Chapter One

Introduction

Generally, leadership is viewed in a positive frame as the ability to influence and motivate others. In actuality, leadership can be ineffective and destructive based on the inherent power some leaders possess (Tierney, 2005). Scandals among the ranks of federal and corporate leaders have raised questions about the quality of leadership in America and prompted calls for more effective leadership (Cooper, Scandura, & Schriesheim, 2005).

For example, ineffective leadership and poor oversight is blamed for the mistreatment of prisoners at a U.S. prison in Iraq. Five thousand insurgents, common criminals and innocent individuals were all subjected to overcrowded cellblocks and aggressive guards who found pleasure in humiliating the prisoners. The inmate to guard ratio showed too few guards. As a result, inmates escaped and officers were unable to keep an adequate account. In addition, criminal abuses of the detainees occurred due to top commanders' inability to agree on who should run the cell blocks (Schrader, 2004).

Leadership was also salient in the recent indictment of Scooter Libby, the Vice-President's Chief of staff. He was charged with five counts of perjury, making false statements and obstruction of justice. This indictment of a national leader is the first to occur among White House aides in 135 years (CNN.com, 2005).

Corporate scandals are yet other examples where leadership is at issue. WorldCom, with $103.9 billion in assets, earned the dubious distinction of becoming the world's largest bankruptcy case in history.   By overstating profits by $3.8 billion, along with other fraudulent accounting practices, the firm's shareholders suffered significant financial losses (Akhigbe, Martin, & Whyte, 2005).

The Enron affair in 2001 was an illustration of a major financial scandal in which corporate executives engaged in illegal behaviors, presumably a result of a lack of accountability and an abuse of status. Mutual funds, savings accounts, and retirement plans of approximately 84 million Americans were affected as a result (Elliott, 2002; Hall, Blass, Ferris & Massengale, 2004).

These major national crises of leadership have prompted demands for a new breed of leaders. American society calls for leaders empowered with the ability to acknowledge the unique values of others, appreciate differences, and build and rebuild communities both nationally and internationally. Managing to remain connected with all aspects of society is a major task for the nation's leaders (Gardner, 1990; NetAidU.S., n.d.).

Increasing ineffectiveness among government leaders, escalating economic disparities and inequalities, corporate scandals and ethical violations, unstable race relations, and the shift from a national to a global economy, underscore the need for effective leadership (Heifetz, 1994; W. K. Kellogg Foundation, 1999). Indeed, leadership and leaders have become popular topics discussed in the international press (Husted, 1999).

"Leadership" and "leader" are terms that are difficult to demystify. Leadership is seen as a multifaceted interaction between the leader and the social and organizational environment (Fiedler, 1996). It is the process of persuading a person or group of people to pursue objectives held by the leader, or shared by the leader and his or her followers (Gardner, 1990). Like any other skill, leadership has to be learned and practiced (Komives, Lucas, & McMahon, 1998).

Similarly, a leader is one who exerts intentional influence over others to move toward a vision (Arminio, Carter, Jones, Kruger, Lucas, Washington, 2000). A leader can be anyone who serves as an effective social change agent, regardless of formal position; one who articulates a position of authority, and has an ability to persuade others (Astin & Astin, 2000; Woodard & Denton, 1988).

 Formal systems of higher education were founded, in part, to assist in training leaders and preparing them for service to the community (Brubacher & Ruby, 1997). Out of this philosophy came institutions like Harvard, Dartmouth, and William and Mary, the original colonial colleges. These institutions trained sons of wealthy, White men to be statesmen and clergy members (Lucas, 1994).

These men were looked upon as born leaders, as early leadership theories held the assumption that some people were natural leaders who possessed certain traits that others did not have. For example, the Great Man theory described leadership qualities as gifts that were bestowed on few individuals at birth. Many of the sons of the wealthy who were trained in the original colonial colleges were assumed to be Great Men (Yukl, 1998).

Today it is understood that leaders are not necessarily born and leadership traits and abilities can be intentionally developed (Astin & Astin, 2000). In response to this shift in leadership theory, in the 1980s colleges and universities began to establish specific leadership development programs and curricula for students. A belief that leadership can be taught through theories, experiences, and interactions replaced the earlier view that leaders were born with innate leadership abilities (Boccia, 1997).

The research on leadership can be conceptualized into three groups. Much of the leadership literature discusses higher education's role in creating generations of leaders. A second body of work describes various traits that effective leaders possess. Finally, significant attention has been paid to the idea of interpersonal influence, specifically how leaders work with others to help them move toward a vision (Bednarz, 2004; Clark, 2001; Kipnis, Schmidt, & Wilkinson, 1980).

One of the primary functions of higher education is to create environments that foster learning for future generations of leaders. Colleges and universities are charged with producing students capable of proactively developing positive settings for others and conducting business in ethically and responsible manners (Clark, 2001; Cooper, Scandura, & Schriesheim, 2005). Higher education institutions have worked to educate each new generation of leaders in business, government, science, medicine, law, and many other professions (Astin & Astin, 2000).

This education has helped effective leaders gain various traits that aid in their success. For instance, effective leaders must be anchored in integrity to elicit consistent results. Without integrity, there is little sense of what is right or wrong to guide behavior. Perspective tends to be closely associated with a leader's personal sense of integrity. Perspective and integrity together act as an internal compass that provides insight into decision-making, and the wisdom needed to avoid pitfalls and obstacles while conducting the business of an organization (Bednarz, 2004).

Honesty is another vital trait needed by successful leaders. Honest leaders tend to show unwavering devotion to principles and values. They rarely lose sight of this devotion simply to please others or fit another's expectations, and they do not

compromise what they know to be right. Honest leaders engage in proper actions and thoughts even if it means they have to give up personal gain (Bednarz, 2004).

Effective leaders should also display passion for their charge. Typically, passionate leaders believe strongly in what they stand for, and therefore possess a zeal for their organization's direction and purpose. They know who they are, what they are striving to do, where they want to go, and why they are performing a task (Bednarz, 2004).

Generally, leaders tend to be pragmatic in nature. They attempt to tailor their behavior to fit the situation they must address. Before making decisions, they try to understand where others stand and anticipate how various groups are likely to respond (Driver, 1977; Stewart, Hermann, & Hermann, 1989). Consequently, others' interests and expectations often shape the self-image of leaders (Hermann, 1988; Manley, 1969; Suedfeld & Wallace, 1995).

The ability to use interpersonal influence with others to move toward a vision is another vital trait that effective leaders must possess to be successful. Most leaders use a variation of interpersonal influential tactics to reach their goals. A few of these tactics include assertiveness (using a forceful manner to get what one wants); rationality (using information to make a logical argument supporting one's request); exchange (making an explicit offer to do something for another person in exchange for helping one reach his or her goals); and, coalitions (mobilizing others to help with persuading the targeted individual) (Kipnis, Schmidt, & Wilkinson, 1980).

These influence tactics are used by leaders for a number of reasons including managing the emotions of their followers. Occasionally, and for varying reasons, group

members' emotions interfere with performance and thereby hinder goal attainment. Effective leaders then use their abilities to instill confidence, optimism and faith in their followers, and convince them that a vision or other prescribed goal is attainable (Humphrey, 2002).

In groups, directing members toward shared understandings and agreements is important. This method of influence is also one of the key foundations of social control, an important aspect of effective leadership in government and industry (Friedkin & Johnsen, 1999; Hermann, Preston, Korany, & Shaw, 2001). Social control, as defined by classic sociological theory, refers to the continuous efforts within a group, to form, agree upon and implement collective courses of action (Janowitz, 1975).

Communication and influence between leaders and followers flow in both directions. Leaders are able to shape and are shaped by followers (Gardner, 1990). The interpersonal interactions between leaders and followers can influence leaders so much so that they change their opinions about various issues based on the opinions of others (Arminio, et al., 2000; Friedkin & Johnsen, 1999).

Conversely, leaders may be responsible for changing the opinions of those with whom they interact (Arminio, et al., 2000; Friedkin & Johnsen, 1999). Individuals learn what is right or wrong, good or bad through interactions with leaders (Woodard & Denton, 1988).

 Much of the learning that takes place in individuals begins during the college years, through physical, intellectual, social, and student-to-student interactions (Terry, 1992). Student-to-student interactions are defined by activities like: socializing with other students from different racial or ethnic groups, working on group projects for

classes, tutoring other students, discussing course content with other students, discussing racial or ethnic issues, participating in a campus protest, being elected to a student office, and socializing or being a member of a student organization (Astin, 1993).

The student-to-student interaction that takes place as college students become involved in student organizations contributes to their leadership skills, and enhances their development as college student leaders (SLs) (Cooper, Healy, Simpson, 1994). Like seasoned leaders, SLs are those who exert intentional influence over others to move toward a vision (Arminio, et al., 2000). On the college campus, SLs emerge and direct their peers in the implementation of policies, events and campus climate (Astin, 1984; Depp, 1993; Kuh, 1993; Kuh, 2000; Pascarella & Terenzini, 1991; Strange, 1996).

SLs are motivated individuals who enjoy working with people, interacting with others, and making friends. They attribute boosts in their personal development to the leadership roles they take on within the college environment. SLs take pride in their positions as campus leaders, and enjoy maintaining a strong connection with their organization and its members (Shertzer & Schuh, 2004).

Unlike non-student leaders (NSLs), college students who are disengaged, SLs report increased abilities in leading others, setting goals, making decisions, and using conflict resolution skills, as a result of their leadership activity (Cress, Astin, Zimmerman-Oster & Burkhardt, 2001). These abilities speak to higher education's efforts to teach leadership skills that empower students to lead lives as leaders beyond the campus setting (Astin & Astin, 2000).

Despite the enormous volume of scholarship on leadership aimed at describing the traits of effective leaders, there is still room to better understand specific aspects of

these individuals (Burns, 1978). Citizens expect their leaders to be committed to change for the common good. They look to them to incite change in government, business, communities, and the world (Meixner, n.d.; Zimmerman-Oster & Burkhardt, 1999). Understanding how leaders make choices in leading their organizations is still at issue (Burns, 1978).

Leaders are required to make choices on a regular basis in order to lead their organizations. These choices are often influenced by public opinion (McIntosh, Cacciola, Clermont & Keniry, 2001). Leaders' freedom of action is enhanced and their obstacles are more readily overcome if they have the support of public opinion. So understanding the opinion formation process, how leaders formulate their own opinions, how they inform the opinions of others, and how they use public opinion as a leadership tool, is important to understanding leaders (Gardner, 1990).

There are a number of factors that influence opinion formation. The opinion literature includes theories about how opinions are formed, what impacts change in opinion, and how opinion leaders influence personal opinions about various issues (Bryant & Thompson, 2002; Friedkin & Johnsen, 1990; Griswold, n.d.). In addition, much attention is paid to the role that public opinion plays in society, and how public opinion is seen as a source of power for many of the nation's leaders (Gardner, 1990).

The typical understanding of opinions is that they are verbal expressions of attitudes that influence behavior on various issues. Opinions help people know who they are and what they stand for, and help give meaning to the world around them. In addition, opinions serve as the medium for the expression of core feelings, beliefs and values (Woodard & Denton, 1988).

Opinion formation can be described in terms of a network paradigm with inputs, outputs and a process to link the two. Individual and group characteristics serve as the inputs, and settled opinions of individuals serve as the outputs. The inputs are transformed into outputs, through the opinion formation process that can be divided into time periods. During these time periods, the possibility of change in opinion takes place (Friedkin & Johnsen, 1990).

Changes in opinion can be conceptualized in terms of forces operating along a continuum. Social influences are designed to force fields induced by person A on to person B, and the strength of these forces is assumed to vary depending on the power of A over B. When person A expresses his or her opinion or argues for it in a manner that influences person B, the force field operating on person B pushes person B's position to one that more closely corresponds with person A's position along the continuum of opinion. The result is a change in opinion for person B, bringing him or her closer to person A (French, 1956).

However, people have their own unique personalities, intellectual and emotional characteristics, and perceptions of the world, and form their opinion based on individual personal factors. When individuals come into contact with others in their physical and social world, influences from others increase the potential of opinion change (Glynn, Herbst, O'Keefe, Shapiro, & Lindeman, 2004).

Because people tend to care about what others think regarding various issues, they form perceptions about what others believe. This process causes people to change their own opinions based on perceptions of others (Glynn, Herbst, O'Keefe, Shapiro, & Lindeman, 2004). The individuals who often use their knowledge about various topics to

influence change in others' opinions are typically known as opinion leaders (Griswold, n.d.).

Opinion leaders interact with others to share what they know about particular issues, primarily through interpersonal contact (Bryant & Thompson, 2002; Griswold, n.d.). They often have the strongest interests in particular issues. As a result, they hold positions within their communities that afford them unique competence regarding those topics (Griswold, n.d.). Opinion leaders also act as a source of social pressure on issues, and serve as a source of social support to strengthen choices made by citizens (Glock & Nicosia, 1966).

Opinion leaders also have a significant role in informing public opinion (Bryant & Thompson). Public opinion is more than merely responses to public opinion polls. It is a verbal expression of the culture, psychological processes, and social interactions of the people (Glynn, Herbst, O'Keefe, Shapiro, & Lindeman, 2004). In American society, public opinion is seen as a notable source of power. Leaders' freedom of action is enhanced and obstacles are surmountable if they have the support of public opinion (Gardner, 1990).

There are many public opinion process models that attempt to explain this phenomenon. One is Foote and Hart's (1953) Developmental Model that suggests that public opinion is formed through a sequence of stages, and is developmental in nature. The Developmental Model involves an individual or group moving through a decision-making process. By the end of that process, a final decision is made that is agreed upon by the group (Glynn, Herbst, O'Keefe, Shapiro, & Lindeman , 2004).

The Foote and Hart model describes the public opinion process as a sequential process that ultimately results in informed decisions and actions (Glynn, Herbst, O'Keefe, Shapiro, & Lindeman, 2004). To ensure that a societal view is represented, the presence of public opinion within the decision-making process is important for a nation's leaders and citizens at large (McIntosh, Cacciola, Clermont & Keniry, 2001).

Social Influence Network Theory is another example of how opinions are informed and/or changed, as a result of interactions with others. The theory was widely disseminated in 1991 but has been under development by social psychologists and mathematicians since the 1950s, starting with French's 1956 formal theory of social power (Friedkin & Johnsen, 1999).

Six fundamental assumptions make up the Social Influence Network Theory: Cognitive weighted averaging, which is based on the assumption that actors use weighted averaging of influences to form their revised opinions; Fixed social structure, which assumes that the social structure of the group of actors is fixed during the entire opinion formation process; Determinism, which suggests that the opinion changes in the group are completely determined based on the direct influence matrix, the susceptibility matrix, and group members' initial opinion vector; Continuance, which posits that the process of opinion formation in the group continues until all possible changes of opinion have occurred; Decomposability, which suggests that the opinion formation process is broken up into time periods; and, Simultaneity, which suggests that during each time period, simultaneous linear equations produce accurate predictions of all influence events that occur during that period (Friedkin & Johnsen, 1999).

Given these assumptions, Social Influence Network Theory posits that interpersonal influence occurs in groups and affects persons' attitudes and opinions on issues. Interpersonal influence also produces agreement where initially there was disagreement (Friedkin & Johnsen, 1999).

In summary, scandals in government (CNN.com, 2005; Schrader, 2004) and the corporate sector (Akhigbe, Martin, & Whyte, 2005; Elliott, 2002; Hall, Blass, Ferris & Massengale, 2004) have led to a crisis of confidence in the leadership of America. This has led to demands for stronger leadership and better prepared leaders (Gardner, 1990). Definitions of leadership (Astin & Astin, 2000; Fielder, 1996) and leaders (Bednarz, 2004; Gardner, 1990; Humphrey, 2002; Kipnis, Schmidt & Wilkinson, 1980) are elusive, but most scholars agree that the way leadership has been viewed has changed over time. Early theories that leaders were born (Yukl, 1998) have shifted to an assumption that leaders can be trained (Astin & Astin, 2000).

Much research has been conducted to explain the purpose of institutions of higher education and their work in training leaders for service to the community (Brubacher & Ruby, 1997). Various traits necessary for effective leadership have been discussed at length in the literature as well (Bednarz, 2004). These are the traits that leadership development programs in higher education seek to promote.

There is still a need to better understand other traits of leaders, however. For one, understanding how leaders make choices in leading their organizations is still at issue (Burns, 1978). Leaders are required to make choices on a regular basis and their choices are often influenced by opinion –both their own and the opinions of others (McIntosh, Cacciola, Clermont & Keniry, 2001).

Research on opinion formation has focused on what impacts change in opinion, and how opinion leaders influence personal opinions about various issues (Bryant & Thompson, 2002; Friedkin & Johnsen, 1990; Griswold, n.d.). In addition, attention has been given to the role that opinions of others play in shaping leaders' opinions (Gardner, 1990).

It would seem reasonable to suggest, therefore, that college student leaders would both influence others' opinions as well as be influenced by the opinions of others. No studies have looked at opinion change and college student leadership, however. It is that gap in the bodies of work on college student leaders and opinion change that this study addressed.

<center>Purpose Statement</center>

The purpose of this study was to explore the influence of student-student interactions on change of opinion among student leaders (SLs) and non-student leaders (NSLs). I sought to predict which discussions with students (those whose interests, philosophy of life or personal values, political opinions, religious beliefs, race or ethnic background, country of origin and family background were different from one's own), best explained change in opinion. Finally, I explored differences in interactions among SLs by level of involvement (low v. high).

The sample included student leaders (SLs) and non-student leaders (NSLs), who were identified as such based on their responses to items on the 2004 College Student Experiences Questionnaire (CSEQ) (Pace, 1984) about how often they attended certain activities on campus (i.e., a meeting of a campus club, organization, or student government group), or how often they managed or provided leadership for a club or

organization on or off the campus. For purposes of this study, SLs were defined as students who responded with "Very Often," "Often" or "Occasionally" to such CSEQ items and NSLs were defined as students responding "Never" to these items.

Interactions were defined by items on the CSEQ. Interactions referred to holding discussions with students whose interests, philosophy of life or personal values, political opinions, religious beliefs, family background and race or ethnic background, and country of origin were different from their own (Pace, 1984).

Change of opinion was measured by two final items on the CSEQ. One asked how frequently the respondent had influenced others to change their minds about an issue. The second asked participants how often they had been influenced by others to change their opinion.

<div align="center">Research Questions</div>

The present study ultimately explored three research questions concerning college student leaders:

1. What type of discussions best predict change of opinion among SLs?

    a) Discussions with students whose interests were very different from their own.

    b) Discussions with students whose philosophy of life or personal values were very different from their own.

    c) Discussions with students whose political opinions were very different from their own.

    d) Discussions with students whose religious beliefs were very different from their own.

e) Discussions with students whose race or ethnic background was different from their own.

f) Discussions with students who were from a different country from their own.

g) Discussions with students whose family background (economic, social) was different from their own.

2. What type of discussions best predict change of opinion among NSLs?

a) Discussions with students whose interests were very different from their own.

b) Discussions with students whose philosophy of life or personal values were very different from their own.

c) Discussions with students whose political opinions were very different from their own.

d) Discussions with students whose religious beliefs were very different from their own.

e) Discussions with students whose race or ethnic background was different from their own.

f) Discussions with students who were from a different country from their own.

g) Discussions with students whose family background (economic, social) was different from their own.

3. Are there differences by level of involvement (low v. high) among student leaders regarding the discussion variables (interests, philosophy of life or personal values,

political opinions, religious beliefs, race or ethnic background, country, and family background)?

Significance of the Study

This study was significant for future practice, research, and policy. In regards to practice, several constituencies might find value in the results. For example, the results provided student affairs professionals with data regarding student-to-student interactions that influence change in SLs' opinions. Student affairs professionals might incorporate the results in the design of their student leadership development programs.

SLs should also benefit from the findings of this study. The results provided them with data about the impact that interactions with diverse individuals could have on their own opinions. Strong leaders are those who are sensitive to the ideas of others, so students who consider themselves SLs may consider this information as they work toward becoming future leaders (Gurin, Dey, Hurtado, & Gurin, 2002).

Finally, administrators of various leadership development programs in student activities departments, academic departments, as well as student military training programs might be interested in this study. This study provided details about the impact that student-to-student interactions had on opinion formation and change for SLs. Administrators who focus on the development of future opinion makers might find value in this research as they develop and improve their programs.

The present research also served as a catalyst for future studies. I explored the influence of student-to-student interactions on change in SLs' opinions. Future studies might explore student-to-student interactions and the impact of change in SLs' ethical

principles (Gardner, 1990; NetAid, n.d.). Such research would expand what is known about changing opinions and attitudes.

This study used a national data set to explore student-to-student interactions but did not disaggregate the data in any way. Additional studies might look at differences in opinion formation by SLs at different institutional types, or by race, gender and/or other demographics of SLs. These studies might increase what is known about the influence of student-student interactions on change in SLs' opinions based on their specific characteristics.

This study can also be used to prompt future research to add to the literature on opinion formation. I examined the influence of discussions with students who were different on change in opinion. Future studies might focus on the influence that civic duty has on change in opinion using the same groupings of participants as this study.

SLs' class standing (e.g. sophomore, junior) was not a factor in this study. Additional studies might look at whether opinion formation or change differs based on SL class standing. Such a study would supply more detailed information about whether opinion change is impacted by SLs' matriculation through college.

Finally, the study was significant in terms of future policy. The results provided insight for policymakers in terms of the impact that student-to-student interactions has on change in opinion. Policymakers might use the data when considering policies and procedures regarding how a racially and ethnically diverse student population influences a campus.

This study may be helpful for policymakers interested in improving leadership programs. The findings provided information on the influence of student-to-student

interactions on SLs' opinion change. These data might be used to assess current policies regarding leadership training.

Finally, this study was significant for policymakers concerned with the effectiveness of co-curricular programs. These results provided insight regarding interactions that influence change in opinion among SLs. These data might be used by policymakers when considering polices related to co-curricular settings that intentionally encourage such interactions among students.

<div align="center">Delimitations</div>

As with all research, the present study had some initial delimitations. The first involved the dataset used in the study. This study was restricted to selected variables defined by items drawn from a sub-set of a national dataset. It is possible that additional variables could help explain the variance in student leader change in opinion.

Second, the manner in which the data were collected for the study may have posed a delimitation. Participants were asked to respond to items as written on the CSEQ (CSEQ, 2004). They may have misinterpreted items and that may have skewed the findings in some unforeseen manner.

Finally, the data for this study were based on self-reported responses. If participants were not candid in their responses, the results might have been influenced.

Despite these initial delimitations, the study was important because understanding opinion change for SLs is an area that has been neglected in the literature. The research provided an opportunity for educators and policymakers to learn more about what influences SLs' opinions. The present study provides a framework for future studies that explore SLs.

Organization of the Study

The present study is organized around five chapters. Chapter One introduced the topic of the study, the research questions, and the significance of the study. The second chapter reviews the literature that is relevant to the study. Chapter Three describes the methodology that was employed, including the sampling techniques and the procedures used to collect and analyze the data. The fourth chapter describes the results of the study and the final chapter discusses those results and their implications for future practice, research and policy.

Chapter Two

Literature Review

This study was designed to address college student leaders' (SLs') opinion formation. Interactions with students that influence change in opinion were explored. The study also sought to compare differences between student leaders and non-student leaders (NSLs), as well as predict the type of discussions that best predict change of opinion among SLs and NSLs.

Three bodies of literature were relevant. The first major section examines the research on opinion formation. Two groups of studies emerged in this search: how opinions are expressed and the social influence network theory. The second body of literature involved SLs and NSLs respectively. This review focused on various aspects of the college experience for these students. To fully explore opinion formation and its relevance to student-to-student interactions for SLs, it was also necessary to examine a third body of literature involving the influence of student-to-student interactions. Four groups of studies were addressed: academic outcomes, non-academic outcomes, interactions with others who are different from self in general, and interactions with others from different races and ethnic backgrounds. This literature review is organized around these three major categories and their respective subtopics.

Literature on Opinion Formation

Research methodology and quantification in the social sciences that emerged during the latter part of the 19th century led to studies investigating opinion formation (Aiken, 2002). Much of the opinion literature today relates to how opinions are expressed and the influence of interactions on opinion change.

Opinion Expression

The literature that discusses how opinions are viewed focuses on whether what is being measured is actually opinion and not something else. This is because it is not uncommon to find literature that refers to values, beliefs and attitudes when discussing opinions (Rounce, 2004).

Some literature posits that opinion formation and expression are detailed processes that involve more than simply accepting or rejecting others' opinions. Rather, individuals form opinions within complex social environments in which influential opinions are occasionally in disagreement. Individuals also face situations where their opinions are subject to change (Friedkin & Johnsen, 1990).

Other literature measures opinion formation via the idea that individuals send mixed messages about what they want to see leaders doing for society. Researchers suggest that individuals hold opinions that are contingent upon the context in which they are given. An opinion expressed in one instance may not necessarily be the same as what is expressed in another instance. Individual opinions may be expressed that seem irreconcilable to researchers but make sense to the individual. The manner in which individuals work things through in their minds can vary from subject to subject, can be influenced by personal values, and can be affected by assumptions that have developed based on past experiences (Cantril & Davis, 1999).

Social Influence Network Theory

Early work on public opinion formation suggested that opinions may change over time, and may not always be consistent (Bryce, 1888; Converse, 1964; Korzi, 2000; Lippmann, 1965; Lowell, 1969). They may change based on how questions are asked or

framed, or simply based on what is happening in the world (Rounce, 2004). This notion

prompted additional studies that looked at opinion formation and interpersonal influence.

A key foundation of individuals' socialization, identity and decision-making

abilities is the process of interpersonal influence. This process impacts individuals'

attitudes and opinions and is important for those who attempt to shape their situations and

modify the attitudes and opinions of significant others with whom they interact. In

groups, shared understandings and agreements that define the culture of the group and

frame the collective activities of its members may result from the influence process

(Friedkin & Johnsen, 1999).

Mathematical, sociological, scientific, and psychological views suggest that

interpersonal influence activity impacts participants' initial opinion. Friedkin and

Johnsen (1999) posit that the Social Influence Network Theory, for example, implies that

opinions may be changed and/or informed as a result of interactions with others. The

theory was developed to address instances when there are individual differences in

interpersonal influences and opinions, and considers special cases in which individual

differences are constrained.

To test the theory, scientific and psychological elements of the model were

introduced. The scientific aspect involved six fundamental assumptions and the

psychological portion involved three small groups of studies testing issue-resolution

situations (Friedkin & Johnsen, 1999).

The scientific studies (Friedkin & Johnsen, 1990) revealed six fundamental

assumptions associated with the Social Influence Network Theory: cognitive weighted

averaging, fixed social structure, determinism, continuance, decomposability and simultaneity. Each of the concepts is considered part of the model's process assumptions.

The cognitive weighted averaging assumption suggests that actors develop revised opinions through a form of weighted averaging of all of the individual influences involved. As actors consider repeated responses indicating possible changes in opinion on an issue, flows of interpersonal influence are established (Friedkin & Johnsen, 1999).

The fixed social structure consists of the set of actors, the direct influence network among them, the susceptibilities of the actors to interpersonal influence, and the initial opinions of the actors. The assumption is that the social structure of the group of actors is fixed during the entire opinion formation process (Friedkin & Johnsen, 1999).

The determinism assumption considers what opinion changes in the group are based on. It suggests that the direct influence matrix, the susceptibility matrix, and the group members' initial opinion vector all impact opinion changes (Friedkin & Johnsen, 1999).

The continuance assumption discusses the continuing process of opinion formation. It posits that opinion formation in a group continues until all possible changes of opinion that could occur have taken place (Friedkin & Johnsen, 1999).

The last two assumptions, decomposability and simultaneity, deal with time periods in which opinion formation takes place. Decomposability simply states that opinion formation is broken up into time periods, and simultaneity suggests that during each time period, simultaneous linear equations produce predictions of each influence event that occurs during that period (Friedkin & Johnsen, 1999).

These assumptions address special cases that take place in group settings, in which individual differences are constrained. Using mathematical formulas to calculate group members' opinions, special cases involved the following situations: opinions settling on the mean of group members' initial opinions; compromised opinions different from the mean of initial opinions; opinions settling on an initial opinion of one group member; and, opinions settling on altered opinions but failing to form a consensus. Based on the structural context, each special case involves a single process of interpersonal influence resulting in different outcomes. Since all of these outcomes are frequent, the authors saw the need to examine the predictive accuracy of the Social Influence Network Theory by conducting studies encompassing three of the four situations (Friedkin & Johnsen, 1999).

 Three small groups of studies involving issue-resolution were conducted. These studies allowed the authors to assess the psychological aspect of the theory in groups of dyads, triads, and tetrads (Friedkin & Johnsen, 1999).

The studies were designed to reflect actors' initial opinions, final opinions, and relative interpersonal influences on an issue. Within each of the three studies, the same process was followed. Each group member privately recorded his/her initial opinion on an issue; discussed the issue over a telephone network in which all or some pairs of members were allowed to communicate; after a specified time period, or upon reaching group consensus or deadlock, group members privately recorded their final opinions on the issue and offered comments about the relative interpersonal influences of the other group members upon their final opinions (Friedkin & Johnsen, 1999).

The first study, involving the tetrads, consisted of 50 groups of college students who were asked to attempt to resolve initial differences of opinion on various issues they had been asked to consider. Participants were randomly assigned to groups within one of five different networks of interpersonal communication. Each group member was placed in a private room and isolated from the other group members. Members were given five issues to consider: sports, surgery, school, and two issues regarding monetary rewards. They were asked to form and record an initial opinion on the issue for consideration (Friedkin & Johnsen, 1999).

Group members were then asked to discuss their opinions with one another via a telephone system, and were advised that attaining a consensus on the issue was desirable. After a specified amount of time after either reaching a consensus or deadlocking, group members were asked to record their final opinions on the issue and provide estimates of the relative interpersonal influences of the other group members in shaping their own final opinions (Friedkin & Johnsen, 1999).

The second group, which involved triads, consisted of 32 groups of college students. Each group discussed three issues: sports, surgery, and school. One half of the triads were advised that attaining consensus was desirable and that most groups had been able to reach a consensus. The other half was advised that any outcome was sufficient. Participants' final opinions were analyzed (Friedkin & Johnsen, 1999).

Last, the dyads study involved 36 pairs of students. Participants were given up to 30 minutes to discuss an issue. Each participant was asked to form and record an initial opinion on the surgery and school issues that were involved in the tetrads and triads studies. Again, half of the pairs were advised that attaining consensus was desirable and

that most groups had been able to reach a consensus. The other half was advised that any outcome was sufficient. Relative interpersonal influence was analyzed (Friedkin & Johnsen, 1999).

Results from these studies support the contention that the Social Influence Network Theory predicts group members' initial opinions and their mean final opinions with a high degree of accuracy. In the case of consensus, group outcomes are predicted. In the case of disagreement within the group, mean opinions of all group members are predicted (Friedkin & Johnsen, 1999).

Results also suggest group members' opinions converge to the mean of their initial opinions, and that in an issue-resolution situation, participants' susceptibility to interpersonal influence is associated with their own subjective experiences of interpersonal influence. In addition, expectations of reaching a consensus are associated with the time participants believe they have to reach an agreement (Friedkin & Johnsen, 1999).

Last, though a high degree of accuracy is associated with the Social Influence Network Theory's prediction of the mean final opinion of group members, there was one surprise. The settled opinions of participants are generally weighted averages of each group members' initial opinion, so the expectation is that settled opinions will be in the range of the group's initial opinions on an issue. For the dyad study however, a significant number of final opinions fell outside of the range of group members' initial opinions. This result is infrequent but does occur occasionally and is not explained by the theory (Friedkin & Johnsen, 1999).

Student Leaders & Non-Student Leaders

Based on the results from the studies used to test the Social Influence Network Theory, it seemed fitting to use this framework to understand the influence of student-to-student interactions on student leader change in opinion. The literature on student leaders and non-student leaders (NSLs) has focused on various elements of the college student experience. For SLs, research has offered descriptions of SLs, measured skill development that occurs as a result of taking on leadership roles in student government and other student organizations, the importance of involvement, frequency of involvement, and participation rates of African American SLs. For NSLs, literature is generally focused on the effects of being disengaged in college, and the psychosocial outcomes associated with lower levels of involvement.

Student Leaders

The research suggests that SLs believe only certain people can be leaders. Most feel that leaders are special people who are often born with their unique qualities. They typically come from environments that have helped them build their confidence, and they are accustomed to having support from others. SLs generally feel empowered and are continuously presented with opportunities to perform in leadership roles (Shertzer & Schuh, 2004).

In addition, SLs see the leadership phenomenon as positional: specifically, leadership involves power and influence. From the SL perspective, leadership is something that an individual person does or accomplishes (Shertzer & Schuh, 2004).

Participation in student government is one common way in which SLs assume a visible leadership role on college campuses. Kuh and Lund (1994) found that students

participating in student government experience significant gains in skills such as organizing, planning, managing, and decision making. Participation in student government also has both direct and indirect influences on student learning and personal development. Student government work involves students learning to work with, through, and for people who are different from or similar to themselves. As a result, SLs are more likely to engage in other activities that contribute to their learning and personal development, including interacting with people from different backgrounds. Other skills that are developed as a result of student government experience include an understanding and appreciation of fundamental organizational structures and processes, experience with team work and group process, writing, and oral and visual communication skills.

Increased participation in community and civic organizations is related to the leadership positions held by SLs in student organizations. Findings from a study that examined the influence holding a leadership position has on the lives of SLs up to 30 years after graduation revealed that students remain aware and become involved in community and political activities even after their leadership terms end (Schuh & Laverty, 1983). Continued organizational involvement and continued interactions with peers long after graduation is also associated with involvement in college student organizations (Montelongo, 2002). SLs' continued involvement in student organizations produces informed citizens who regularly and actively address issues that are important to them. Community involvement is viewed in a positive light and SLs see their involvement as directly affecting their leadership skills (Schuh & Laverty, 1983).

There is also literature that discusses low participation rates in leadership opportunities among African American students at predominately White institutions

(PWIs). Woodard and Sims (2000) found that low participation among this population on these campuses can be attributed to a number of climate issues. For example, White faculty at PWIs view African American students differently, provide less consistent reinforcement and have poor communication with this group (Sedlacek, 1987). In addition, many African American students experience a sense of social alienation, are less likely to have personal contacts with others on campus, and become integrated into the social systems within the institution less successfully than majority students (James, 1998).

As late as the 1970s, many African American students experienced direct acts of social alienation on the campuses of PWIs, and still today, in many indirect, nonviolent and subtle ways, they continue to be challenged by demeaning and damaging experiences. The chilly climate is expressed in many African American SLs' statements that they feel increasingly like outsiders, isolated and unwelcomed on the campuses of predominantly White institutions (James, 1998).

In addition, some African American SLs do not consider themselves leaders. In fact, some resent the term "leader" being used to describe them because they feel that it separates them from other students in their ethnic group. For some African American students, being a leader means being a part of the so-called "enemy," no longer separated from the oppressor or an oppressive system. Being a leader suggests to some students that they have bought into the system that has oppressed their racial group, thus alienates them from their peers. Being a leader can become a burden (Arminio et al., 2000).

Finally, frequency of involvement for SLs in general has also been examined. Participation and membership within student organizations provides college students with

many opportunities to have a significant number of interactions with other students. The frequency of interactions has been supported by the amount of time a student spends in college organizations. The amount of time spent interacting with other students within student organizations influences students' overall satisfaction with college (Astin, 1993a).

Non-Student Leaders

College students who choose not to engage in organized student activities, student organizations, and other co-curricular activities are considered NSLs (Cress, Astin, Zimmerman-Oster & Burkhardt, 2001). A small body of research has examined this group of students and, generally, outcomes for NSLs have not been as positive as they have been for SLs.

Those who choose not to get involved in campus activities have a more difficult time making educational, career, and lifestyle plans (Erwin, 1983; Williams & Winston, 1985). They also tend to demonstrate less confidence, lack of interest in leadership, perceive a deficiency in their leadership qualities, and believe they have fewer opportunities to lead than SLs (Shertzer & Schuh, 2004).

Using the Student Development Task Inventory (Winston & Miller, 1987) to study differences in developmental task achievement, Williams and Winston (1985) observed students who chose not to become involved (NSLs) versus those who chose to be involved (SLs). Findings suggest that NSLs could be developmentally less mature than SLs as a result of their non-involvement. It is equally plausible, however, that less mature students are simply less involved on campus.

Even before college, there is evidence that NSLs achieve lower outcomes as a result of their reduced levels of involvement. Cognitive development among NSLs who choose not to participate in organizations while in high school tends to be lower than that of their SL counterparts. Erwin (1983) found that students move from a simple level of dualism to a more intricate level of relativism (Perry, 1968). Those who are not members of student organizations in high school display lower levels of cognitive development than SLs who choose to participate in student organizations.

With low involvement, NSLs continue to display low levels of cognitive development once enrolled in college. Despite colleges' and universities' efforts to influence students with various programs, lower levels of involvement inhibit development among NSLs (Kuh, 1995).

The Influence of Student-to-Student Interactions

Colleges and universities influence their students in a number of ways. For example, formal academic programs are designed to promote student learning and development in specific areas (Stark & Lattuca, 1997) or through formal and informal contact with faculty members. During these interactions, some level of influence occurs for many college students (Terenzini, Pascarella, & Blimling, 1996).

Students are not influenced only by academic programs or contact with faculty. They are also influenced through various student-to-student interactions that take place inside and outside of the classroom (Terenzini, Pascarella, & Blimling, 1996).

A consistent body of research suggests that the cognitive growth and intellectual development experienced by students while in college is a reflection of the role that their peers play in their lives. In fact, some research suggests that interactions with peers may

be an influence equal to or greater than formal classroom experiences (Astin, 1993a; Terenzini et al., 1995; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1994).

Student-to-student interactions are almost always beneficial to students when they involve educational or intellectual activities or topics (Terenzini, Pascarella, & Blimling, 1996). Astin (1993) suggests that student-to-student interactions are the single most important source of influence on most college campuses and generally influence an extensive range of college outcomes, both academic and non-academic.

Academic Outcomes

Academic outcomes experienced by students have varied. There is research that suggests that student-to-student interactions influence positive outcomes on writing and thinking skills, understanding the arts and humanities, and reading comprehension and mathematics (Whitt, Edison, Pascarella, Nora, & Terenzini, 1999a). Other research suggests that student-to-student interactions, like peer teaching or tutoring, influence student learning (Annis, 1983; Astin, 1993a; Bargh & Schul, 1980; Benware & Deci, 1984; Goldschmidt & Goldschmidt, 1976).   In this respect, student involvement in the learning process is enhanced and content mastery is increased. When students tutor their peers, their grade point averages, analytical and problem-solving skills, and GRE-Quantitative scores are positively influenced (Astin, 1993a).

Similarly, student-to-student interactions in the form of peer counseling influence academic outcomes for students. In a cross-institutional study, peer counseling programs compared the performance of students (counselees) involved in the program to a control group of students (i.e., students with similar pre-college enrollment characteristics for whom peer counselors were not provided). Students who participate in peer counseling

programs show higher rates of achievement in regards to grade point average, than comparable groups of students who do not participate in the peer counseling programs (Guon, 1988).

The research that discusses cognitive outcomes has looked at student-to-student interactions and influences on thinking and writing skills. Students at 23 colleges and universities participated in the National Study of Student Learning (NSSL), a longitudinal examination of the factors that influence learning and cognitive development in college. Course-related and non-course related activities involving student-to-student interactions that occurred inside and outside of the classroom were assessed (Whitt, Edison, Pascarella, Nora, & Terenzini, 1999).

Participants completed the NSSL pre-college survey, as well as Form 88A of the Collegiate Assessment of Academic Proficiency (CAAP), an instrument used to assess selected general skill gains typically acquired by students during the first two years of college. Results demonstrated that the more students interact with peers, the greater the cognitive growth (Whitt, Edison, Pascarella, Nora, & Terenzini, 1999).

Student-to-student interactions also influence outcomes within on-line environments. In one study, 228 students enrolled in on-line learning classes at six American and one Canadian institution. Communications were conducted through computer-mediated conferencing (CMC), a technique that promotes adult learning and encourages students to reflect, share experiences and interpretations, synthesize and apply content in group learning situations. Using structural equation modeling, a relationship model involving peer interactions and learning outcomes was tested. Student-to-student interactions influence self-reported learning and learner satisfaction (LaPointe, 2003).

Non-Academic Outcomes

The literature on student outcomes suggests that students also experience non-academic outcomes as a result of student-to-student interactions. When asked which aspects of the college experience were most influential in promoting their learning and development, alumni overwhelmingly state that their most significant learning took place outside of the classroom, and was heavily influenced by the interactions they had with peers (Marchese, 1990; Murphy, 1989).

Outcomes associated with involvement in student organizations and clubs is examined in the literature. These organizations serve key developmental functions, provide opportunities for personal growth, promote social responsibility, and offer venues for socialization and development of a sense of community (Winniford, Carpenter, & Grider 1995). Student-to-student interactions within student organizations influence the development of leadership skills more than any other aspect of the college student experience (Astin, 1993a). These interactions influence students' aspirations and goals for college (Astin, 1993a; Pascarella & Terenzini, 1991).

Data collected over a 25-year period involving a national sample of over 500,000 students from 1,300 institutions of all types, revealed more evidence supporting the influence of student-to-student interactions on leadership skills. Student change (i.e., intellectual, emotional, attitudinal, social) was tracked between college admission and graduation. Students who interacted most frequently with peers were more likely to develop leadership qualities than students who chose to interact with peers less frequently (Astin, 1993a).

Other research suggests that student learning and personal development are often influenced by student-to-student interactions outside of the classroom. One hundred forty-nine seniors from 12 institutions were interviewed about interpersonal relations, cultural differences, academics and other topics. Self-awareness (self-examination, spirituality), interpersonal and practical competence and critical thinking are all associated with student-to-student interactions (Kuh, 1993).

The type of institution also seems to have some impact on the gains students experience through student interactions. These interactions influence students' ability to develop cognitive complexity and interpersonal competence at independent colleges. Using the involvement principle and the impact model of assessing changes associated with college attendance, seniors from 12 institutions were interviewed about their college activities, events, and interactions with other students. Researchers sought to identify whether the types of out-of-class experiences connected with various outcomes were associated with different types of institutions (Kuh, 1995).

Student-to-student interactions at different types of institutions influence the development of interpersonal competence, humanitarianism, and cognitive complexity. Developmental gains are more frequently influenced by peer interaction at independent colleges than at state institutions (Kuh, 1995).

 A similar study examined the influence of student-to-student interactions on participation in community and civic organizations. SLs from three institutions holding leadership positions in student government, fraternities, sororities, and campus newspapers were a part of the sample. Student-to-student interactions within student

organizations positively influence participation in community and civic organizations, even after terms as college student organization leaders end (Schuh & Laverty, 1983).

The influence of student-to-student interactions on citizenship development was examined using results from over 27,000 freshmen who completed the Cooperative Institutional Research Program (CIRP) freshman survey (Sax & Astin, 1993). Citizenship encompassed various factors. Social activism, leadership, cultural awareness, commitment to environmental involvement, commitment to racial understanding, belief that individuals can change society, tutoring others, and participating in campus demonstrations and voting, were all considered (Bowen, 1977).   Student-to-student interactions positively influence each area of citizenship in some manner (Sax & Astin, 1993).

Interactions with Others who are Different from Oneself

A small body of literature is devoted to student-to-student interactions with others who are different from self. Students attending campuses today are an ethnically, economically, religiously, and politically diverse group. Many of the changes that occur in students during the college years are influenced by the characteristics of their peers (HERI, 2005; Hurtado, Enberg, Ponjuan, & Landreman, 2002; Saddlemire, 1996).

Studies about the college experiences that students have and the influence of those experiences on attitudes and orientations are varied, and involve controls for a variety of characteristics such as gender, race, socioeconomic status, and values (Pascarella & Terenzini, 2005). Data from the National Study of Student Learning revealed that discussions with peers whose personal values, political beliefs, religious beliefs, or

national origin were different from one's own, influenced critical thinking skills for third-year students (Prendergast, 1998).

Even non-traditional students seem to experience outcomes which suggest that attitudes and values are influenced when students interact with others who are different from themselves. The Community College Student Experiences Questionnaire (CCSEQ) was administered to a sample of 1,765 students enrolled in a cross-section of classes. The more extensive student interactions are with others different from themselves in regards to age, philosophy of life, political and religious beliefs, and ethnicity, the greater the influence on becoming more familiar with different philosophies, cultures, and ways of living. In addition, greater progress is made toward understanding other people and more effort is placed on getting along with different kinds of people (Friedlander & MacDougall, 1992).

Race and Ethnic Background

Though various characteristics such as differing political opinions, religious opinions and philosophies of life can be found among students on college campuses, much of the available research involves student-to-student interactions with others from different racial and ethnic backgrounds. Given the lack of ethnic awareness and understanding with which many students matriculate, it is reasonable to expect that the experiences they have while in college play some role in shaping their attitudes toward members of other racial or ethnic backgrounds (Hurtado, Enberg, Ponjuan, & Landreman, 2002; Saddlemire, 1996). In fact, Kuh (1995) suggests that interactions with peers from different cultural backgrounds are powerful out-of-class experiences. These

interactions have positive influences on various aspects of students' development, particularly on cognitive and personal development.

Interracial interactions tend to take the form of discussing racial and ethnic issues with students from different racial/ethnic groups. These discussions seem to influence students' overall academic development, gains in general knowledge, critical thinking, analytical, and problem-solving skills (Astin, 1993b; Kuh, 1995). Overall academic development is enhanced, students gain knowledge in specific disciplines, and their critical thinking skills are improved when such discussions occur (Astin, 1993a; Terenzini, Springer, Pascarella, & Nora, 1994).

Evidence of outcomes that take place due to interracial interactions can be found when examining the influence of student-to-student interactions on reflective thinking. Results from a study using the Reasoning about Current Issues Test suggest that reflective thinking is significantly and positively related to having discussions with students whose race is different from one's own (Kitchener, Wood, & Jensen, 2000).

Other outcomes were found in a study of over 13,000 White students at 159 institutions who were interviewed to determine attitudes toward racism. These participants had interacted with students from other racial/ethnic groups in various situations. For example, they had frequent discussions about racial or ethnic issues, attended racial awareness workshops, participated in campus demonstrations, enrolled in ethnic studies courses (whether required or not), and participated in discussions of political or social issues. Student-to-student interactions with others different from self tend to influence students' interest in promoting racial understanding, even four years after entering college (Milem, 1993).

Openness to diversity and challenge is also influenced by student-to-student interactions with peers from different racial /ethnic backgrounds. Data from 3,331 students who took the Collegiate Assessment of Academic Proficiency (CAAP) revealed that student-to-student interactions influence growth and development. Openness to diversity and challenge at the end of their first year is positively influenced by interracial student interactions (Pascarella, Edison, Nora, Hagedorn, & Terenzin, 1996).

Along the same lines, survey data were collected from 597 undergraduate students in three residence halls at a PWI in the U.S. The survey was designed to examine the influence of students' participation in cross-group interactions on their motivation to reduce their own prejudices, as well promote inclusion and social justice. Interactions with diverse peers, participation in diversity-related courses, and activities inside and outside residence halls, challenge students'own prejudices and likely discriminatory behavior against stigmatized groups (i.e., refusing to participate in jokes that are derogatory to any social group). These interactions influence students to become involved in activities that challenge exclusionary practices and social injustice like getting together with others to fight discrimination, and promoting inclusion and social justice (Ximena, Williams, & Berger, 2005).

In summary, the research on opinion formation is limited, but the literature that exists suggests that opinions may not be consistent and may change over time (Bryce, 1888; Converse, 1964; Korzi, 2000; Lippmann, 1965; Lowell, 1969) because of factors like interpersonal influence, which impacts opinion formation in various ways (Friedkin & Jensen, 1999). This research includes literature about how opinions are generally expressed, (Aiken, 2002, Rounce, 2004; Cantril & Davis, 1999; Friedkin & Jensen, 1999)

as well as scientific studies and psychological views on opinion formation and change (Friedkin & Jensen, 1999).

The research regarding SLs has focused on various descriptions of college student leaders (Shertzer & Schuh, 2004), skill development as a result of taking on leadership in student government and other student organizations (Kuh & Lund, 1994; Schuh & Laverty, 1983; Montelongo, 2002), participation rates of African American SLs (Armino et al., 2000; James, 1988; Sedlacek, 1987; Woodard & Sims, 2000), and frequency of involvement (Astin, 1993a). The research on NSLs focuses on the effects of being disengaged in college, and the various outcomes associated with lower levels of involvement (Cress, Astin, Zimmerman-Oster & Burkhardt, 2001; Erwin, 1983; Kuh, 1995; Perry, 1968; Shertzer & Schuh, 2004; Williams & Winston, 1985).

Last, the research on student-to-student interactions focuses on positive academic and non-academic outcomes that result from these interactions. Academic outcomes include enhanced student learning (Annis, 1983; Astin, 1993a; Bargh & Schul, 1980; Benware & Deci, 1984; Goldschmidt & Goldschmidt, 1976), improved grade point average, enhanced analytical and problem-solving skills (Astin, 1993a; Guon, 1988), increased GRE scores (Astin, 1993a), improved writing and thinking skills (Whitt, Edison, Pascarella, Nora, & Terenzin, 1999a), greater cognitive growth (Whitt, Edison, Pascarella, Nora, & Terenzini, 1999), and increased self-reported learning and learner satisfaction (LaPointe, 2003).

Several non-academic outcomes are positively influenced as well. Influences based on student-to-student interactions include: development of leadership skills (Astin, 1993a), students' aspirations and goals for college (Astin, 1993a; Pascarella & Terenzini,

1991), self-awareness, interpersonal and practical competence, critical thinking (Kuh, 1993, 1995), humanitarianism and cognitive complexity (Kuh, 1995), and participation in community and civic organizations even after college student organization positions end (Schuh & Lavery, 1983), as well as citizenship (Sax & Astin, 1993).

The literature that addresses student-to-student interactions with others who are different from oneself is limited to research on peer interactions with others from different races and ethnic backgrounds. This research suggests that interactions influence cognitive and personal development (Kuh, 1995), students' overall academic development, gains in general knowledge, critical thinking, analytical and problem solving skills (Astin, 1993a; Kuh, 1995), reflective thinking (Kitchener, Wood, & Jensen, 2000), interests in promoting racial understandings even after college (Milem, 1993), openness to diversity (Pascarella, Edision, Nora, Hagedorn, & Terenzini, 1996), and students' interests in challenging exclusionary practices and social injustices (Ximena, Williams, & Berger, 2005).

A small body of research discusses student interactions with others who differ based on personal values, political beliefs, religious beliefs, national origin, age, and philosophy of life. This research indicates that student-to-student interactions influence attitudes, values, critical thinking skills, the ability to understand other people, and interests in getting along with different kinds of people (Friedlander & MacDougall, 1992; Prendergast, 1998).

Overall, then, there is ample work that explores opinion formation in general. Work has also been conducted on the outcomes associated with being a SL or NSL and the influence of student-to-student interactions on those outcomes. Researchers have not

however, investigated opinion formation and the influence of student-to-student interactions on SL change in opinion. That is the gap in the literature that the present study sought to address.

Chapter Three

Methodology

The purpose of this study was to explore the influence of student-student interactions on change of opinion among student leaders (SLs) and non-student leaders (NSLs). I sought to predict which interactions with others (those whose interests, philosophy of life or personal values, political opinions, religious beliefs, race or ethnic background, country of origin and family background were different from one's own), best predict change in opinion. Finally, I explored differences in interactions among SLs by level of involvement (low v. high). The present study ultimately explored three research questions concerning change in opinion:

1. What type of interactions best predict change of opinion among SLs?

   a) Discussions with students whose interests were very different from their own.

   b) Discussions with students whose philosophy of life or personal values were very different from their own.

   c) Discussions with students whose political opinions were very different from their own.

   d) Discussions with students whose religious beliefs were very different from their own.

   e) Discussions with students whose race or ethnic background was different from their own.

   f) Discussions with students who were from a different country from their own.

g) Discussions with students whose family background (economic, social) was different from their own.

2. What type of interactions best predict change of opinion among NSLs?

   a) Discussions with students whose interests were very different from their own.

   b) Discussions with students whose philosophy of life or personal values were very different from their own.

   c) Discussions with students whose political opinions were very different from their own.

   d) Discussions with students whose religious beliefs were very different from their own.

   e) Discussions with students whose race or ethnic background was different from their own.

   f) Discussions with students who were from a different country from their own.

   g) Discussions with students whose family background (economic, social) was different from their own.

3. Are there differences by level of involvement (low v. high) among student leaders, regarding discussion items (interests, philosophy of life or personal values, political opinions, religious beliefs, race or ethnic background, country, and family background)?

This chapter describes the method employed in the study. A description of the sampling procedure, the instrumentation, and the procedures used to collect and analyze data is included.

Sample Selection

A random sample of 2000 respondents was selected from those who participated in a national study. The CSEQ (Pace, 1984) is a survey administered annually to a national sample of randomly selected undergraduate students from participating colleges and universities in the United States. It is designed to elicit information from participants about their demographic characteristics, college activities, opinions about college, college environment, quality of effort regarding involvement, and estimate of gains in terms of progress made toward educational goals. Institutions can elect to administer the CSEQ using a paper-based version or a web-based version of the instrument. This study uses the results from the web-based version of the 2004 CSEQ. Freshmen, sophomores, juniors, and seniors, were eligible to participate in this study (Pace, 1984).

Undergraduate students enrolled for the 2004 spring semester who completed the CSEQ were eligible to be selected for the study. Once selected, they were assigned to one of two groups based on their responses to two items on the CSEQ survey (CSEQ, 2004). To be considered for the SL group, respondents needed to respond "Very Often," "Often" or "Occasionally" to the following questions: Managed or provided leadership for a club or organization, on or off the campus and Attended a meeting of a campus club, organization, or student government group. These responses indicated their level of involvement in student organizations, and these respondents were considered student

leaders (SLs). Non-student leaders (NSLs) were considered those who responded "Never" to the same questions (CSEQ, 2004).

Many definitions of SL exist (Arminio, et al, 2000). The definition used for this study depicts those who actively participate in clubs and organizations, and those who direct their peers in organizations (Astin, 1984; Depp, 1993; Kuh, 1993; Kuh, 2000; Pascarella & Terenzini, 1991; Strange, 1996).

Leadership is seen as a multifaceted interaction between the leader and the social and organizational environment (Fiedler, 1996). This study sought to understand the influence of student-to-student interactions on change in opinion. Interactions refer to discussions with others whose interests, philosophy of life or personal values, political opinions, religious beliefs, race or ethnic backgrounds, country of origin and family background are different from one's own. Interaction, in this study, was measured by items on the CSEQ that ask respondents to indicate how often they had become acquainted with or had discussions with other students who were different from themselves based on those characteristics.

Interpersonal influence occurs in groups of people and sometimes results in a change of opinion (Friedkin & Johnsen, 1999). Change of opinion in this study was measured by additional items on the CSEQ that ask respondents to indicate how often they had changed their opinion as a result of the knowledge or arguments presented by others, and how often they had persuaded others to change their minds as a result of the knowledge or arguments they cited (CSEQ, 2004).

National data from the 2004 CSEQ are stored at the College Student Experiences Questionnaire Research Program at Indiana University in Bloomington, Indiana. I

submitted a written proposal about the logistics of the study, timeline, and questions to be researched, to the director of the research program. I asked for data from a random sample of students of varying classifications (i.e., freshman, sophomore, juniors, seniors) who completed the survey in the spring of 2004. Fifty-seven percent were freshmen, 8% were sophomores, 13% were juniors and 22% were seniors. To avoid skewing the data, I did not request a specific distribution of SLs and NSLs.

I contacted the CSEQ administrators, requested the data set needed for the study, and it was sent to me via U.S. mail. I was required to send a copy of my dissertation and any other publications that resulted from this study to the CSEQ program.

The sample for this study included students from 30 different four-year institutions across the United States including Doctoral Extensive, Doctoral Intensive, Masters, Baccalaureate General and Baccalaureate Liberal Arts campuses. Thirty-eight percent were from Master's institutions, 26% from General colleges, 24% were from Doctoral-Extensive institutions, 7% were from Doctoral-Intensive institutions and 5% were from Liberal Arts colleges. Table 1 provides an explanation of the college classifications and types of institutions. The random sample of 2,000 participants employed in this analysis represented about 12.5% of all participants who completed the 2004 CSEQ.

<center>Instrumentation</center>

This study utilized data from the 2004 administration of the College Student Experiences Questionnaire (CSEQ) (Pace, 1984). The focus was on how students spend their time in college, and the nature and quality of their activities. The CSEQ instrument, consisting of 191 items with Likert-type response options, is based on extensive research

Table 1

College Classifications and Institutional Types of the Sample (N=2,000)

Characteristics

	N	*%n*
College Classifications		
Freshman	1156	57.8
Sophomore	153	7.7
Junior	254	12.7
Senior	437	21.9
Institutional Type		
General Colleges	511	25.6
Liberal Arts	104	5.2
Master's Colleges	764	38.2
Doctoral-Intensive	144	7.2
Doctoral-Extensive	477	23.9

that concluded that student engagement affects college outcomes (Gonyea, Kish, Kuh, Muthiah, & Thomas, 2003). The instrument measures three general aspects of a student's experience: (a) college activities (b) the college environment, and (c) estimate of gains. For purposes of this study, 11 items were selected from the College Activities section.

The College Activities questions, which make up the majority of the survey, ask how often the respondent has experienced a specific event during the current school year. The response options include "Very Often," "Often," "Occasionally," and "Never." The questions are grouped into 13 Quality of Effort (QE) scales. Quality of Effort scales refer to the idea that the more effort respondents exert to utilize the resources and opportunities that an institution provides for their learning and development, the more they benefit from that use. Pace coined the term "quality of effort" to represent the unique interaction that takes place between students and their campus environments (Gonyea, Kish, Kuh, Muthiah, & Thomas, 2003).

Each QE scale contains between five and eleven activities that characterize a range of difficulty. Some are fairly easy to accomplish and are frequently done, and others are more difficult and are accomplished less often (Pace, 1984). The QE scales are: library experiences; computer and information technology; course learning; writing experiences; experiences with faculty; art, music, and theater; campus facilities; clubs and organizations; personal experiences; student acquaintances; scientific and quantitative experiences; topics of conversation; information in conversations. This study used two items from the clubs and organizations QE scale, seven items from the student acquaintances QE scale, and two items from the information in conversations QE scale.

The "clubs and organizations" items ask students how often they have managed or provided leadership for a club or organization, on or off campus, and how often they attended a meeting of a campus club, organization, or student government group. The "student acquaintances" items ask students how often they have become acquainted with or had serious discussions with students who were different from them, based on various characteristics (e.g., political views, religious beliefs). The "information in conversations" items ask students how often they have changed their opinion based on the knowledge or arguments presented by others, and how often they have persuaded others to change their minds based on the knowledge or arguments they presented. Additional background information is collected at the end of the instrument, including age, gender, college class standing (e.g., sophomore, junior), race and ethnicity, residency, major, parents' level of education, and living situation.

<div align="center">Reliability and Validity</div>

Reliability refers to the degree to which an instrument elicits the same results each time it is used under the same conditions, using the same subjects (Suskie, 1996). In fact, some scholars point out that reliability is synonymous with consistency (Huck, 2004). There are a number of methods for assessing reliability. One of the primary measures of reliability is known as alpha or internal consistency reliability, which refers to how well each item relates independently to the rest of the items on a scale. It also measures how well items on a scale are related overall. For this study, Cronbach's Alpha was used. Cronbach's Alpha is used to measure squared correlations between the observed scores and true scores. These correlations range from 0 to 1.0, in which stronger relationships are indicated by values nearest to 1.0 (Creswell, 2003; Green & Salkind, 2003).

Reliability and validity procedures were conducted by the Indiana University Center for Postsecondary Research and Planning office, using a nationally representative sample of freshman, sophomores, juniors and seniors. A sub-set of the national data was used in this study. Therefore, to ensure reliability and validity, additional steps needed to be taken on the sub-set of the data being used for this study. Those steps will be described in the Data Analysis section of this chapter.

The items for each scale on the CSEQ correlated significantly with one another and each item correlated well based on the total score for its scale. The quality of effort scales correlated with one another and the alpha reliability ranged from .74 to .92, suggesting high reliability (Gonyea, Kish, Kuh, Muthiah, & Thomas 2003).

Validity refers to whether one can draw useful and meaningful inferences from scores on the instruments. In terms of measurement, validity is important as it assesses the degree to which an instrument measures what it claims to measure (Huck, 2004). There are various forms of validity to look for (Creswell, 2003). Face validity refers to whether the instrument looks to be a valid tool to the respondents who take it, the administrators who use it, and to other observers (Anastasi, 1988). Construct validity determines whether items measure hypothetical concepts, whether scores serve a useful purpose, and whether they have positive consequences when used (Humbly & Zumbo, 1996).

The face validity of the CSEQ is based on the logical relationships among items that appear on the same scale. The Buros Mental Measurements indicate that items on the CSEQ scales are clear, well defined, and have face validity. This indicates that there are logical relationships among the same scale items (Gonyea, Kish, Kuh, Muthiah &

Thomas, 2003). Last, factor analysis is a method used to reduce a large number of variables to a smaller number of variables, to discover presumed underlying relations (Green & Salkind, 2003).

Face, or content, validity can also be assured by using inter-scale and intra-scale correlations to measure the degree of fit between survey items. Clusters on the Quality of Effort scales correlate highly among the academic factors (e.g. course learning .83, science and quantitative experiences .91) and the out-of-class factors (e.g. student acquaintances .91, personal experiences .84). Quality of effort scales do not correlate as highly among the college environment factors (e.g. library .80, campus locations .74) (Gonyea, Kish, Kuh, Muthiah, & Thomas 2003) but are sufficiently high to ensure the validity of those factors.

Factor analysis was conducted on the 191 items on the CSEQ. A dominant factor in every scale was identified based on the factor analysis. Principal components factoring was used to extract 13 factors. All items on the CSEQ are generally correlated. For this reason, an oblique rotation was used to maintain the inter-correlations. The Quality of Effort scale resulted in two factors: personal-social and academic-intellectual activities (Gonyea, Kish, Kuh, Muthiah & Thomas, 2003).

The relationships among inter-scale items and among all CSEQ subscales establish construct validity. The construct validity of the CSEQ is shown through the correlations among the activity scales (Gonyea, Kish, Kuh, Muthiah & Thomas, 2003).

<div align="center">Data Collection Procedure</div>

It was necessary to obtain approval to conduct the study from the Institutional Review Board for Research Involving Human Subjects (IRB) at the researcher's

institution (see Appendix A). Once IRB approval was obtained, the data were collected and analyzed.

Individual institutions administered the online version of the CSEQ survey sometime between January and May of 2004. Each institution determined its own specific timeline however, generally an initial email invitation was sent, followed by a series of reminders across a time span of no more than three weeks. Students were each assigned unique login codes to prevent duplicate respondents.

<div style="text-align:center">Data Analysis Procedure</div>

Data analysis for this study was conducted in several stages. Because this study used a subset of a national data set, a factor analysis was run to ensure reliability and validity of that subset. To measure the reliability of the data, Cronbach alpha estimates were calculated for items included in the study. Alpha reliability of .60 or better was considered high reliability.

Confirmatory factor analysis was run to ensure validity. This technique is well substantiated in previous studies using CSEQ data (Pike, 2000; Whitmire, 1997). Statistical tests were conducted to respond to the three research questions posed in the study. This included the use of two different statistical procedures, each appropriate for specific research questions.

Table 2 outlines the recoding of the variables. The first step in the analysis was to recode the data related to opinion change, student leader status (SL v. NSL), and level of involvement among SLs. In terms of opinion change, the four point Likert scale (1=Never to 4=Very Often) used to measure the two change in opinion items ("changed

Table 2

Variables, Codes, and Descriptions

Variable	Code	Description
Depvar	0,1	0=No Change, 1= Change
Groupvar	0,1	0=NSLs, 1=SLs
SLs (freq)	0,1	0=Low, 1=High (scores of 3-5=Low, 6-8=High)

your opinion as a result of the knowledge or arguments presented by others" and "persuaded others to change their minds as a result of the knowledge or arguments you cited") resulted in scores that ranged from 0 to 8. Scores of 0 and 1 indicated that the respondent had not replied to one of the two items and I elected to eliminate those cases from the analysis. Next, I needed to recode the remaining scores to reflect whether opinion changed occurred. I determined that scores of 2 through 4 indicated No Change in opinion. That is, respondents had reported Never or Occasionally to the items about opinion change. These scores were recoded as 0. I determined that scores of 5 through 8 indicated Change in opinion, and these scores were therefore recoded as 1.

Next, the sample was divided into two categories, student leaders (SLs) and non-student leaders (NSLs), based on responses to the questions asking them how often they were involved in campus clubs and organizations (CSEQ, 2004). Using the same four point Likert scale (1=Never to 4=Very Often), scores for all respondents ranged from 0 to 8. Scores of 0 and 1 indicated that the participant had not responded to one of these two items and those cases were not included in the analyses. The first category, SLs, consisted of participants who were involved in campus clubs and organizations. These individuals' scores ranged from 3 to 8. That is, they responded in some combination of Occasionally, Often, and Very Often on the following items: "managed or provided leadership for a club or organization, on or off the campus" and "attended a meeting of a campus club, organization, or student government group." Scores between 3 and 8 were recoded as 1. The second category, NSLs, consisted of participants who were not involved in campus clubs or organizations (i.e., responded Never to both items). Scores of 2 on the two items were recoded as 0.

Finally, I needed to assign SLs into one of two groups: less involved and highly involved. The SL group consisted of those whose scores on the two involvement items ranged from 3 to 8. I assigned those with scores of 3-5 to the Less Involved Group (recoded as 0) and those with scores of 6-8 to the Highly Involved Group (recoded as 1).

To examine what type of discussion best predicted change in opinion, binomial logistic regression was used to address the first two research questions. The dependent variable (change in opinion) was represented by two groups: No Change and Change. The seven independent variables (discussion variables) yielded interval data. Using responses from only SLs, I generated a regression model to identify which of the seven discussion type variables best predicted change of opinion. This process was then repeated using responses from NSLs to address the second research question (explaining change in opinion for NSLs).

The third research question posed in the study examined whether there were statistically significant differences among SLs on each of the discussion items, by level of involvement. To address the third question, I sorted the SL respondents into two groups: those with high levels of involvement and those with low levels of involvement. I calculated the mean scores for each discussion type item for each group and ran t-tests to determine whether the means of these two groups were significantly different from one another.

In conclusion, the purpose of this study was to explore the influence of student-student interactions on change of opinion among student leaders (SLs) and non-student leaders (NSLs). It sought to predict the degree to which discussions with other students whose interests, philosophy of life or personal values, political opinions, religious beliefs,

race or ethnic background, country of origin and family background (economic, social) were different from one's own, explained change in opinion. This study also explored differences in involvement among SLs by frequency of involvement (low v. high). The methodology described in this chapter was deemed sufficient to address the research questions posed in this study.

Chapter Four

Results

This chapter reports the results of the study. The first section describes the

sample. The second section discusses the results of data analyses used to respond to the

three research questions posed in the study.

Sample

With missing data considered, the data set included 1,992 records submitted from

respondents who participated in the 2004 administration of the College Student

Experiences Questionnaire (CSEQ).   Participants represented 30 different four-year

institutions across the United States including Doctoral Extensive, Doctoral Intensive,

Masters, Baccalaureate General, and Baccalaureate Liberal Arts campuses.

Participants were assigned to one of two groups, student-leaders (SLs) or non-

student leaders (NSLs), based on their responses to two items regarding their

involvement in student clubs and organizations. There were 1,428 participants assigned

to the SL group and 564 participants assigned to the NSL group. Females represented

66.8% of the SLs and males represented 32.8%. Females represented 61.1% of the NSLs

and males represented 38.5%. White/Caucasian students represented the majority of the

sample including 1,056 SLs (73.6%) and 412 NSLs (72.8%). The number of minorities

included 434 SLs (30.4%) and 174 NSLs (30.7%). Frequency data about participants are

reported in Table 3.

SLs were assigned to one of two groups based on responses to two CSEQ items

that asked about participation in and leadership of campus organizations. Highly

involved SLs represented 37.7% of the sample while 62.3% of the SLs were less

Table 3

Demographic Characteristics of the Sample (N= 1992)

Characteristics	SLs (n=1428)		Missing Data	NSLs (n=564)		Sample Total
	N	*%n*		*N*	*%n*	*%*
Gender			.4			
Female	958	66.8		346	61.1	65.2
Male	470	32.8		218	38.5	34.4
Race/Ethnicity			1.4			
White/Caucasian	1056	73.6		412	72.8	74.4
Asian/Pacific/Islander	171	11.9		63	11.1	11.9
Black/African American	80	5.6		46	8.1	6.4
Mexican American	54	3.8		24	4.2	4.0
Other	57	4.0		13	2.3	3.5
Other Hispanic	28	2.0		14	2.5	2.1
American Indian/ Other Native	27	1.9		8	1.4	1.8
Puerto Rican	17	1.2		6	1.1	1.2

involved (see Table 4).

Results of Data Analyses

The analysis of data utilized responses from a sub-set of the 2004 CSEQ administration. The questionnaire is administered by the CSEQ Research Program at Indiana University in Bloomington, Indiana. It consists of 191 items with Likert-type response options, designed to elicit information from participants about how they spend their time in college, and the nature and quality of their activities (Pace, 1984).

The instrument measures three general aspects of a student's experience: (a) College Activities (b) the College Environment, and (c) Estimate of Gains. The questions within the College Activities section refer to how often the student has done or experienced various events throughout the course of the school year. The items are grouped into thirteen Quality of Effort (QE) subscales. For purposes of this study, 11 items were selected from 3 of the QE subscales: 2 items from the Clubs and Organizations subscale, 7 items from the Student Acquaintances subscale, and 2 items from the Information in Conversations subscale.

Because a sub-set of the 2004 CSEQ data was used, sampling error was estimated. When using a subset of a total population, sampling error may occur. It symbolizes the random difference between sample characteristics and population characteristics (Salant & Dillman, 1994). Sampling error involves the number of respondents to the survey and the total number of respondents in the population of interest (Gonyea, Kish, Kuh, Muthiah, & Thomas 2003). Frequency data from the national sample of the 2004 CSEQ population was requested from CSEQ administration to estimate sampling error for the current study. Using the sampling error formula,

Table 4

Student Leader (SL) Frequency (n=1434)

Group	N	%
Highly Involved SLs	540	37.7
Less Involved SLs	894	62.3

random differences were estimated. Results suggest there is no significant difference between my sample and the national dataset. There is at most, a 2% error associated with my sampling technique. In addition, I used chi-square to test differences by gender and race, between my sample and the national data set. The chi-square result for gender was χ^2 (1, N =1923) = .503, p = 3.84 and the chi-square result for race was χ^2 (8, N = 1923) = 6.504, p = 15.51. Therefore, there were no significant differences in my sample versus the frequency of the population sample by gender or race.

Internal consistency is one of the primary measures of reliability and refers to how well each item relates independently to the rest of the items on a scale. It also measures how well items on a scale are related overall. To ensure that the data in my subset was representative of the entire CSEQ population, Cronbach's Alpha was used. Cronbach's Alpha is used to measure squared correlations between the observed scores and true scores. These correlations range from 0 to 1.0, in which stronger relationships are indicated by values nearest to 1.0 (Creswell, 2003; Green & Salkind, 2003). Results of the internal consistency assessment (Cronbach's Alpha) on the three sub-scales, as well as the National CSEQ scales are presented in Table 5. I calculated correlations between the item that loaded on each of the three 3 factors. The Clubs and Organizations scale consist of 5 items, 7 items from the Student Acquaintances subscale, and 2 items from the Information in Conversations subscale.

Scale alphas ranged between .83 (Clubs and Organizations) and .90 (Student Acquaintances). The third scale, Information in Conversation, had an alpha of .86. These scale alpha values suggest high reliability based on the minimum standard of .60 for exploratory research (Cramer, 2003).

Table 5

Results of Internal Consistency Estimates for the CSEQ Sub-Scales

Scale	α
CSEQ Sub-Scale	
Clubs and Organizations	.83
Student Acquaintances	.90
Information in Conversation	.86
National CSEQ Sub-Scale	
Clubs and Organizations	.83
Student Acquaintances	.91
Information in Conversation	.86

Descriptive statistics on the 7 independent variables (conversations with others who were different from self) were computed and are reported in Table 6. The number of responses (n) for each item was relatively similar, but the range in means was fairly large. "Discussions with students from a different country" had the lowest mean 2.17, (SD=1.034), while "acquainted with students of different backgrounds" had the highest mean 3.06, (SD=.805). A mean value of 1 or 2 indicates that on average, students in the sample Never or Sometimes, respectively, had discussions with students from a different country. However, mean values of 3 and 4 indicate that students Often or Very Often respectively, became acquainted with students of different backgrounds.

Standard deviations that measure variability between the mean and each score in the distribution while considering the mean as a reference point (Gravetter & Wallnau, 2004), ranged from 1.034 and .805. Therefore, these standard deviations represent the average of the deviations. For example, a standard deviation of 1.034 for the item, "Discussions with students from a different country," tells us that scores on average, deviate 1.034 units from the sample mean. Though this item had the lowest mean, 2.17, a larger amount of variability was present. Likewise, scores for the item "acquainted with students of different backgrounds," on average deviate .805 units from the mean. Though this item had the highest mean, 3.06, items displayed smaller amounts of variability.

Finally, confidence intervals make a rational statement about the true mean of a population in reference to a random sample, using a 95% confidence level (Gravetter & Wallnau, 2004). I wanted to determine whether my sample means were true estimates of the population mean. Results suggest that 95% of the time, my population mean will fall within the interval.

Table 6

Sample Mean and Standard Deviation for Student Acquaintances Scale Items

Item	*N*	M	s.d.
Acquainted with students of different backgrounds	1972	3.06	.805
Acquainted with students of different interests	1976	2.93	.807
Discussions with students of different values	1975	2.65	.950
Discussions with students of different religious values	1973	2.56	1.014
Discussions with students of a different race or ethnicity	1976	2.54	.999
Discussions with students of different political values	1975	2.48	1.009
Discussions with students of a different country	1969	2.17	1.034

A confirmatory factor analysis was run to ensure validity of the subset of data used for this study. The a priori hypothesis for the factor analytic procedure was that the structure and dimensions of the sample would be the same as the national sample. Because there are 3 discrete factors in the CSEQ population, (Clubs and Organizations), (Student Acquaintances), and (Information in Conversation), I wanted to verify that there were also 3 discrete factors in the subset of data used in the present study.

Three factors were rotated using a varimax rotation procedure. Varimax rotation, the most commonly used rotation option, refers to factors that are unrelated to one another, where scores on one factor do not correlate with scores on another factor. Varimax seeks to maximize the amount of variance explained by factors by increasing those correlations of variables that have high correlations, and decreasing those correlations of variables that have low correlations (Cramer, 2003).

The rotated solution in Table 7 yielded three interpretable factors (Student Acquaintances, Information in Conversations, and Clubs and Organizations), that explain 56.8% of the variance. The Student Acquaintances factor accounted for 34.4% of the item variance, the Information in Conversations factor accounted for 12.3% of the item variance, and the Clubs and Organizations factor accounted for 10.1% of the item variance. The confirmatory factor analysis was another way to ensure that the respondents for this study represented the national CSEQ data set. Three research questions guided this investigation. The first two questions sought to identify the type of discussions that best predict change of opinion among SLs and NSLs respectively. The last question addressed differences by level of involvement between less involved SLs.05 and highly involved SLs. Statistical significance was assessed using an alpha level of

Table 7

Factor Loadings for the Student Acquaintances, Information in Conversations and Clubs and Organizations Scale

Factor	Scale	Factor Loadings	
		Sub-Sample	Natl. Sample
1	Student Acquaintances		
	Acquainted.: students of diff. interests	.70	.66
	Acquainted: students of diff. backgrounds	.76	.72
	Acquainted: students of different age	.63	.58
	Acquainted: students of different race	.77	.73
	Acquainted: students from other country	.69	.68
	Discussions: students of different values	.69	.77
	Discussions: students of diff. political	.58	.69
	Discussions: students of diff. religion	.63	.71
	Discussions: students of diff. race	.76	.80
	Discussions: students of diff. country	.68	.71
2	Information in Conversations		
	Referred to readings or classes	.75	.74
	Explored diff. ways of thinking	.75	.75
	Referred to what instructor said	.78	.80
	Subsequently read about topic	.75	.74
	Changed opinion b/c of others	.66	.61
	Persuaded others to change their minds	.67	.61

Table 7 (continued)

Factor	Scale	Factor Loadings	
		Sub-Sample	Natl. Sample
3	Clubs and Organizations		
	Attended meeting of campus org.	.76	.73
	Worked on campus comm./org.	.83	.82
	Worked on off-camp. comm./org.	.57	.47
	Met with fac. to discuss campus grp.	.77	.70
	Managed org. on/off camp.	.83	.80

for each statistical test.

Research questions one and two examined the types of discussions that best predict change in opinion for SLs and NSLs. To answer these questions, binomial logistic regression was used to measure the relationship between independent factors and the dependent variable, change in opinion. Logistic regression estimates the predicted probability of an event occurring, and the binary dependent variable indicates that there are two options (Cabrera, 1994).

The logistic regression equation reflects probability in terms of odds. That is, the probability of an event occurring is divided by the probability of it not occurring, resulting in the odds calculation. In this study, the odds ratio represents the odds of opinion change occurring as a result of each of the discussion types, versus opinion change not occurring. Statistical Package for Social Sciences (SPSS) can be used to calculate odds ratios in addition to the beta coefficients for each independent variable included in the model (Cramer, 2003).

An alternative test used to examine significance in individual logistic regression coefficients is the Wald statistic. The Wald statistic is applied to each independent variable to test its significance level (Cramer, 2003). In this study, the Wald statistic is used to test the level of significance of each of the discussion type variables in predicting the outcome variable.

Prior to running the logistic regression model, I ran a multiple regression to evaluate how well the discussion variables, as measured by the CSEQ, explained variance in change in opinion. Ordinary least squares (OLS) multiple regression is a quantitative

technique used to understand the linear association between a criterion variable and two or more predictor variables (Cramer, 2003).

The predictors were 7 discussion variables ranging from having "discussions with students with different values" to "acquainted with students of different backgrounds." The criterion variable was change in opinion. The linear combination of independent variables was significantly related to change in opinion for SLs, R^2=.12, adjusted R^2 =.12, F(7, 1399) =27.857, p<.01. The sample multiple correlation coefficient was .35. This suggests that 12% of the variance in change in opinion in the sample can be accounted for by the linear combination of discussion and acquaintance measures.

Once I ran the multiple regressions, I established that discussion variables may be used to explain change in opinion. Two independent variables made the most significant contributions to the prediction equation. Results suggest that discussions with other students with different political opinions contributed significantly t(1399)= 3.184, < .01. Likewise, discussions with students from different countries was significant t(1399)= 6.262, <.01. Table 8 outlines the results of the exploratory multiple regression analysis for SLs.

The linear combination of independent variables was also significantly related to change in opinion for NSLs, R^2=.08, adjusted R^2 =.07, F(7, 522) =6.610, <.01. The sample multiple correlation coefficient was .29, indicating 8% of the variance in change in opinion in the sample can be accounted for by the linear combination of discussion and acquaintance measures.

Two independent variables made the most significant contributions to the prediction equation. Again, results suggest that discussions with other students with

Table 8

Results of Exploratory Multiple Regression Analysis of SLs
(N=1400)

	Unstd. Coefficients		Std.Coefficients	t	Sig.
	B	SE	Beta		
(Constant)	-5.90	.057		-.103	.918
Acq.: students of diff. interests	3.621	.022	.006	.164	.870
Discussions: students of different values	2.384	.021	.044	1.139	.255
Discussions: students of diff. political opinions	5.822	.018	.115	3.184	.001
Discussions: students of different religious values	3.049	.019	.061	1.615	.107
Discussions: students of different race/ethnicity	3.787	.019	.001	.020	.984
Discussions: students of different countries	.102	.016	.213	6.262	.000
Acquainted: with students of different backgrounds	-1.43	.023	-.022	-.621	.535

different political opinions contributed significantly t(522)= 2.161, < .05. Likewise, discussions with students from different countries was significant t(522)= 2.320, <.05. Table 9 outlines the results of the exploratory multiple regression analysis for NSLs.

Once I established that the discussion variables could be used to explain change in opinion, I turned my attention to the research questions posed in the study. To answer the first two questions using logistic regression, it was first necessary to select the SL and NSL cases using the "groupvar" variable. Participants were coded a "1" if they were SLs. If the value was equal to 0, participants were coded NSLs.

Next, the independent discussion variables were regressed on the change in opinion dependent variable for the SL group only. Independent variables for this analysis included: Became acquainted with students whose interests were very different from yours; Became acquainted with students whose family background (economic, social) was different yours; Had serious discussions with students whose philosophy of life or personal values were very different from yours; Had serious discussions with students whose political opinions were very different from yours; Had serious discussions with students whose religious beliefs were very different from yours; Had serious discussions with students whose race or ethnic background was different from yours; Had serious discussions with students who were from a different country from yours.

Table 10 reports the standardized regression coefficients and R^2 in regards to research question one. This question examined the types of discussions that best predict change in opinion for SLs. The most significant predictors for SLs in the current study were: discussions with students who have different political values, (β = .260, p<.01), and discussions with students from a different country, (β = .447, p<.01). Results

Table 9

Results of Exploratory Multiple Regression Analysis of NSLs
N= (523)

	Unstd. Coefficients		Std.Coefficients	t	Sig.
	B	SE	Beta		
(Constant)	-9.17	.081		-0.11	.991
Acq.: students of diff. interests	2.859	.036	.048	.793	.428
Discussions: students of different values	-2.72	.035	-.054	-.778	.437
Discussions: students of diff. polit. opinions	7.012	.032	.147	2.161	.031
Discussions: students of different religious values	2.445	.032	.051	.757	.449
Discussions: stud. of diff. race/ethnicity	1.125	.033	.023	.344	.731
Discussions: stud. of different countries	6.798	.029	.137	2.320	.021
Acquainted: w/stud. of diff. backgrounds	3.689	.037	.006	.101	.920

Table 10

Results of Logistic Regression Analysis of SLs
(N=1400)

Factors	Beta Coefficient	Standard Error	Wald Statistic	p-value	Odds Ratio
Acquainted.: students of diff. interests	.015	.101	.023	.880	1.015
Discussions: students of different values	.107	.094	1.298	.255	1.112
Discussions: students of diff. political opin.	.260	.082	10.053	.002	1.297
Discussions: students of different relig. values	.135	.084	2.575	.109	1.145
Discussions: students of different race/ethnicity	.004	.087	.002	.965	1.004
Discussions: students of different countries	.447	.074	36.864	.000	1.564
Acquainted: w/stud. of diff. backgrounds	-.063	.104	.367	.544	.939
Constant	-2.237	.268	69.471	.000	.107
Pseudo R^2 (Cox & Snell)	.121				
Pseudo R^2 (Nagelkerke)	.161				

from the logistic regression suggest that the discussion variables add significantly to the prediction of change of opinion.

Table 11 reports results from the regression model for SLs, indicating that 717 SLs reported no change in opinion and 683 SLs indicated change in opinion. Step 0 of the classification table reports the state of affairs for the null model, that is, a model with no predictors and only the intercept (Pampel, 2000). In this case, 51% of the cases would be predicted correctly. When the predictors are included in the regression equation (Step 1), the percent of cases predicted correctly increases to 65%.

There are several other indicators that assess goodness of fit of logistic regression models. The -2 Log likelihood statistic, which determines if the model's predictors provide a good fit with the data (Cramer, 2003), is 1759.382 for SLs in this study, and suggest goodness of fit once the independent variables are included.

The Hosmer-Lemeshow (2000) test is also used to assess the fit of the logistic regression model. It is only used with binary dependent variables and is calculated by dividing the predicted probabilities into deciles, with a Pearson chi-square calculation that compares the predicted frequencies to observed frequencies. Low chi-square values with nonsignificance suggest goodness of fit. The results of the Hosmer-Lemeshow test computed in this study for SLs suggest goodness of fit, χ_2 (8, N=2000) = 3.059, p = .931.

Some indicators of goodness of fit however, are pseudo R^2 values and lead to incorrect conclusions. For example, the Cox & Snell pseudo R-Square (1989) and the Nagelkerke pseudo R-Square (1991) tests attempt to measure the strength of association between the dependent and independent variables.

Table 11

Classification Table: Observed and Predicted Frequencies for SLs for Logistic Regression Analysis (N=1400)

Observed	Predicted No Opinion Change	Opinion Change	%Correct
Step 0			
No Opinion Change	717	0	100
Opinion Change	683	0	.0
Overall % correct			51.2
Step 1			
No Opinion Change	507	210	70.7
Opinion Change	275	408	59.7
Overall % correct			65.4

In multiple regression, the R-squared value indicates the amount of variance in the dependent variable that is explained by the independent variables in the model. On the other hand, one must proceed with caution in logistic regression because pseudo R-squared values can be calculated to estimate the percent of the variance in the probability of one event occurring versus another. In this study, the percent of variance in the probability of change in opinion is examined. This is difficult to interpret so statisticians and methodologists recommend using odds ratios in addition.

The SL value for the Cox & Snell R Square is (pseudo- R^2 = .121) and the Nagelkerke R Square is (pseudo- R^2 = .161). These statistics suggest that 12% to 16% of the variance in the probability of change in opinion can be accounted for by the factors included in the final logistic model.

Table 12 reports the standardized regression coefficients and R^2 in regards to research question two. This question examined the types of discussions that best predict change in opinion for NSLs. The same two predictors that were the most significant for SLs were also the most significant for NSLs: discussions with students who have different political values, (Beta = .308, p<.05) and discussions with students from a different country, (Beta = .291. p<.05). Results from the logistic regression suggest that the discussion variables add significantly to the prediction of change in opinion.

Table 13 reports results from the regression model for NSLs, indicating that 317 NSLs reported no change in opinion and 206 NSLs indicated change in opinion. Step 0 of the classification table indicates the state of affairs for the null model, a model with no predictors and only the intercept. Again, the results of this test suggest the percent of cases correctly classified if one predicts that all cases in the sample are "0" on the

Table 12

Results of Logistic Regression Analysis of NSLs
(N=523)

Factors	Beta Coefficient	Standard Error	Wald Statistic	p-value	Odds Ratio
Acquainted: students of diff. interests	.127	.163	.604	.437	1.135
Discussions: students of different values	-.122	.158	.595	.441	.885
Discussions: students of diff. political opin.	.308	.144	4.536	.033	1.360
Discussions: students of different relig. values	.111	.144	.591	.442	1.117
Discussions: students of different race/ethnicity	.051	.146	.123	.726	1.052
Discussions: students of different countries	.291	.130	5.024	.025	1.338
Acquainted: w/stud. of diff. backgrounds	.019	.165	.013	.909	1.019
Constant	-2.193	.382	32.979	.000	.112

Pseudo R^2 (Cox & Snell)   .080

Pseudo R^2 (Nagelkerke)   .109

Table 13

Classification Table: Observed and Predicted Frequencies for NSLs for Logistic Regression Analysis (N=523)

Observed	Predicted No Opinion Change	Opinion Change	%Correct
Step 0			
No Opinion Change	317	0	100
Opinion Change	206	0	.0
Overall % correct			60.6
Step 1			
No Opinion Change	274	43	86.4
Opinion Change	133	73	35.4
Overall % correct			66.3

dependent variable. In this case, 61% of the cases would be predicted correctly. Step 1 indicates that once predictors are included in the regression equation, the percent of cases predicted correctly increases to 66%.

Indicators of goodness of fit were also assessed for NSLs. The -2 Log likelihood statistic for NSLs is 657.544 in this study, and suggest goodness of fit once the independent variables were added to the model. Results of the Hosmer-Lemeshow test for NSLs suggest goodness of fit as well, χ_2 (8, N=2000) =8.641, p = .373.

Again, pseudo R^2 tests were assessed for NSLs via use of Cox & Snell pseudo R-Square and Nagelkerke pseudo R-Square. Pseudo R-squared values are calculated to estimate the percent of the variance in the probability of one even occurring (in this case, no change of opinion) versus another (change in opinion). Cox & Snell R Square is (pseudo- R^2 = .080) and the Nagelkerke R Square is (pseudo- R^2 = .109) in this study, suggesting that 8% to 11% of the variance in the probability of change in opinion can be accounted for by the factors included in the final logistic model.

Table 14 reports the results of the test conducted to address the last research question. Independent-samples t-tests were conducted to evaluate differences by level of involvement (less involved SLs versus highly involved SLs) in regards to the discussion items (interests, philosophy of life or personal values, political opinions, religious values, race or ethnic background, country, and family background). Response options in regards to how often participants engaged in discussions with others different from themselves included Very Often, Often, Occasionally and Never.

The t-test was significant for the item, "had discussions with students whose interests were very different from their own," t(1428) = -3.943, p = .000. Highly involved

Table 14

Results of T-tests between Highly Involved SLs and Less Involved SLs

Discussion Type (n)	m	s.d.	d.f.	t-value	p
Acquainted: students of different interests			1428	-3.943	.000
less (893)	2.96	.789			
highly (537)	3.13	.771			
Discussions: students of different values			1430	-4.019	.000
less (893)	2.67	.926			
highly (539)	2.87	.914			
Discussions: students of diff. political opinions			1429	-5.304	.000
less (892)	2.47	.981			
highly (539)	2.76	.973			
Discussions: students of different religious values			1429	-4.181	.000
less (892)	2.57	.983			
highly (539)	2.79	1.004			
Discussions: students of different race/ethnicity			1430	-5.324	.000
less (893)	2.51	.971			
highly (539)	2.80	.981			

Table 14 (continued)

Discussion Type (n)	m	s.d.	d.f.	t-value	p
Discussions: students of different countries			1427	-4.634	.000
less (893)	2.16	1.009			
highly (537)	2.42	1.071			
Acquainted: students of different backgrounds			1426	-4.485	.000
less (891)	3.06	.783			
highly (537)	3.25	.759			

SLs (*M* = 3.13, *SD* = .771) on average engage in discussions with students who have different interests significantly more often than less involved SLs (*M* = 2.96, *SD* = .789).

The t-test was significant for the item, "had discussions with students whose philosophy of life or personal values were different from their own," *t*(1430) = -4.019, *p* = .000. Highly involved SLs (*M* = 2.87, *SD* = .914) on average engaged in discussions with students whose political opinions were different from their own significantly more often than less involved SLs (*M* = 2.67, *SD* = .926).

The t-test was significant for the item, "had discussions with students whose political opinions were different from their own," *t*(1429) = -5.304, *p* = .000. Highly involved SLs (*M* = 2.76, *SD* = .973) on average engaged in discussions with students whose political opinions were different from their own significantly more often than less involved SLs (*M* = 2.47, *SD* = .981).

The t-test was significant for the item, "had discussions with students whose religious beliefs were different from their own," *t*(1429) = -4.181, *p* = .000. Highly involved SLs (*M* = 2.79, *SD* = 1.004) on average engaged in discussions with students whose religious beliefs were different from their own significantly more often than less involved SLs (*M* = 2.57, *SD* = .983).

The t-test was significant for the item, "had discussions with students whose race or ethnic background was different from their own," *t*(1430) = -5.324, *p* = .000. Highly involved SLs (*M* = 2.80, *SD* = .981) on average engaged in discussions with students whose race or ethnic background was different from their own significantly more often than less involved SLs (*M* = 2.51, *SD* = .971).

The t-test was significant for the item, "had discussions with students who were from a different country from their own," $t(1427) = -4.634$, $p = .000$. Highly involved SLs ($M = 2.42$, $SD = 1.071$) on average engaged in discussions with students who were from a different country from their own significantly more often than less involved SLs ($M = 2.16$, $SD = 1.009$).

The t-test was significant for the item, "had discussions with students whose family background (economic, social) was different from their own," $t(1426) = -4.485$, $p = .000$. Highly involved SLs ($M = 3.25$, $SD = .759$) on average engaged in discussions with students whose family background (economic, social) was different from their own significantly more often than less involved SLs ($M = 3.06$, $SD = .783$).

In conclusion, the results of this investigation provided answers to the three research questions posed in the study. A review of these results for the corresponding research questions suggests that discussions with students who hold different political values from oneself, or are from a different country than oneself, have the strongest influence on change in opinion for both SLs and NSLs. In addition, highly involved SLs engage in discussions with students who are different from themselves significantly more often than less involved SLs, and there are significant differences between less involved SLs and highly involved SLs for each discussion type. Chapter Five discusses these results and their implications for future practice, research and policy.

Chapter Five

Discussion

This study was designed to address the gap in the literature regarding the influence of student-student interactions on change in opinion among student leaders and non-student leaders. A national sample of randomly selected undergraduate students from participating colleges and universities in the United States comprised the sample for the study. Students were placed in two categories based on their responses to two questions on the College Student Experiences Questionnaire (CSEQ). The two categories used in this study were SLs (student leaders) and NSLs (non-student leaders).

A logistic regression model was used to predict which interactions with others (those whose interests, philosophy of life or personal values, political opinions, religious beliefs, race or ethnic background, country of origin and family background were different from one's own), best predict change in opinion for SLs and NSLs. In addition, I explored differences by level of involvement (low v. high) among student leaders, regarding the same discussion items.

The purpose of the chapter is to discuss the results of the study. I start by addressing the research questions posed in the study. Next I compare the findings of the study to prior research. The implications of the results for future practice, research and policy are then addressed. The limitations are described next, followed by some concluding comments.

Discussion

The first two research questions posed in this study explored discussion types that best predicted opinion change for SLs and NSLs respectively. To explore these

questions, first, a confirmatory factor analysis was conducted on the data set to ensure

that the same three discrete factors in the CSEQ population, (Clubs and Organizations),

(Student Acquaintances), and (Information in Conversation), also existed in the

representative sample used for this study. Once I confirmed that the subset consisted of

the same discrete factors as the national sample, discussion factors were regressed using

multiple regression to evaluate how well they explained variance in change in opinion.

This technique is recommended by many researchers as a procedure to use to gain a good

sense of what to expect from the logistic test.

Findings from the multiple regression model suggests that 12% of the variance in

change in opinion in the sample can be accounted for by the discussion variables for the

SL sample, and two independent variables make the most significant contributions to the

prediction equation: discussions with students with different political opinions and

discussions with students from different countries from oneself. In addition, 8% of the

variance in change in opinion in the sample can be accounted for by the discussion

variables for the NSL sample. The same two independent variables make significant

contributions to the prediction equation for NSLs.

To answer the first two research questions, binomial logistic regression was used

to measure the relationship between independent factors and the dependent variable,

change in opinion.   The seven discussion variables were regressed on the change in

opinion dependent variable for the SL and NSL groups. Out of all of these variables, two

are the most significant predictors of opinion change for SLs: discussions with students

with different political opinions, ($\beta = .260$, $p<.01$), and discussions with students from a

different country, ($\beta = .447$, $p<.01$). The same two predictors have the strongest

influence for NSLs: discussions with students with different political opinions, (β = .308, p<.05) and discussions with students from a different country, (β = .291. p<.05). In addition, findings suggest that the initial regression equation alone (i.e., without considering any of the discussion variables) predicts change in opinion in 51% of cases for SLs and in 61% of cases for NSLs.   However, once the discussion variables are added to the model, the percent of cases predicted correctly increases to 65% for SLs, and to 66% for NSLs.

T-tests were used to answer the third research question which evaluated differences by level of involvement (less involved SLs versus highly involved SLs) in regards to each of the discussion items.   The t-tests were significant for each discussion type, and in all cases the highly involved SLs engaged in discussions with others different from themselves more frequently than the less involved SLs.

The logistic regression results reveal that discussions with other students who are different from oneself in regards to political values and country of origin lead to higher levels of opinion change. Opinion change then, is in fact influenced by specific types of discussions, and these discussions have an even greater influence on SLs than NSLs. Results might be interpreted by first considering that many SLs are active in student organizations such as the Student Government Association (SGA), and are exposed to various types of political and governance issues. This exposure might somehow broaden their perspectives and influence their change in opinion on different issues. In regards to the influence discussions with students from a different country have on opinion change, one might assume that student leaders are exposed to a diversity of cultures that are

different from their own. This exposure might open their minds up to multiple ideas that could in turn lead to opinion change about various concepts.

Additionally, the body of literature on leadership suggests that communication and influence between leaders and followers flows in both directions. Leaders are able to shape and are shaped by followers (Gardner, 1990). This study supports this contention and the findings suggest that discussions with others different from oneself, influence opinion change for both SLs and NSLs.

One might also note that the most significant predictors of opinion change were predictors in which students engaged in "discussions" with others versus, for example, instances in which they became acquainted with others. The way in which items were worded on the CSEQ instrument dictated the types of interactions that respondents could report. It is reasonable to suggest that discussions with others who were different from oneself might be more influential than simply becoming acquainted with someone different from oneself. So, if certain types of discussions led to opinion change, it is easy to speculate that having discussions with someone whose background is different from one's own would more likely lead to opinion change.

The predictability power of the regression model for SLs was strong prior to adding the discussion variables, but became even more powerful once the discussion variables were added. In addition, the predictability power of the regression model for NSLs was strong prior to adding the discussion variables however, adding those variables did not enhance the power of the model to the same extent as it did for the SL model. The definition used to describe NSLs in this study may have contributed to this finding. NSLs were defined as students who "Never" Managed or provided leadership for a club or

organization, on or off the campus and "Never" Attended a meeting of a campus club, organization, or student government group. Those who were not involved in campus organizations may not have been exposed to others who were different from themselves to the same extent as those who were involved in campus organizations. This may have influenced responses from NSLs, hence may have influenced the predictability power of the regression model once the discussion variables were added.

When SLs and NSLs engage in discussions with others who have different political opinions or come from a different country, they are more likely to change their opinions. Because predictors were significant for both groups, SLs and NSLs, it would be reasonable to assume that leadership status does not seem to make a difference on change in opinion when having discussions with diverse others. Though NSLs are not as engaged as SLs, they are still influenced by these discussions.

In addition, highly involved SLs engage in discussions significantly more often than less involved SLs for all of the seven types of discussions. This finding suggests that involvement increases exposure to people who are different from oneself, in regards to differences by interests, philosophy of life or personal values, political opinions, religious beliefs, race or ethnic background, country of origin and family background.

Overall, these findings imply a number of things. First, exposure to different political ideas influences opinion change. College students are often involved in discussions about politics in classes and during campus elections. These interactions might explain why political discussions would influence change in opinion. Likewise, with the increasing emphasis on internationalization in the higher education curriculum, college students are socialized to look at global issues and to hold international

experiences in high regard. This might explain the findings that suggest that discussions with others from different countries influence change in opinion. Last, the finding that highly involved SLs engage in discussions with others different from themselves significantly more often than less involved SLs might be explained by assuming that less involved SLs only attend meetings of campus clubs and organizations and perhaps do not lead them or hold leadership positions in them. Alternatively, less involved SLs may be involved in only one organization versus multiple student organizations like highly involved SLs, who hold leadership positions within multiple organizations. Generally, highly involved SLs are exposed to more opportunities than less involved SLs. Being a SL clearly provides greater opportunities and those opportunities can lead to opinion change.

<div align="center">Relationship of the Findings to Prior Research</div>

Three specific themes which focus on the role that interpersonal influence plays in student interactions emerged as a result of this research. First, findings relate to previous work on the non-academic outcome, opinion change. Second, this research supports prior studies regarding student outcomes and the influence of student-to-student interactions. Finally, prior studies that discuss the level of involvement for SLs are supported by this research.

A number of college outcomes, both academic and non-academic, are positively influenced by the interactions that students have with other students. The current study found two significant predictors of opinion change for SLs and NSLs (discussions with students with different political opinions and discussions with students from different countries from oneself). These results support the research conducted on the Social

Influence Network Theory that guided this study. Generally, the Social Influence Network Theory suggests that opinions may be changed and/or informed as a result of interactions with others. It posits that interpersonal influence is one of the major foundations of individuals' socialization, identity, and decision-making abilities (Friedkin & Johnsen, 1999).

My study suggests that opinion change is more likely to occur as a result of interactions with other students from a different country than oneself and discussions with individuals whose political opinions are different. Other studies have found that these same discussions influence the academic outcome of critical thinking skills (Prendergast, 1998). My study expands the contention that discussions with others different from oneself influence student outcomes.

The current study supports a number of other studies which suggest that in general, interactions with other students influence some type of non-academic outcome. For example, development of leadership skills (Astin, 1993a), students' aspirations and goals for college (Astin, 1993a; Pascarella & Terenzini, 1991), self-awareness, interpersonal and practical competence, humanitarianism and cognitive complexity (Kuh, 1995), participation in community and civic organizations (Schuh & Lavery, 1983), as well as citizenship (Sax & Astin, 1998), are all influenced by student interactions with other students. Findings from this study will add to this body of research.

Results from the third research question that evaluated differences by level of involvement (less involved student leaders versus highly involved student leaders) in regards to each of the discussion items support the body of knowledge as it pertains to the frequency of involvement of SLs. The current study found that highly involved SLs

engage in discussions with students who are different from themselves significantly more often than less involved SLs, and there are significant differences between less involved SLs and highly involved SLs for each of the seven discussion types. These findings further support research which posits that highly involved students spend more time on campus, actively participate in student organizations and activities, and initiate contact with other students more often than less involved students (Astin, 1984).

In addition, findings from the third research question support Astin's Involvement Theory which is important for understanding the influence of student interactions on their experiences. Astin posits that the "amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program" (Astin, 1984, p. 298). Findings from this study support the theory. The SLs were exposed to students different from themselves significantly more often than NSLs, suggesting that the effort SLs exerted benefited them.

My findings also add to prior studies by identifying the strength of the discussion variables in regards to the outcomes that interracial contact can promote. This research suggests that the predictability power of discussions with others whose race or ethnic background is different from one's own on opinion change are not as significant as discussions with others from a different country or with those of a different political opinion. Prior studies have reported that reflective thinking was significantly and positively related to having discussions with students whose race was different from one's own (Kitchener, Wood, & Jensen, 2000); that student-to-student interactions with others from different racial groups influenced students' interest in promoting racial

understanding (Milem, 1993); that openness to diversity was positively influenced by interracial student interactions (Pascarella, Edison, Nora, Hagedorn, & Terenzin, 1996); and that interactions with diverse peers in regards to race influenced students to become involved in activities that challenged exclusionary practices and social injustice (Ximena, Williams, & Berger, 2005). While I did not measure relective thinking, racial understanding, openness to diversity, or social injustice, my findings suggest that interacting with others of a different race does not contribute as much to opinion change as some other factors. If there is a smaller chance that students will change opinons as a result of interracial discussions, it is more difficult to understand how these other outcomes are so influenced by interracial contact.

My findings with respect to discussions with students whose religious beliefs were different from one's own also blur results of prior studies to some extent. Prior studies suggest that discussions with others of different religious beliefs influence students' critical thinking skills (Prendergast, 1998). Though the current study did not examine influence on critical thinking skills, results suggest that these same discussions have less influence on opinion change than other factors. In this case, it is more difficult to understand findings which suggest that discussions with others with different religious beliefs influence critical thinking skills.

This study was designed to address the gap in the literature regarding the influence of student-student interactions on change in opinion among student leaders and non-student leaders. In addressing this gap, implications for future practice, research and policy were revealed.

Implications for Future Practice, Research and Policy

My findings suggest that certain types of discussions are good measures to use to predict opinion change. There are specific actions that can be taken within the higher education community to ensure that student leaders have multiple opportunities for open debate and free expression to inform opinions.

First, student affairs administrators can benefit from this research. Findings suggest that discussions with others who have different political opinions than oneself influence change in opinion for SLs. Student affairs administrators who advise governance student groups like the SGA, the Young Democrats, the College Republicans and the like, typically work with student leaders. During student organization meetings, administrators might use this information to encourage debates between opposing sides in regards to various political issues. The more students are exposed to different types of viewpoints, the more broad their perspectives might become about various issues.

Second, these findings can help guide the work of student activities professionals, particularly staff members who work with SLs in student organizations. One of the findings suggests that discussions with students from different countries influence opinion change for SLs. Staff might encourage American SLs to participate in the events sponsored by international student organizations and likewise, encourage international SLs to attend American student organization events. In addition, the opinion change research reveals that individuals hold opinions that are contingent upon the context in which they are formed. The manner in which individuals work things through in their minds can vary and can be influenced by personal values and personal assumptions based on past experiences (Cantril & Davis, 1999). Attending events sponsored by those from

other countries might spark dialogue between student organization members and therefore better inform their opinions about cultural issues and perspectives.

Implications for future practice exist for faculty members as they are in regular contact with both SLs and NSLs in the classroom. My results suggest that discussions with other students who have different political opinions influence change in opinion. Because most NSLs choose not to engage in co-curricular activities (Erwin, 1983; Williams & Winston, 1985), the classroom is a good place for faculty to strategically create opportunities where NSLs can interact with others within teams who have diverse political opinions. Through simple assessments, faculty members might first identify students with diverse political views and then place them on the same teams to discuss various political issues. By doing so, NSLs will have opportunities to interact with other students different from themselves, and may be more accepting of varied viewpoints.

Academic faculty might also use these findings to enhance SL involvement, both highly involved and less involved, with others different from themselves. Findings from this study suggest that highly involved SLs engage in discussions with students who are different from themselves significantly more often than less involved SLs. Because faculty are often able to identify the highly involved and less involved student leaders in the classroom, they could systematically place SLs in positions to interact with others different from themselves based on the student's typical level of involvement. For less involved SLs, interactions could enhance their exposure with others different from themselves. For highly involved SLs, the level of involvement and exposure to diverse others may be enhanced.

Judicial affairs administrators should also find value in this research. These administrators often try to find ways to address student behavior that involves bias. The findings from this study suggest that discussions with others different from oneself influence change in opinion for NSLs. Judicial affairs administrators can use these results to design programs for NSLs who have committed discriminatory offenses against other students who are different from themselves. Programs might require students to interact in discussion groups of diverse students in an effort to help them have a greater sense of personal responsibility for their actions and a better understanding of differences.

There are implications for future practice for multicultural programs and services as well. In response to climate issues these administrators often search for ways to help students develop a dialogue across differences. Findings from this study suggest that highly involved student leaders engage in discussions with students who are different from themselves significantly more often than less involved SLs in regards to all seven of the discussion types. Therefore, programming efforts that target specific groups of student leaders, both highly involved and less involved, for different forms of dialogue might be useful. For example, administrators in multicultural programs and services might consider developing Sustained Dialogue programs that are student-driven initiatives in which the focus is placed on changing relationships within a community that suffers from ethnic, racial, religious or other deep-rooted differences based on identity, power, misconceptions or interaction issues. Within Sustained Dialogue, the responsibility of shaping and reshaping perceptions of climate issues is on the students (Parker, 2006). Considering the findings that less involved SLs interact with others

different from themselves less often than highly involved SLs, administrators might place less involved SLs in key positions to lead the dialogue. This could help encourage them to become more involved and would allow more exposure to others different from themselves. These interactions could also serve as good opportunities for students to engage in dialogue in a democratic manner, add to their toolbox of leadership skills, and allow them to play a role in improving multicultural issues on campus and especially, informing opinions.

Administrators who advise student orientation leaders should find this research useful as well. They typically work with highly involved SLs who serve as guides for new students coming to campus from very diverse backgrounds. Because the quality and quantity of involvement is associated with student's learning and development (Astin, 1984), administrators might discuss the findings regarding highly involved SLs with these SLs, re-emphasize the benefits of being engaged, and encourage them to maintain their level of involvement.

Career Services advisors might be served well by incorporating the findings of this study into the workshops they offer to students about how to get career-related experience, how to be competitive, and how to exhibit professionalism to prospective employers. My results suggest that discussions with other students who have different political opinions, or are from a different country inform opinions. Generating informed opinions is a valuable skill. Employers are increasingly looking for civility in employees. They value those who have experience and exhibit various leadership traits including the ability to appreciate differences, communicate and work with diverse others, and the

ability to influence and or empower others. Career Services advisors can intentionally

design training sessions in a manner that will help students develop these skills.

This study also has implications for further research. The current study

investigated the influence that discussions with other students different from oneself had

on opinion change. Seven characteristics were considered: individuals who had different

interests; philosophies of life or personal values; political opinions; religious beliefs; race

or ethnic background; family backgrounds or were from different countries. A future

study might seek to predict opinion change based on other items available on the CSEQ,

such as discussions with others of a different age. Such a study might provide insight

regarding the influence of student interactions on opinion change based on students' level

of maturity.

The present study explored the influence of student-student interactions on change

of opinion among student leaders (SLs) and non-student leaders (NSLs) using

quantitative methods. A future study might look at similar factors but add qualitative

components such as interviews and focus groups. For example, a future study might

employ open-ended questions to interview students whose opinions changed after having

discussions with other students who were different than themselves. Questions might

examine why opinion changed after such discussions. Understanding why opinions

changed and what most influenced those changes would enhance our knowledge about

interpersonal influence.

There are also implications for future research using a longitudinal study. The

sample used in this study included students who were enrolled for the 2004 school year,

which was a presidential voting year. One of the most significant predictors of opinion

change for this study was discussions with students who had different political views than oneself for both SLs and NSLs. During the next presidential election year, a longitudinal study examining a cohort of incoming freshman throughout their time in college might be useful. The longitudinal study would allow for trends to be tracked over a four to five year period to determine whether political activity has any influence on students' opinion change over the course of their educational career.

The current study examined differences in opinion change between SLs and NSLs. A future study might look at differences using other characteristics like academic major. Such a study could help higher education administrators identify academic departments that might benefit from enhancing or incorporating organized opportunities for students to routinely collaborate with other students different from themselves during classroom activities.

This study found that two of the seven types of discussions were the most significant predictors of change in opinion for SLs and NSLs. A future study might employ follow-up questions about each of the discussion types to better understand why some items were more significant predictors of opinion change than others.

Future research is also needed to examine students' exposure to diverse others prior to their admission to college. With the push for incorporating more global education in higher education curricula, this investigation would allow the researcher to asses the unique influence that discussions with college students different from oneself has on opinion change, versus international involvement students may have had before coming to college. More information about students' exposure to diverse others would be valuable for researchers to control for students' pre-college experiences.

In addition, these results have implications for future policy. At the state level, administrators might institute funding policies that allocate dollars for programs that encourage student interactions with those different from themselves. At the institutional level, implications for assessment activity apply to higher education programs. In addition, there are implications for minority-serving institutions to ensure that their students have ample opportunity to interact with diverse others.

Policymakers who manage funding for higher education programs should pay attention to these findings. Discussions with others from a different country are the most significant predictors of opinion change for all students (SLs and NSLs). This finding is insightful because it implies that cross-cultural preparation is important. Policymakers might consider that when allocating funding for study abroad programs or enhanced opportunities for students to travel abroad. Policies related to international students might also be informed by this finding.

Policymakers who monitor institutional assessment activity may find value in this research. Findings emphasize the fact that highly involved student leaders are exposed to diverse individuals significantly more often than less involved SLs. These findings provide policymakers with more information about the impact of college student involvement. It might be useful in establishing institutional policies that promote student involvement to provide them with opportunities to interact with diverse others. These opportunities might enhance their involvement and potentially increase their acceptance of diverse viewpoints and perspectives.

Institutional-level policymakers who establish protocols in residential leadership communities (in which students interested in leadership development live in the same

residence hall) should use these findings as well. Findings suggest that discussions with students different from oneself influence change in opinion. Policymakers might use these findings to guide room assignments for the residential leadership community. They could collect data about various personal characteristics and interests, and intentionally assign students with different interests or backgrounds with one another, to encourage discussions with those who differ from oneself. By doing so, students might be more open to opinion change and openness to opinion change might enhance their ability to view issues from multiple perspectives, a sign of higher level cognitive reasoning (Perry, 1968).

There are also implications for future policy for leaders at minority serving institutions (MSIs) like historically Black colleges and universities, Hispanic-serving institutions, tribal colleges and Asian American/Pacific Islander-serving institutions. MSIs have a specific focus on serving the needs of minority students. Though they serve non-minority students as well, their student enrollment may primarily consist of a specific demographic group of students. Findings from this study suggest that discussions with others from a different country influence change in opinion for all students (SLs and NSLs). Because interactions with diverse others might be limited at MSIs, leaders at MSIs may use these findings in two ways. First, outreach policies might be implemented that encourage non-minorities at MSIs to engage in Sustained Dialogue programs with minority students. Second, leaders at MSIs might focus outreach efforts on partnering with other MSIs, as well as predominately White institutions (PWIs). These interactions will allow diverse students from different types of institutions to engage in

dialogue which may give them more exposure to others different from themselves and, in turn, may better inform opinions.

These findings also have implications for diversity in general. Social psychologists define student diversity interactions as exchanges with diverse others and exposure to diverse ideas, experiences and information. They assert that the more interaction people have with other individuals who hold different views, or the more people learn about different aspects of human diversity, the more they will be able to respond to differences effectively (Umbach & Kuh, 2003). Findings that highlight the influence that discussions have on opinion change relate to these assertions.

To the extent that change in opinion or openness to change and difference (Chang, 1999) is a goal of higher education and a necessary condition for participation in a democratic society (Astin, 1993), diversity-related interactions or conversations with a diverse group of peers is important. Findings from this study suggesting that discussions with students of different political views may influence opinion change will add to this body of knowledge.

The findings from this research have several implications for future practice, research, policy and diversity. However, there were some limitations associated with this study.

<div align="center">Limitations of the Study</div>

The first limitation involves the process used to determine which students would be considered student leaders. Students were identified as SLs based on their responses to items on the 2004 College Student Experiences Questionnaire (Pace, 1984) about how often they attended certain activities on campus (i.e., a meeting of a campus club,

organization, or student government group), or how often they managed or provided leadership for a club or organization on or off the campus. Many definitions exist that describe a leader. If a different definition had been used, results might have been different.

A second limitation involves the unequal sample sizes used for SLs and NSLs. The sample consisted of 1400 SLs and 523 NSLs. Though problems occasionally occur when using unequal sample sizes, I chose not to randomly select a smaller sample from the SL sample to correlate with the NSL sample due to possible issues this approach might create related to sampling error when running inferential statistics.

Next, limitations exist related to the factors used to predict opinion change. I chose seven factors from the CSEQ instrument to examine influences on opinion change. If other factors had been chosen that were a part of the CSEQ instrument, the final results of the regression model used to predict change in opinion might have been different.

Finally, interactions with students different from oneself were identified by two different types of items on the CSEQ, discussion and acquaintance items, but both were treated as general interaction items. For example, some items were phrased, "Discussions with students from a different country," and others were phrased, "acquainted with students of different backgrounds." If respondents interpreted these items differently, results may be skewed to some extent.

Despite the limitations, this study provided valuable information about the influence of student-student interactions on change of opinion among student leaders (SLs) and non-student leaders (NSLs). Literature prior to this study has focused on the purpose of institutions of higher education and how leaders have been trained to serve the

community. Various qualities and skills necessary to be an effective leader have been discussed in the literature as well. The uniqueness of this study however, is that results identified specific types of discussions higher education institutions can encourage SLs and NSLs to have with diverse others that will influence change in opinion. This study challenges the argument that leaders are born. Instead, it suggests that leaders can be taught through interactions the ability to develop an informed opinion and influence change in opinion among others. Findings from this study suggest that these leadership skills can be intentionally developed. If this is the case, higher education can help students be more effective and be better prepared leaders.

Findings regarding student leadership status and change in opinion were surprising. Results suggest that discussions with others different from oneself influence change in opinion for both SLs and NSLs, suggesting that leadership status does not seem to be a factor. My findings however, challenge prior research which focuses specifically on inter-group contact and how leaders influence outcomes. These results provide venues for higher education administrators to pay closer attention to the role that non-leaders play as well.

Additionally, this study highlights the importance of dialogue in general. Student affairs administrators have one of the most salient roles within higher education to create student leaders who are contributing members of society and who are able to generate informed opinions. Since that often depends on an ability to deal with differences in a positive manner, findings from this study can be used to help administrators train students who go on to be productive citizens.

The purposes of higher education include promoting growth of the individual student, advancing pure learning, enhancing human capability, and ensuring educational justice (Kerr, 1994). Findings from this study suggesting that engaging in dialogue with diverse students influences opinion change support these higher education efforts.

Finally, students can be taught through interactions with diverse others the ability to develop an informed opinion and influence change in opinion among others. These talents can be transferred to professional leadership positions and can equip leaders to incite change in government, business, communities, and the world. With these skills, future leaders of tomorrow can help transform the nation to the true and just democratic society we all strive for.