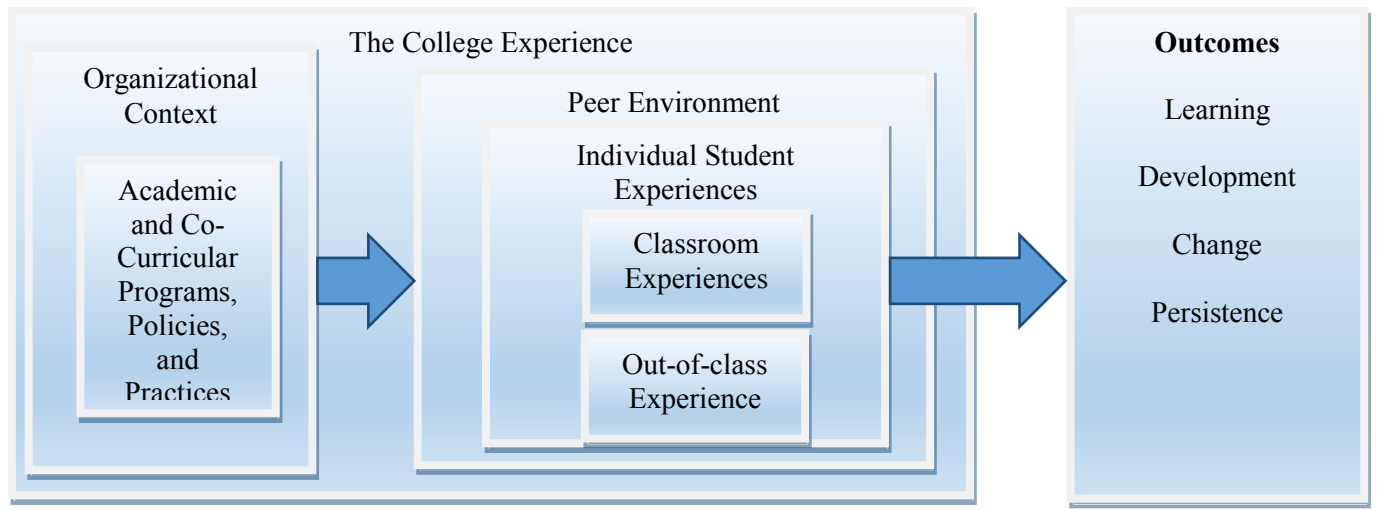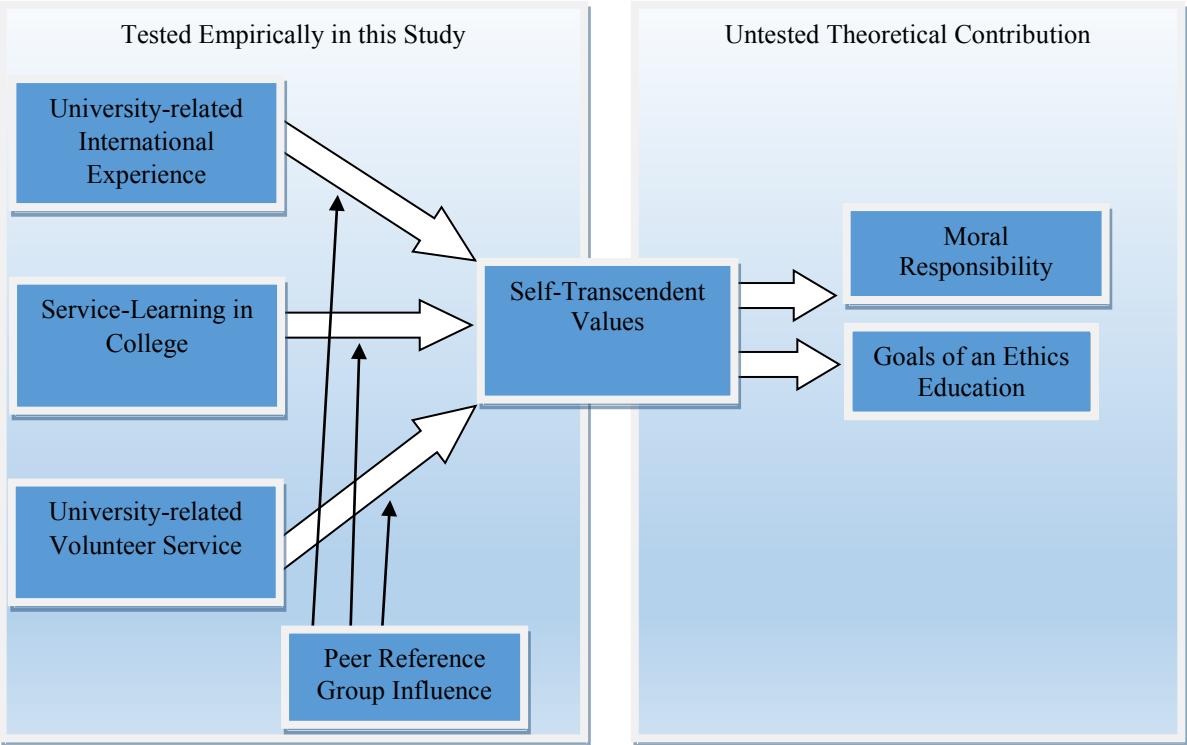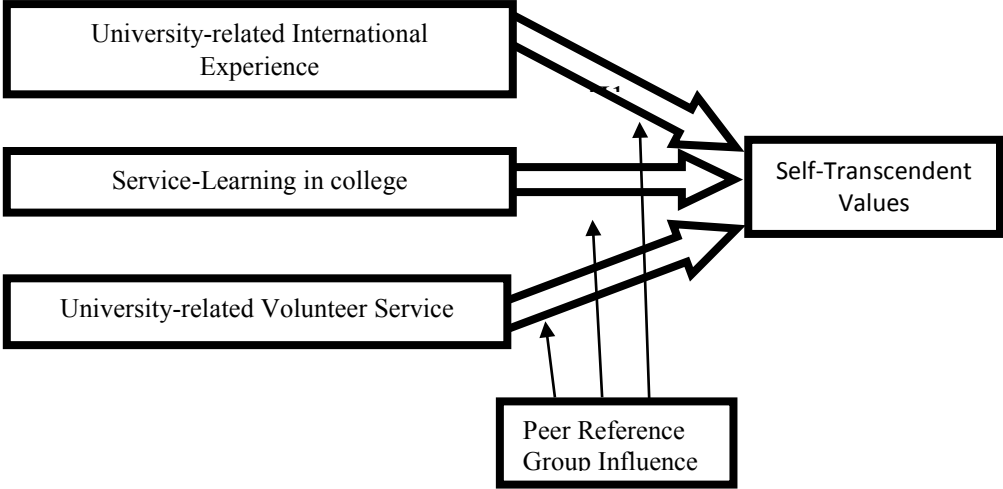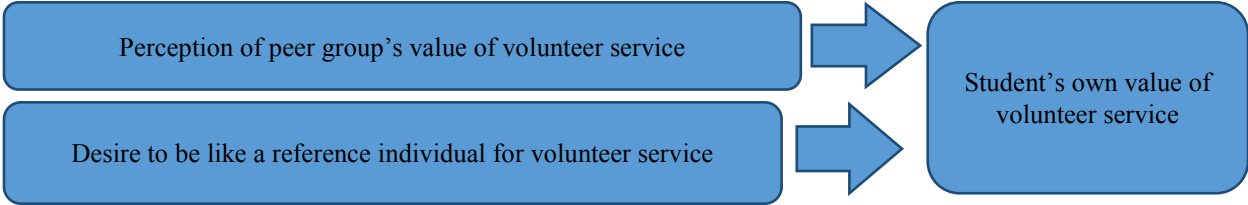| Ethical Objective	Definition	Source
Awareness of Shared Moral Norms	Awareness of basic universal moral ideals both within and across different cultures and societies that guide moral reasoning, behavior and moral systemic decisions	Garff and Agle
Awareness of Damaging Norms	Awareness of business, legal, and economic socialization and ideals that can have negative individual, and macro level impact.	Garff and Agle
Instrumental Morality	The ability to tum morality into a strategic asset and advantage	Rossouw 2002
Functional Moral Awareness	Awareness of the moral obligations, responsibilities, and common moral issues in student's particular functional areas of business	Garff and Agle
Moral Action	Not just the empowerment to act morally, but actually doing so	Garff and Agle
Moral Action Experience	To have experience engaging in moral action which experience can be drawn on in future moral encounters	Garff and Agle
Moral Awareness	Understanding the moral obligations, responsibilities, and common moral issues in business	Rossouw 2002
Moral Character	"Persisting in a moral task, having courage, over-coming fatigue and temptation, and implementing subroutines that serve a moral goal."	Armstrong, Ketz, and Owsen 2003
Moral Courage	The resolve or determination to act on moral convictions even when not comfortable or self-serving	Rossouw 2002
Moral Decision-Making	To make decisions by applying moral theories to specific issues	Rossouw 2002
Moral Desire	The ability to desire to act ethically, or the desire to gain the desire to act ethically	Garff and Agle
Moral Efficiency	The ability to translate and integrate positive ethical influences into organizational practices and processes (work)	Rossouw 2002
Moral Imagination	Envisaging multiple moral alternatives, perspectives and experiences beyond the immediate and obvious	Rossouw 2002
Moral Leadership	Awareness of leadership responsibility, leadership impact, both positive and negative, and the ability to provide moral vision and support	Rossouw 2002
Moral Long-Term Process Awareness	Awareness of the long-term process and goal of building and maintaining morality	Garff and Agle
Moral Motivation	"The degree of commitment to taking the moral course of action, valuing moral values over other values, and taking personal responsibility for moral outcomes."	Armstrong, Ketz, and Owsen 2003
Moral Persuasion Ability	The ability to persuade individuals, organizations, and institutions to adopt more sensitive ethical schemas or act according to predetermined minimum ethical expectations set by governing bodies, while respecting actor agency	Garff and Agle

Moral Reasoning	To independently compare, weigh and evaluate different ethical perspectives and chose one to follow	Rossouw 2002
Moral Sensitivity	To know, care for, empathize with, and commit to minimizing negative impact to stakeholders	Rossouw 2002
Moral Tolerance	The ability to endure moral ambiguity and to tolerate moral perspectives that disagree or differ from one's own	Rossouw 2002
Moral Understanding	Acquiring the vocabulary for business moral discourse by learning theories, frameworks, models and concepts	Rossouw 2002
Systemic Morality	The ability to discern and understand the special positive and negative implications of organizations on ethical behavior	Rossouw 2002

Table 2: Univariate Descriptive Statistics With the Means, Percentages, Standard Deviations, and Reliability Coefficients for Dependent and Independent Variables

Variable	Means / Percents	Standard Deviation	Reliability Coefficient [a]
Dependent Variable			
Self-transcendent values	3.95	0.5	0.86
Independent Variables			
University-related volunteer service	1.67	0.48	0.55
Percent that had a service-learning class in college	39	n/a	n/a
Percent that had university-related international experience	18	n/a	n/a
Percent over 23 years old	41	n/a	n/a
Percent women	15	n/a	n/a
Percent married	40	n/a	n/a
Percent Caucasian	89	n/a	n/a

Source: Survey of engineering students (N = 633)

[a] Using Cronbach's Alpha

Table 3: Self-transcendent Values by Involvement in University Activities

Self-Transcendent values	Total (N = 585)	University-related International Experience		Service-learning Class		University-related Volunteer Service Involvement			
		None (N = 501)	Some (N = 84)	No (N = 363)	Yes (N = 222)	None (N = 46)	Low (N = 162)	Moderate (N =176)	High (N = 199)
Low	184	32.3	26.2	34.2	27	45.7*	30.9*	31.3*	28.6*
Moderate	205	34.3	39.3	32.8	38.7	30.4*	38.2*	38*	31.2*
High	196	33.3	34.5	33	34.2	23.9*	30.9*	30.7*	40.2*

*Chi-square significant at p < .01 (two-sided test)

Table 4: Self-transcendent Values by Gender, Race, and Age

Self-Transcendent values	Total (N = 585)	Gender		Race		Age	
		Women (N = 86)	Men (N = 500)	White (N = 530)	Other (N = 55)	Under 24 years old (N = 348)	24 years old and older (N = 229)
Low	184	32.2	27	30.4	41.8	31.3	31.4
Moderate	205	34.2	40	35.7	29.1	35.6	34.1
High	196	33.6	32.9	34	29.1	33.1	34.5

 *Chi-square significant at p < .05 (two-sided test)

Table 5: Correlation and Basic Statistics

Correlations among variables used to test hypothesis and basic statistics

Variables [a]	1	2	3	4	5	6	7	8
Dependent Variable								
1. Self- transcendent values	1.00							
Independent Variables								
2. University-related Volunteer Service	0.15***	1.00						
3. Service-Learning in College	0.05	0.16***	1.00					
4. University-related International Experience	0.03	0.05	0.12**	1.00				
5. Age	0.04	0.09*	0.08*	0.16***	1.00			
6. Gender	-0.01	0.07	-0.03	0.09*	-0.22***	1.00		
7. Married	0.01	-0.13**	0.08*	0.06	0.44***	-0.08*	1.00	
8. Caucasian	0.04	0.04	0.04	-0.07	-0.07	-0.16***	-0.11**	1.00
Minimum	1.875	2	0	0	0	0	0	0
Maximum	4.5	20	1	1	1	1	1	1
Mean	3.29	5.92	0.34	0.14	0.40	0.15	0.40	0.89
Skewness	-0.14	0.96	0.46	2.09	0.43	1.94	0.40	-2.5
Standard Deviation	0.41	2.75	0.49	0.35	0.49	0.36	0.49	0.31

*p < .05, **p < .01, ***p< .001
Source: Survey of engineering students (N = 633)

Table 6: Multivariate Regression Results From a Series of Ordinary Least Squares Regression Models of Growth in Self-Transcendent Values From University-related Volunteer Service, Service-Learning, and International Experience

	Nested models							
	Model I		Model II		Model III		Model IV	
Variable	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Control Variables								
Age	0.05	0.04	0.06	0.04	0.06	0.04	0.05	0.04
Gender	0.19	0.05	0.002	0.04	0.002	0.04	-0.004	0.04
Married	-0.04	0.04	-0.03	0.03	-0.03	0.03	-0.03	0.03
Caucasian	0.06	0.06	0.05	0.06	0.05	0.06	0.05	0.06
Leverage Variables								
CooksD	-0.87*	0.09	-0.89*	0.09	-0.89*	0.09	-0.9*	0.09
Dfits	1.60*	0.14	1.60*	0.14	1.60*	0.14	1.65*	0.14
Independent Variables								
Volunteer Service			0.17*	0.03	0.17*	0.03	0.17*	0.03
Service-Learning					0.01	0.03	0.009	0.03
International experience							0.04	0.04

* p < .001 (two-sided test)
Source: Survey of engineering students (N = 633)

Table 7: Multivariate Regression Results with Moderator Variables

(1) Estimated coefficients from ordinary least squares regression models where growth of self-transcendent values from university-related volunteer service, service-learning, and international experience is moderated by the peer reference group

| | Models with moderator variables | | | | | |
| | Model V | | Model VI | | Model VII | |
Variable	Coeff.	s.e.	Coeff.	s.e.	Coeff.	s.e.
Control Variables						
Age	0.05	0.04	0.05	0.04	0.05	0.04
Gender	0.01	0.05	0.01	0.05	0.007	0.05
Married	-0.02	0.04	-0.001	0.05	-0.09	0.04
Caucasian	0.04	0.06	0.04	0.06	0.04	0.06
Leverage Variables						
CooksD	-0.9*	0.09	-0.9*	0.09	-0.9*	0.09
Dfits	1.68*	0.15	1.69*	0.15	1.68*	0.15
Independent Variables						
Volunteer Service	0.09*	0.18	0.16*	0.04	0.16*	0.04
Service-Learning	0.01	0.03	0.001	0.006	0.016	0.04
International experience	0.04	0.05	0.03	0.05	0.08	0.27
Moderator Variables						
Peer reference group for volunteer service	0.003	0.009				
Peer reference group for service-learning			0.008	0.009		
Peer reference group for university-related international experience					-0.002	0.01

* p < .001 (two-sided test)
Source: Survey of engineering students (N = 633)

Table 8: Ordinary Least Squared Regression of Growth of Self-Transcendent Values From the Desire to Learn About Locals While Traveling

Variable	Coeff.	s.e.
New Independent Variable		
Desire to learn about locals when traveling abroad	0.08*	0.02
Control Variables		
Age	0.03	0.04
Gender	-0.0003	0.05
Married	-0.02	0.04
Caucasian	0.09	0.08
Dfits	1.69*	0.15
CooksD	-0.9	0.1
Original Hypothesized Independent Variables		
Volunteer service	0.13*	0.04
Service-learning	-0.01	0.03
International experience	0.03	0.05

* p < .001 (two-sided test)

Table 9: Means and Standard Deviations of Desire to Learn About Locals by Full-Time Student Status

(1) T-test of full-time student status and desire to learn about locals

	Desire to Learn About Locals		
	N	Mean	Standard Deviation
Full-time student	560	4.2*	0.99
Not full-time student	48	3.7*	1.10

* p < .01 (two-sided test)

Table 10: Regression Results of Peer Group as the Antecedent of Volunteer Service

(1) Ordinary least squares regression of student's self-reported value of volunteer service from perceived value of volunteer service to peers and reference individual

Variables	Coeff.	s.e.
Independent Variables		
Perceived value of peers for volunteer Service	0.51*	0.05
Desire to be like reference individual for volunteer service	0.42*	0.12
Control Variables		
Age	0.3	0.18
Gender	-0.17	0.21
Married	-0.04	0.18
Caucasian	0.36	0.3

* p < .001 (two-sided test)