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The Impact of Role Conceptualization on the Process and Outcomes of Decision Making in an Educational Context

Scott Richard Turner
University of Tennessee - Knoxville

To the Graduate Council:

I am submitting herewith a dissertation written by Scott Richard Turner entitled "The Impact of Role Conceptualization on the Process and Outcomes of Decision Making in an Educational Context." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Industrial and Organizational Psychology.

Michael C. Rush, Major Professor

We have read this dissertation and recommend its acceptance:

Dave Woehr, Michael McIntyre, Elaine Seat

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

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THE IMPACT OF ROLE CONCEPTUALIZATION ON THE PROCESS AND OUTCOMES OF DECISION MAKING IN AN EDUCATIONAL CONTEXT

A Dissertation
Presented for the
Doctor of Philosophy
Degree
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Scott Richard Turner

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ABSTRACT

Research has shown that the traditional conceptualization of Organizational Citizenship Behaviors (OCBs) is not tenable because some employees perceive OCBs to be part of their job or in-role behaviors (Morrison, 1994). Conceptualizing behaviors as in-role has been shown to increase the frequency of the behaviors but no study has investigated whether conceptualization of these behaviors influences the manner in which they are conducted. This study combined findings from OCB research with the Judgment and Decision Making literature in order to identify the impact that role conceptualization had on an ambiguous decision making exercise where the act of making the decision could have been considered an OCB. It was hypothesized that role conceptualization would influence the decision-making process used and outcomes associated with the decision. This influence was hypothesized to result in decisions that are more systematic if participants perceived the task as part of their job. Additionally, it was hypothesized that personal characteristics or work context would influence decisions and that effect would be moderated by role conceptualization. Results indicate that role conceptualization was not significantly related to the use of relevant student characteristics. Teachers who considered the decision-making task as an important part of their jobs were actually less consistent in their decisions to recommend college. Finally, while there was evidence that personal and work characteristics influenced the decision outcomes and processes, there was no support for the moderating effects of role conceptualization.

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CHAPTER I

INTRODUCTION

The primary aim of this study is to integrate findings from the judgment and decision-making (JDM) literature with those from the area of organizational citizenship behavior (OCB). Specifically this study will look at decision making in a school context as it relates to educators recommending career options to students. The OCB and JDM literatures are especially applicable in this context because, from the role of a teacher, recommending career options falls within the realm of OCB (cf., Tepper & Taylor, 2003).

Organizational citizenship behavior is defined broadly as those behaviors that are discretionary (i.e., extra-role) and intended to enhance the performance of the organization or the conditions under which the work is conducted (Organ, 1988, 1990, 1997; Van Dyne, Cummings, & McLean Parks, 1995). However, the behaviors traditionally conceptualized as extra-role are not always perceived or construed as extra-role by employees (Morrison, 1994). Many employees consider OCBs to be an important part of their job (i.e., in-role). An in-role conceptualization of behaviors has been shown to result in a higher frequency of OCBs and to moderate the relationship between OCB and procedural justice (Tepper, Lockhart, & Hoobler, 2001; Tepper & Taylor, 2003).

Inconsistency between employees about the requirements of a role is not necessarily a new concept. Role theorists have long argued that the particular role requirements perceived by the employee within a job are partially determined by the work requirements and partially determined by the social environment (Sanchez & Levine, 2000; Weick, 1979). Furthermore, the broader context of the work, such as the task environment and interpersonal relationships, is often cited as a factor that determines array of behaviors that are part of one's role (Biddle, 1986;

Cappelli & Sherer, 1991; Johns, 1991; Katz & Kahn, 1978; Peters & O'Connor, 1980). Van der Vegt, Emans, and Van De Vliert (2000) indicate that the perception of specific role behaviors can change greatly from person to person especially in interdependent social contexts. As a result, differences in role conceptualizations will develop across employees even in the same context.

This study will extend OCB role conceptualization research by investigating the influence role conceptualization has on decision making (i.e., decision to recommend career options). Research in the JDM field has revealed that the conceptualization of the decision can influence decision making by changing the way information is weighted or valued while evaluating the decision alternatives (i.e., the process of decision making) or by influencing the decision outcome (e.g., which decision alternative is chosen or the rating given to an option; Fischoff, 1992; Kahneman & Tversky, 1984; Kray, 2000; Kray & Gonzalez, 1999; Lowenstein, Weber, Hsee, & Welch, 2001; Weber & Milliman, 1997; Tversky & Kahneman, 1974). These findings have particular relevance to OCB when we consider that in some circumstances an employee may be uncertain whether a decision making task that is intended to help another in the organization (OCB) is in-role or extra-role (i.e., role conceptualization of the behavior). In this situation, the employee's determination about the prevailing nature of the behavior may influence the processes and outcomes of the decision making task.

For example, one of the functions of a school is to prepare students for future careers. As students approach the end of high school they often find themselves faced with questions about how to proceed with a career and they turn to available resources such as teachers and guidance counselors for help (Marsh et al., 2004). Educators are often asked to help a student determine the best career path. In this situation, educators must evaluate the student based on known

information and decide for which career option is the student best equipped and which option would be most beneficial for the student. For a guidance counselor, this activity clearly falls into in-role behavior. Guidance counselors are tasked with educating students about career options and helping them evaluate their desires, resources, and capabilities so that they can find the best career (U.S. Department of Labor, 2005). However, a teacher's primary role is to impart knowledge and skills to a student (U.S. Department of Labor, 2005). From a teacher's perspective, recommending career options would fall into the extra-role/OCB category. However, previous studies have shown that employees differ in their conceptualization of OCB, some considering the behaviors in-role and others extra-role (Morrison, 1994; Tepper, Lockhart, & Hoobler, 2001; Vey & Campbell, 2004).

Since different conceptualizations of decision-making tasks have been shown to implicate different reward structures, it is hypothesized that the way a decision is made will be influenced by the role conceptualization (i.e. in-role vs. extra-role) the decision maker takes regarding the behavior. The remainder of this chapter will explain the pertinent details of OCB and JDM research that support the assertions made above and develop detailed hypotheses about the relationships between role conceptualization and decision making.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

Organizational Citizenship Behavior

Many studies have investigated different factors that influence the frequency or likelihood of performing OCBs, including satisfaction (Bateman & Organ, 1983; Brief & Motowidlo, 1986; Organ & Konovsky, 1989; Smith, Organ, & Near, 1983), different forms of justice such as procedural/distributive justice (Konovsky & Pugh, 1994; Moorman et al., 1993; Organ & Moorman, 1993), interactional justice (Bies & Moag, 1986; Coyle-Shapiro, 2002; Moorman, 1991), and individual differences (Organ & Ryan, 1995; Vey & Campbell; 2004). One factor that has demonstrated a strong relationship with the frequency of OCBs is role conceptualization (Morrison, 1994; Tepper, Lockhart, & Hoobler, 2001; Vey & Campbell, 2004).

The primary findings in the studies that explored role conceptualization are that (a) not all of the behaviors typically measured in the OCB literature are considered extra-role by employees or supervisors and (b) an in-role conceptualization of OCBs by employees results in a greater frequency of the behaviors (Morrison, 1994; Tepper, Lockhart, & Hoobler, 2001; Vey & Campbell, 2004).

Morrison (1994) investigated the influence of an employee's role breadth on self-reported and supervisor reported OCB frequency. Based on a five factor OCB measure and actual in-role behaviors, employees reported whether or not they considered each behavior to be part of their job (in-role) or beyond their job requirements (extra-role). Morrison (1994) demonstrated that the behaviors typically measured as extra-role/OCBs were frequently seen as in-role behaviors by employees. Furthermore, this study demonstrated that an employee's perceived job breadth

differed significantly from the supervisor's description of the employee's role and that an employee's role breadth affected the frequency of OCBs. These findings led Morrison (1994) to conclude that, "the boundary between in-role and extra-role work behavior is ill-defined and subject to multiple interpretations" (p. 1544)

Tepper, Lockhart, and Hoobler, (2001) extended the work of Morrison (1994) by investigating the influence employee perceptions of OCB, termed role definition, would have on the relationship between perceptions of justice and OCB. The work of Tepper, Lockhart, and Hoobler, (2001) stems from the assertions of Organ (1990) who indicated that OCBs are a means by which an employee could reconcile perceived inequities. Employees who perceived fair treatment would reciprocate by performing more OCBs while employees who perceived unfair treatment would withhold OCBs as a means of acquiring justice. The relationship between procedural justice and OCB has supported this assertion (Konovsky & Pugh, 1994; Manogran, Stauffer, & Conlon, 1994; Moorman, Blakely, & Niehoff, 1998). However, Morrison (1994) found support for an alternative explanation whereby employees with attitudes that are more favorable define their job more broadly to encompass behaviors that are traditionally measured as OCBs. Morrison's findings suggest that an in-role definition of OCBs results in a higher frequency of OCB. The assertions of Organ (1990) and Morrison (1994) seem to conflict as explanations for the relationship between attitudes and OCBs. Organ contends that attitudes result in more OCBs because OCBs are a way of returning favor while Morrison found that attitudes are related to greater role breadth and thus a higher frequency of OCBs.

In order to test these two assertions, Tepper, Lockhart, and Hoobler, (2001) proposed two models: role enlargement and role discretion effects. The role enlargement model hypothesized that role definitions would mediate the relationship between procedural justice and OCB. This

hypothesis was based on the findings of Morrison (1994) who indicated that an in-role definition of OCBs was the mechanism by which attitudes are related to OCBs. However, the role enlargement model was not supported. The role discretion effects model proposed that role definition would moderate the relationship between procedural justice and OCB. This model stems from the assertions of Organ (1990). The role discretion effects model was supported in a sample of students and employees and was replicated by Tepper and Taylor (2003) in a sample of National Guard employees and supervisors.

Findings such as these led Organ (1997) to revisit some important aspects of the definition of OCB. He concluded that it may be better to adopt the term non-task behavior to differentiate it from another closely related construct, contextual behavior (Borman & Motowidlo, 1993). By including the term non-task as part of the definition for OCB, Organ (1997) removed the strict in-role/extra-role distinction included in the original definition. The change in definition addressed many of the findings that identified the disparity between perceptions of OCB by employees and supervisors (Allen, Barnard, Rush, & Russell, 2000; George & Jones, 1997; Kidder & Mclean Parks, 2001; Lam, Hui, & Law, 1999; Pond, Nacoste, Mohr, & Rodriguez, 1997; Tepper & Taylor, 2003; Turnipseed & Rassuli, 2005) and employees' perceptions of OCBs as either in-role or extra-role (Morrison, 1994). The change in definition allows an employee to conceptualize an OCB as either in-role or extra-role. This allowance is important because it captures the effect that a differential perspective of OCB by an employee may impart on the frequency of behavior resulting from different sets of consequences and rewards that stem from the behavior. It is clear from the studies that explored the effects of differences in the conceptualization of OCB that an employee's conceptualization of a behavior as either in-role or extra-role influences the frequency of behavior. However, one question not

addressed in the OCB literature is whether role conceptualization influences the way employees enact these behaviors (e.g., the level of skill and effort brought to bear) or the outcomes associated with the behavior (e.g., effectiveness of the behavior).

An underlying assumption pertaining to OCB research is that behaviors exhibited by individuals are equivalent, meaning that when employee A "helps" employee B, it is the same as if employee C "helps" employee B. However, consider the perspective of employee A who sees helping other employees as part of his job (i.e., in-role). In fact, employee A feels that if he fails to help employee B, when help is needed, his supervisor will punish him for "not being a team player" by giving him less desirable work. When the time comes for employee A to help employee B, employee A is harsh and derogatory with employee B for not doing his part, for not foreseeing the circumstances that have led to a situation that would require help, and for taking time away from employee A's work. Employee A proceeds to help employee B but only does enough to ensure that his supervisor cannot hold him accountable for not doing his job.

How does employee B feel about the help received during this interaction? It is quite possible that employee B would feel discouraged and ineffective because he needed help and it was offered in discourteous manner. How would this helping behavior influence employee B's future performance? Employee A may have helped employee B catch up with the work but he offered no information on how to prevent this situation in the future; therefore, this situation may occur again.

Conversely, let us consider Employee C who does not see helping other employees as part of her job (i.e., the behavior is extra-role). When Employee C helps another employee it is done on the basis of the relationship that she has with the employee who needs help. When employee C notices that employee B is in need of help, she evaluates whether or not she will

offer aid to employee B based on their relationship. If the relationship is in good standing, employee C offers her help with a benevolent attitude, seeking to understand employee B's needs and take actions to remedy those needs wherever possible. Not only will Employee C offer help with the immediate situation but she may also help prevent these situations from happening again by teaching employee B the indicators of and remedies to the situation. As a result of employee C's helping behaviors, employee B would not only feel better about receiving help but would also have a strategy for preventing the need for help in the future.

Finally consider employee D who also sees helping other employees as an extra-role behavior like employee C. However, employee D does not have an established relationship with employee B. In this case, it may be that employee D would not help employee B because there is no relationship on which to base the help.

To summarize, employee A helped employee B due to an in-role conceptualization of helping behavior. He did so out of fear of retribution from his supervisor and did it with a poor attitude. The result was that the work was accomplished but the problem was likely to occur again. Employee C helped with an extra-role conceptualization. She helped with a benevolent attitude and offered additional tips for the future that would help prevent a similar occurrence. Finally, employee D also held an extra-role conceptualization but since there was no relationship upon which to base the helping, employee B did not receive help. This example illustrates that differences in role conceptualization can influence the reasons for participating in OCBs, the methods used to complete the behavior, and the outcome of the behavior. Research in the area of JDM offers interesting insight into the processes that may explain how role conceptualization can influence behavior.

Judgment and Decision Making

Judgment and decision making was first hedged as and is often thought of as rational, mindful behavior (Simon, 1955; Hitt & Middlemist, 1979; MacCrimmon & Taylor, 1976; March & Simon, 1958). Under this paradigm, a person is thought to make a judgment about each of several alternatives. Each decision alternative differs from another based on a set of attributes. The decision maker is tasked with determining which decision alternative is most desirable based on the attributes that it possesses. That is, the judgment or a decision is thought to be a function of the attributes possessed by each alternative and the judge's rational value of each attribute.

As an example, consider the task of choosing a new car. In this task, assume that a judge is choosing between two alternatives, car A and car B. Each alternative varies on several different characteristics or attributes such as fuel economy and style. Car A has high fuel economy and low style. Car B has low fuel economy and high style. In this situation, the judge would choose based on his or her preference for the given attributes. These preferences are often thought of as weights placed on the attributes. If the judge preferred a stylish car, clearly car B would be the choice. Conversely, if fuel economy were of primary interest, car A would be the choice.

Many JDM studies have used the rational decision making perspective as a straw man, identifying several biases and heuristics that appear to violate the assumptions of rationality (See Miljkovic, 2005 for a review). Such studies argue that decision making is more of an automatic process as opposed to a rational, controlled process. Automatic processing is said to be a function of selective attention processes. Automatic processing takes place when cues from the environment activate rules for behavior. The rules for behavior are learned early in life and are honed into mechanisms that require limited attention and cognitive processing capacity (Bargh &

Chartrand, 1999; Bargh & Gollwitzer, 1994; Klein, 1989; Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977). The litany of deviations from the rational model is strong evidence that JDM is more appropriately viewed as automatic behavior (Gigerenzer, 2004).

In response to the consistent evidence of automatic processing in decision making, as evidenced by heuristics and biases, Gabaix and Laibson (2000) argued that as the number of attributes used to describe the decision alternatives increases, there is a corresponding increase in the complexity of the situation that makes a rational, mathematical evaluation of the decision alternatives very difficult (Slovic & Lichtenstein, 1971; Tversky & Kahneman, 1974; Slovic, Fischoff, & Lichtenstein, 1977). Consequently, it is argued that decision making can be considered to occur on a cognitive continuum ranging from purely rational to intuitive cognition (Hammond, 1980, 1981; Kahneman & Tversky, 1982). Rationality can be distinguished from intuitive cognition by its reliance on procedures and rules resembling a serial processing event that is logical and mathematically based. In contrast, intuitive cognition is quick and effortless, more like a parallel process relying heavily on inference. Using the framework of the cognitive continuum, Hammond (1996) concluded that most decision making tasks are quasirational, relying on some mix of intuition and cold rational analysis.

Research done to illuminate the biases and heuristics used in intuitive decision making has indicated that the perspective taken or the construal of the decision situation plays a very important role (Tversky & Kahneman, 1981). This is demonstrated in the consistent finding that a person's construal of risk influences the choice to engage in risky behavior (Loewenstein, Weber, Hsee & Welch, 2001; Weber & Milliman, 1997).

Loewenstein et al., (2001) reviewed the literature that investigated decision making in uncertainty (i.e., where the outcome is unknown, also known as decision making under risk) and

offered a new perspective called risk-as-feelings. The authors contend that to rely on subjective probabilities or expectation-based calculus to determine the outcome of a decision misses some of the most influential factors involved in decision making, one of those being the way the situation is construed. They claim that feelings influence cognitive evaluation which impacts the decision making process. These feelings are partly a function of the subjective evaluation of the decision-making situation. The terminology used in the JDM literature makes the relationship between the situation, feelings, and decision making somewhat more obvious by calling it decision making under "risk". The term "risk" alludes that the situation is potentially hazardous or in some way dangerous to the decision maker which would lead to enhanced feelings about the situation. Thus, the decision-making situations might be evaluated based on the amount of inherent risk or uncertainty associated with the decision. In many cases, there is no risk to the subject but simply a lack of confidence or uncertainty that the desired outcome will be achieved. Conversely, some decisions could lead to disastrous outcomes for those involved (Beisswanger, Stone, Hupp, & Allgaier, 2003; Fischhoff, 1992; Furby, Fischhoff, & Morgan, 1992). It is assumed that as the risk or uncertainty associated with a decision making situation decreases, the influence of the emotions elicited by the situation would also decrease. However, other researchers have shown that even in situations where the risk to the decision maker or uncertainty associated with the situation is minimal (e.g., an advice-giving situation), the construal of the situation can have an impact on decision processes and outcomes.

For example, Jonas and Frey (2003) found that the difference in construal between a work role and personal role influenced the processing of information in a decision. They found differences between participants in an advice-giving task where the participants were either in

the role of a travel agent or the role of a friend (i.e. work role vs. personal role). Participants were required to make a decision about which vacation to recommend to a client or friend.

In this study, the authors investigated the differences in search processes for information used to support a final decision (i.e., the decision processes; Fischhoff, 1992; Kray, 2000; Kray & Gonzalez, 1999). In this paradigm of decision-making research, participants are given opportunity to gather information to support their final decision. Generally, the information is set up either so that it is in favor of or opposed to a particular decision alternative. Furthermore, participants are assigned to one of two roles, either advisor, a person who makes a recommendation to a client or advisee, or the decision maker (i.e., the client or advisee). Actually, both roles are given the task to make a decision but for one, the decision maker, the outcome of the decision has consequences. Furthermore, the decision maker's initial preference is known and communicated to the advisor. Therefore, when the advisor and decision maker are reviewing information, each one has the opportunity to choose pieces of information that are either consistent or inconsistent with the decision maker's initial preference.

Research on information search in decision making has shown that advisors, those making a recommendation, often perform a more balanced search of information including both information that supports and conflicts with the initial preference; whereas those receiving the advice, the deciders, are more likely to seek confirming evidence that supports their initial preference and avoid conflicting information (Frey, 1986; Frey, Schulz-Hardt, & Stahlberg, 1996; Jonas, Schulz-Hardt, Frey, & Thelen, 2001; Schulz-Hardt, Jochims, & Frey, 2002). Thus, where the decision-making situation has consequence for the person involved, the information search/decision process (i.e., the process of acquiring information upon which the final decision will be based) is biased.

Following consistent findings that there is a difference between advisors and deciders in the information search process that is used to support a final decision, Jonas and Frey (2003) compared the information search processes and information presentation of a travel agent, friend, and a decider to determine if the advice giving context influenced the decision making process through information search and presentation. Consistent with previous research, they found that decision makers sought more confirmatory information than did advisors. Advisor role (travel agent or friend) did not influence the information search with each role seeking both supporting and conflicting information. However, advisor role did influence information presentation with friends providing about the same amount of both confirmatory and conflicting information and travel agents presenting more confirmatory information. The authors attributed this difference in the decision making process between the work role and friend role to be due to incentive structures or expectations that were cued by the situation. They indicated that, "friends who serve as advisors might consider it important not to influence their client-friend but instead to help the friend to consider advantages as well as disadvantages of the decision alternatives," while "advisors in a business context usually have an incentive to sell their recommendation to the client," (Jonas & Frey, 2003, p. 166).

Additionally, Jonas and Frey (2003) indicated that the differences between advisors and deciders may be the effect of motivational forces acting differentially as a result of differences in the role perspective. This argument is consistent with Kruglanski (1989, 2000) who states that different situations instill different goals or motivation sets when making a decision. In particular, two types of goals can be influential in decision making: accuracy goals, the desire to arrive at an accurate conclusion and directed goals, the desire to arrive at a particular conclusion. Accuracy goals, that is when people expend more cognitive effort and attend to relevant

information, are more likely to engender the use of rational evaluation processes. Accuracy goals tend to result in thorough information search (Johnston, 1996; Kunda, 1990; Lundren & Prislin, 1998), and motivation to arrive at the best possible solution or outcome for the situation. Directed goals are the desire for a specific outcome and can stem from personal preferences or other influences. Directed goals are likely to result in shallower processing, and susceptibility to confirmatory information search that supports the outcome that is desired (Kunda, 1990). These different goals compete to dominate the decision making process and the motivation that prevails will bias the judgmental conclusion in a motivationally congruent manner. One factor that may be influential in distinguishing between or strengthening these goals is the context.

Ross and Nisbett (1991) suggest that context affects decision making by influencing the construal of the nature of the situation and hence the rules of behavior that apply. Past experiences and current beliefs about such situations will be recalled as a reference for the situation, changing the mind set of the participant or framing of the situation in a way that is congruent with the participant's personal preferences and understanding of the rules and contingencies for what type of behavior is appropriate for the situation (Kahneman & Miller, 1986).

Katzner (2000) in an attempt to account for one's construal of a decision making situation has developed a mathematical model that takes into account the influence of culturally-determined differences in decision making, finding that, "individuals coming from different cultural backgrounds have different perceptions and different standards for interpretation, judgment, and action; it would seem imperative that explanations of economic behavior arising in different cultural environments would necessarily require the construction of different models" (p. 242). Cultural differences represent one of many systemic variables that may

influence the way people construe a decision-making situation and thus, the decision-making process and outcomes.

Research in the JDM field has indicated that the perspective one takes when making a decision can impact the decision-making process and outcomes. First, people do not always follow the rational model when making decisions. Often, the complexity of the decision precludes an objectively rational, truly mathematical approach to identifying the best possible outcome. Second, the situation may influence the perception of risk attached to the decision. The level of risk (i.e., uncertainty) in a decision has been shown to stir feelings that change the manner in which information is weighed and used to achieve a final decision. Third, as Jonas and Frey (2003) demonstrated, the perspective taken by a decision maker will also influence the amount and type of information used in a decision making exercise. Specifically, they showed that there were differences between a work role and friendship role in the type of information presented to support a decision. Finally, several authors indicated that the situation or construal of the decision making exercise may influence the decision making process and outcomes by bringing to the decision maker's attention different goals, motivation sets, and reward or accountability structures. Taken together, these findings indicate that the manner in which a person construes a situation or task, such as the difference between an in-role and extra-role task conceptualization, may play a part in determining the effectiveness or quality of the behavior exhibited.

Evidence that the manner in which a person construes the decision making context influences the decision making process and the outcome of the decision, has implications for other areas of investigation. As mentioned previously, the research on individual work performance is one area where this phenomenon may play a part. Several studies have shown

that work performance is broadly a function of the task behaviors specified for the job and extra-role activities that are directed either at individuals within the workplace or the organization as a whole (Barksdale & Werner, 2001; Katz & Kahn, 1978; MacKenzie, Podsakoff, & Fetter, 1991; Orr, Sackett, & Mercer, 1989; Werner, 1994). As noted, the distinction between what is part of a person's job and what would be beyond the job was investigated by Morrison (1994) who concluded that the manner in which an employee defines his or her role will influence the way a behavior is framed. The delineation of behavior as either in-role or extra-role leads individuals to consider different consequences and rewards, which can lead to differences in the frequency of OCBs.

While existing research has shown that role conceptualization influences the frequency of or the likelihood to participate in OCBs, no study has explored the effect of role conceptualization on the manner in which these tasks are performed. Recall from previous discussion that in a high school setting, students often ask teachers for advice about future career decisions. As a result, teachers must evaluate the student to determine which career path would be most beneficial for the student and where the student is likely to succeed. This helping behavior is certainly not prescribed by the teacher's job description; however, many teachers do offer assistance. Some are likely to help the student because they personally want to help, while others may see it as part of their job responsibilities to not only educate but also to guide students when they need help. Role conceptualization, educators' perceptions of what is and is not an important part of their jobs is the distinction between personally helping a student (extra-role) versus giving guidance because it is one's job (in-role) will be the focus of this study. This is consistent with the role theory literature, which suggests that work roles are partially a social construction that reflects not only the requirements of the job but also the perceptions, attitudes,

and opinions of those who fill the roll (Morgeson & Campion, 2000; Sanchez & Levine, 2000; Weick 1979). These factors come into play beyond the role requirements and are reflected in the role expectations or beliefs about what the role entails (Katz & Kahn, 1978; Illgen & Hollenbeck, 1991). These beliefs or expectations come together to determine the role conceptualization and are believed to precede behavior (Jackson, 1981). The purpose of this study is to determine the impact that conceptualization of guidance behaviors or guidance role concept (i.e., whether or not giving career guidance information to students is an important part of the job vs. not an important part of the job) will have on the way an ambiguous decision making task (career recommendation) is performed.

In order to investigate the aspects of educator decision making outlined above, this study will use policy capturing methodology (Slovic & Lichtenstein, 1971; Zedeck, 1977). Policy capturing is a technique that allows for the estimation of individual attribute weights for each decision maker. Policy capturing uses several different independent variables to create scenarios that are judged by decision makers. The judgment or decision is regressed onto the independent variables to determine the relative weighting assigned to each independent variable.

For the purposes of this study, the decision scenarios represent individual students that the educators will have to evaluate based on their attributes (i.e., the independent variables; for example, race, cognitive ability, ability to pay for additional education) and then make a judgment (i.e., the dependent variable) based on this information. The decision in this case is the likelihood that an educator will recommend each of three possible career options: go to college, go directly to work, or join the military. Each of the dependent variables (i.e., the three judgments about the likelihood to recommend each career option) are regressed onto the independent variables (i.e., the student attributes: academic ability, race, etc.) resulting in a

regression equation with weights for each independent variable and an intercept value. The advantage of this method is that the weights represent the relative importance of each variable in the Educator's judgment process. Furthermore, the regression equation obtained for each participant indicates a level of bias for recommending a specific career option as indicated by the intercept value and an index of discrimination as indicated by the slope of the regression line. Higher values of the intercept indicate that the participant is more likely to recommend the given career option while lower values indicate that the participant is unlikely to recommend the option. Large slope values indicate that the educator is more likely to take into account the student characteristics when making their decision about a specific career option. Taken together, the weights assigned to each independent variable depict the decision making process and the intercept and slope value represent the decision outcome characteristics of each educator.

Hypotheses

Educators who have an in-role conceptualization of making career recommendations to students or a high guidance role concept (GRC) will have two influences acting upon them. First, they will be more accuracy motivated because they see the decision to offer a recommendation as part of their job. Recommendations made as part of ones job will be seen as being susceptible to evaluation by supervisors. Decisions made from an in-role conceptualization will be done with an emphasis on achieving the best possible outcome and as such will be made with the aim of identifying the future career that will provide the most likely route to success for the student. Therefore, educators who report that giving student's career guidance is an important part of their job or a high GRC will use decision rules that rely on career related independent variables (i.e., academic ability and ability to pay for additional education) whereas educators who report that giving career guidance is not important to their

jobs or low GRC will use decision rules that may incorporate variables that are not related to one's ability to be successful in a career (i.e., race). Consequently, GRC, where higher scores indicate that guidance behaviors are considered more important to the educator's job (i.e., a high guidance role concept) and lower scores are less important to an educator's job (i.e., low guidance role concept), will be positively related to career related independent variables and negatively related to variables that are not career related.

Hypothesis 1: Guidance Role Conceptualization (GRC) will have a significant positive relationship with regression weights for academic ability, desire for additional education, and ability to pay for additional education but a negative relationship with the regression weights for race.

Educators may vary in their reliance on a decision making rule. Larger R^2 values for a regression equation indicate that the educator consistently made recommendations based on the weights calculated in the model. Therefore, R^2 is a measure of consistency for applying the decision weights identified in the analysis. Educators who hold an in-role conceptualization of guidance behaviors (i.e., high GRC) will be more likely to apply their decision rules more consistently because they fear that inconsistent work performance would make them more susceptible to punishment from supervisors.

Hypothesis 2: Educators with high GRC will be more consistent in the application of the decision rule than educators with low GRC and thus will have a larger R^2 for their regression equation.

Recall from the discussion on accuracy and directed motivation/goal that an accuracy motivation/goal is aimed at finding the best possible solution to a decision and directed motivation is aimed at securing a desired outcome whether or not it is the best outcome. It was

stated that accuracy motivation could be related to in-role conceptualization of making a career recommendation (i.e., when it is an important aspect of the job or a high GRC). An in-role conceptualization of an activity associates the activity with potential rewards and punishments associated with the accountability of the job. Conversely, an extra-role conceptualization, or when giving career guidance is not an important aspect of the job, does not attach personal consequences to the outcome of the decision making task. Additionally, educators with high GRC will be more likely to adhere to stated organizational norms or pressure due to the rewards and accountability associated with an in-role conceptualization of recommending career options to students. However, when a person takes the view that recommending a career option to a student is not an important part of the job, other influences that are not related to the job can have an impact on the decision outcome. For example, an individual difference variable such as political affiliation may play an important role in determining whether educators recommend the military as a potential career path for students. Educators who hold a more conservative affiliation may be more likely to endorse the need for a strong national defense and encourage students to serve in the military as means to support the country while obtaining future benefits that will aid in acquiring additional education. Therefore, a conservative affiliation may result in a bias for recommending the military as a post high school career option. Bias in this case is operationalized as the intercept term of an individual educator's decision-making policy.

Additionally, a conservative affiliation may also lead an educator to be less discriminating of who should join the military after high school. That is, regardless of the characteristics of the student, an educator with a strong conservative affiliation may recommend the military. An educator's ability to discriminate between students based on the student's characteristics will be operationalized as the weight for a given characteristic. A weight near

zero indicates that an educator is less likely to distinguish between students based on the characteristic whereas a large positive or negative slope means that the educator is more likely to distinguish between students based this characteristic.

Educators, regardless of their role-conceptualization, possess characteristics that will influence their decision making for students' future career options; however, role conceptualization may play a part in determining which educators are influenced by their directional motivation. Therefore, it is hypothesized that educator GRC will moderate the relationship between situational/personal variables and decision-making policy outcomes such as bias and discrimination for specific career recommendations.

Hypothesis 3: GRC will moderate the relationship between situational variables (i.e., pressure to recommend college) and bias in recommendation (i.e., the intercept term of the regression line).

Hypothesis 4: GRC will moderate the relationship between situational variables (i.e., pressure to recommend college) and an educator's level of discrimination between students (i.e., the absolute value of the weight for a characteristic).

Hypothesis 5: GRC will moderate the relationship between individual difference variables such as political affiliation and military exposure and bias in recommendation (i.e., the intercept term of the regression line).

Hypothesis 6: GRC will moderate the relationship between individual difference variables such as political affiliation and military exposure and an educator's level of discrimination between students (i.e., the absolute value of the weight for a characteristic).

Analytic Approach

This study employed policy-capturing methodology (Slovic & Lichtenstein, 1971; Zedeck, 1977). Policy capturing was a useful tool for describing the decision making process used by decision makers. It resulted in a linear weighting scheme that was applied to the attributes to determine a model for the decision. In this method, participants (decision makers) are presented with many scenarios in which they must make some judgment (a decision). Each scenario is composed of a number of attributes that describe the situation. Each attribute is operationalized by multiple levels. For example, in a decision-making scenario where an Educator must decide on the likelihood to recommend college to a student, the Educator would be faced with different scenarios that represent different students about whom the Educator must decide. Each scenario varies on the attributes of the students represented.

For simplicity sake, consider a design where the each student varies on two attributes, race and academic ability. Race would be represented by levels minority and non-minority. Academic ability would also be represented by two levels: high and low. The scenarios are systematically manipulated to vary each of the attributes so that each decision maker must make a decision on every possible combination of attributes; this is called a full factorial design (2 X 2). Using this design, each participant would view four scenarios that represent different students who vary on race and academic ability scores. Each educator (the participant) would make a decision about the likelihood that he or she would recommend college (dependent variable) to each student (case of data). Each student varies on the attributes (independent variables). In this case, the resulting data structure is four cases of data for each participant. The data is composed of two independent variables, race and academic ability, and one dependent variable, the decision of the participant (usually a rating given on a likert scale).

In a simple within-participant analysis, questions regarding the specific weighting scheme of the decision maker can be answered by regressing the dependent variable (the decision or judgment) onto the independent variables (the student attributes) to determine how influential each independent variable was in affecting the decision. This process is useful for answering idiographic questions about a specific participant. This method can also be used to answer nomothetic questions about groups of decision makers. This is accomplished by combining data across participants to determine the overall regression equation for all of the participants. The resulting weights for the independent variables are general tendencies of all of the decision makers. Researchers should take care to determine which level of questions are to be answered, either ideographic or nomothetic, and to which population the findings will be generalized in order to structure the data collection and take the level of analysis into account when designing the study (See Aiman-Smith, Scullen & Barr, 2002).

As the number of attributes or the levels within each attribute increases, the number of scenarios to be evaluated by each participant can increase dramatically. Therefore, when constructing this policy capturing study there were several issues to take into consideration including scenario realism, participant fatigue, and alternative design strategies. Each of these issues will be discussed in the following section.

When designing the decision making scenarios there is always a conflict between maximizing the level of realism of the scenarios and keeping the number of scenarios to a minimum in order to prevent participant fatigue. The realism of the decision scenarios can be influenced in several ways, two of which are increasing the number of attributes and increasing the number of levels for each attribute. However, each of these actions works to increase the total number of scenarios viewed by each participant. Consider the example study mentioned

above where the scenarios were created based on two attributes each with two levels (2 x 2; two independent variables with two levels each); thus, the total number of scenarios for a full factorial design is four. Assume that this array of attributes captures only part of the information that has been shown to impinge on the decision-making process and that an information rich design is preferred. By adding three additional attributes (ability to pay for additional education, race, and activities involvement) and expanding the number of levels for the attributes where appropriate (desire for additional education = 3, academic ability= 3, ability to pay for additional education = 3, Race = 3, and conduct problems = 3) the level of detail will be higher. However, the resulting design (3 X 3 X 3 X 3 X 3; five independent variables, each with three levels) would require participants to view a much greater number of scenarios, 243 (see Figure 1. All figures and tables are located in Appendix A). This example shows that attempts to increase the realism of a study can rapidly add to the number of scenarios that each participant would have to view, possibly leading to participant fatigue.

Several methods have been proposed to reduce participant fatigue when using a policy capturing methodology including reducing the number of scenarios, changing the presentation format, or choosing an alternative study design. By reducing the number of scenarios, participants will spend less time overall completing the experiment. Previous research indicates that the number of scenarios that can be viewed before fatigue sets in ranges from 60 (Rossi & Anderson, 1982) to 80 (Aiman-Smith et al., 2002). Presentation format can help prevent participant fatigue by making the information easily digestible and comparable across scenarios. By using pictorial or graphical representations of the attributes, participants can easily identify information of interest without having to wade through multiple paragraphs of text, thus reducing eyestrain and time spent on each scenario. These two alternatives, reducing the number of

scenarios and changing the presentation format, are valuable and should be used whenever possible. However, in many cases, the nature of the decision to be made requires that many attributes be included or the information may not lend itself to alternative methods of presentation. In this case, researchers have modified the study design to keep the number of scenarios viewed by any one participant as low as possible and still consider the full complexity of the decision.

The discussion to this point has focused on one type of study design, the full factorial design, where each participant views every scenarios generated for the study. Two other designs, termed confounded block designs, offer alternatives that may help reduce the total number of scenarios viewed by each participant and generate results consistent with the full factorial design. Graham and Cable (2001) compared the full factorial design with two confounded block designs, the fractional factorial and incomplete block designs, and found that the results from each method were consistent with the results of the full factorial design. When using each of the confounded block designs the total number of scenarios is the same as the full factorial design because they are generated in the same manner. However, the confounded block designs either eliminate a number of scenarios viewed by each participant (fractional factorial) or distribute participants between blocks of scenarios (incomplete block design).

The fractional factorial design presents only one subset of the available scenarios. In the example mentioned above that evaluated five variables and resulted in 162 scenarios per participant for a full factorial design, a 1/3 fractional factorial design would yield only 54 scenarios per participant (see Figure 2). Using this 1/3 fractional design would result in a sizable decrease in the number of scenarios; however, it would confound the variables Race and ability to pay for additional education as seen in Figure 2. Confounded variables, as they occur in this

1/3 fractional design, are not necessarily undesirable as long as the relationship between the two variables is considered negligible (Cochran & Cox, 1957; Dey, 1985; Winer, Brown, & Michaels (1991). The example in Figure 2 confounds Race with ability to pay for additional education such that all Black students have high ability to pay for additional education, all Hispanic students have average ability to pay for additional education, and all White students have low ability to pay for additional education. When considering two variables such as Race and ability to pay for additional education, it is unlikely that the relationship between confounded variables will be negligible. Results using the 1/3 fractional design in Figure 2 would confound the effects for Race (i.e., a variable that is not necessarily related to a person's ability to succeed in college) with ability to pay for additional education (i.e., a variable that is related to success in college in that people with high ability to pay for additional education are more likely to be able to afford the cost of college). Therefore, a 1/3 fractional factorial design as depicted in Figure 2 would not be able to distinguish between the role played by Race and ability to pay for additional education in the likelihood to recommend college as a post high school career option. Thus, in this situation, this fractional factorial design would not be desirable.

However, there are many ways to select specific cases from the scenarios that are generated by the full factorial that would overcome this limitation. Advanced computing techniques have made available to researchers the opportunity to develop fractional designs that overcome the type of confounding displayed in the previous example. For example, the SAS OPTEX procedure will develop specialized experimental designs where no standard design is available.

The other type of confounded block design compared by Graham and Cable (2001), the incomplete block design, has the same strengths of the fractional factorial design but overcomes

the limitations expressed thus far. Like the full factorial and fractional factorial designs, an incomplete block design starts with all of the possible scenarios but instead of administering every scenario to every participant, as in the full factorial design, or only administering a fraction of the scenarios to all participants, as in a fractional factorial design, the incomplete block design administers each block to a different set of participants (see Figure 3). This technique ensures that every scenario is used in the analysis but without the burden of requiring every participant to review every scenario. This design allows a different subset of participant to make a decision based on the information in a subset of scenarios.

The advantages to the incomplete block design are that the number of scenarios administered to each participant is greatly reduced compared to a full factorial design and it has the capabilities to evaluate all main effects and first order interactions with results consistent to those found with a full factorial design (Graham & Cable, 2001). However, the advantages do come at a cost. As indicated in Figure 3 and the previous discussion, the number of participants necessary to carry out an incomplete block design is three times the number for either a full factorial or a fractional factorial design. Additionally, Graham and Cable found that for the type of incomplete block design that was chosen for their study, the effects of interactions beyond the first order diverge from those found in the full factorial design (Graham & Cable, 2001). Thus, the number of independent variables used to generate the scenarios, number of scenarios to be viewed by each participant, the relevance of first-order and higher-order interactions, and the available sample size should be considered when choosing between the full factorial design, fractional factorial design, and incomplete block design.

In order to address the concerns about fatigue while ensuring maximal realism in the scenarios, a pilot study was conducted to determine which attributes would be used in the

decision making exercise. Once the attributes to be used were determined, a design was selected to ensure that the study would have sufficient power to detect all main effects for each participant without causing undue strain. Additionally, the data were collected via an online administration using charts and pictures whenever possible to facilitate comprehension and reduce the amount of time needed to review each scenario.

CHAPTER III

METHOD

Pilot Study Overview

The pilot study was conducted in order to determine which attributes to include in the decision making exercise and to conduct a preliminary evaluation of the measures constructed for the study, including the role concept measure, the pressure to recommend college measure, and the time pressure measure.

Policy capturing studies present participants with different scenarios and ask them to make a judgment about the information presented in the scenario. In the pilot study, participants viewed scenarios that represented different student biographical profiles. The aim of the pilot study was to select attributes that educators use in the decision making process and omit those attributes that are not used. The pilot study ensured that the number of attributes and thus the number of scenarios included in the full data collection were kept to a minimum while still ensuring maximal realism. The student characteristics manipulated in the pilot study are listed in Table 1.

The second aim of the pilot study was to evaluate the instruments that were developed to measure educator role concept, pressure to recommend college, and time pressure. Since these measures were developed for this study, the pilot study data was used to conduct item and reliability analysis and to determine which items were retained for use in the full data collection or deleted. Furthermore, a confirmatory factor analysis was conducted on the role concept measure to determine if the participant's responses adhered to the structure used to develop the measure.

Participants

The pilot study was conducted from December 15, 2006 to January 15, 2007 in cooperation with Knowledge Networks, an online data collection vendor. The pilot study was presented to participants online. The study participants were reimbursed with a modest financial incentive ($5).

One hundred and fourteen subjects participated in the pilot study. They were primarily white (80%), female (86%), and teachers (87%). The participant age ranged from 23 to 73 with a mean of 46.25 years. See Table 2 for complete demographic information.

Procedure

Participants were solicited via an online account or e-mail and asked to complete study instruments that took approximately 30 minutes. The instruments were presented in the following order, role concept, pressure to recommend college, and time pressure. Subsequently, the participants viewed and responded to the 27 different student biographical profiles.

Measures

Role Concept. Role conceptualization was measured by using a measure of job tasks that could be considered as either in-role or extra-role depending on an educator's role. Though scales used to measure OCB in a school setting have been developed for use with teachers and other educators, they did not measure aspects of student guidance that were of importance to this study (DiPaola & Tschannen-Moran, 2001; Somech & Drach-Zahavy 2000). Therefore, a measure was developed that evaluated the role aspects of teachers and guidance counselors. This is consistent with OCB scholars' recommendations to make measures context or industry specific (George & Jones, 2000, Organ, 1988; Skarlicki & Latham, 1995). Developed for this study, the Educator role conceptualization measure consisted of 26 behaviors that were collected

from the Department of Labor's Dictionary of Occupations (U.S. Department of Labor, 2005). The set of tasks for secondary school teacher (25-2031.00 - Secondary School Teachers, Except Special and Vocational Education) and guidance counselor (21-1012.00 - Educational, Vocational, and School Counselors) were collapsed into one set. In order to reduce the total number of tasks to a reasonable number those that were redundant and those tasks that did not relate to the core activities of career/guidance counseling, maintaining order, preparation, instruction, and evaluation were deleted resulting in 26 distinct tasks, see Figure 4 for a complete listing of the items.

Educators were asked to indicate how important each task is to their jobs on a five point Likert scale ranging from "not an important part of my job" to "very important part of my job". Responses for the career/guidance counseling were summed to create an indication of guidance role concept.

Pressure to Recommend College. Previous research indicated that many educators experience pressure to recommend college from their colleagues and the student's parents (Marsh et al., 2004). In order to assess this pressure, a four-item scale was developed. These items were designed to measure the general tendencies of student's in the educator's school (i.e., do most students go to college or is there a broader spectrum of outcomes available to the students), pressure to recommend college from the students' parents, and pressure to recommend college from other educators, see Figure 5. The participants indicated their level of agreement with each item by responding on a five-point scale ranging from "strongly disagree" to "strongly agree".

Time Pressure. Similar to pressure to recommend college, previous research has indicated that educators experience increasing time pressure due to large student loads, growing

administrative requirements, and reduced resources (Marsh et al., 2004). A four-item scale was developed to measure the amount of time pressure that educators feel, see Figure 6. The participants indicate their level of agreement with each item by responding on a five-point scale ranging from "strongly disagree" to "strongly agree".

Student Biographical Profiles. Table 1 details each attribute and the levels of the attribute that were used to create the scenarios for the pilot study. The attributes were fully crossed resulting in 243 different scenarios. Four blocks of scenarios were chosen from the total, each consisting of 27 different scenarios. Participants were randomly assigned to blocks and the scenarios were randomized and administered to each participant.

Participants were asked to report the likelihood that they would recommend each career option to the student on a five-point scale ranging from "very unlikely" to "very likely". The career options provided were college, work, or the military. All together, the responses resulted in three different dependent variables. See the Appendix B for a complete listing of the scenarios used in the pilot study.

Results

Regression weights indicate the extent of influence each attribute had on a particular decision outcome. Therefore, attributes with weights that were significantly different from zero were retained and used in the full decision making exercise.

Three individual level regression equations were calculated for every participant in the study. Due to the small number of observations per individual (n = 27), all analyses were evaluated at the p = .10 level of significance instead of the traditional p = .05 level of significance, which allowed for the inclusion and interpretation of a greater number of the participants' analyses.

The individual regression analyses are summarized in Table 3, which lists the number and percentage of individual regression equations that were significant for each of the dependent variables. Forty-two percent of the participants' regression models were significant for military recommendations. This is quite a bit lower than college recommendations (86%) but consistent with the decision to recommend work.

Table 4 summarizes and describes the use of the student characteristics for the different dependent variables. As indicated in the table, every student characteristic was a significant predictor of every decision for at least some of the educators.

There was a great deal of variation in the direction and magnitude of the effect for all student characteristics. For the most part, weights fluctuated from a negative to positive effect. For example, in the decision to recommend work, the weight for Desire for Education varied from B = -0.94 to B = .24. This indicates that educators varied in whether they saw a desire for education as a reason to recommend work or a reason not to recommend work. Similarly, in the decision to recommend the military, the effect for student conduct varied from B = -1.01 to B = .84. A weight of -1.01 means that higher levels of student conduct problems resulted in a lower recommendation to join the military by an educator; whereas, a weight of .84 indicates that as a student exhibited more severe conduct problems, an educator was more likely to recommend the military. Variance in the regression weights suggests that the Educator's decisions and decision rules vary across individuals.

Scale Evaluation:

Role Concept Measure. Preliminary analysis indicated that each of the subscales of the role concept measure achieved acceptable levels of reliability except for the maintain order scale (see Table 5). A confirmatory factor analysis (CFA) was also conducted to determine if the

structure used to develop the measure was actually supported in the data. The CFA fit indices indicated that this model did not accurately represent the data, $\chi^2 = 710$, $p < .001$; CFI = .81; NFI = .715; RMSEA = .114; ECVI = 7.84.

Scale inter-correlations and factor loadings indicated that the guide factor was distinct from the other teaching related scales (see Table 5). Furthermore, three of the teacher factors (prepare, instruct, and evaluate) were highly related but the maintain order factor was only moderately related to the other teaching scales. This would indicate a three factor solution; however, the low reliability of the maintain order factor indicate problems with this scale.

Item analysis of the Maintain Order subscale indicated that the removal of one item would increase the reliability but not to acceptable levels. Upon further evaluation of the items, it was noted that two of the items referred to behaviors that occurred within the classroom while the other two behaviors occurred outside the classroom. This difference in item content may have led educators to rate items differently. Due to this difference in the content of the subscales and the lack of distinction between them, the Maintain Order scale was subsumed under a teach factor along with the Prepare, Instruct, and Evaluate items. The items were evaluated for final inclusion based on the two-factor CFA that consisted of a teach and a guidance factor.

Factor loadings and the modification indices were used to reduce the number of items from the two factor model. This resulted in sixteen items across two dimensions, six for guidance and ten for teaching. This model demonstrated good fit, $\chi^2 = 166$, $p < .001$; CFI = .958; NFI = .902; RMSEA = .077; ECVI = 2.40. Figure 7 lists the retained items and Figure 8 demonstrates the item factor loading.

Pressure to Recommend College Measure. The pressure to recommend college scale exhibited a lower than acceptable level of reliability, $\alpha = .51$. Inspection of the item-total

statistics in Table 6 revealed that two items should be removed to improve the reliability. The combined changes still resulted in a lower than acceptable reliability level, $\alpha = .63$. Further inspection of the remaining items indicated that one item (i.e., "Parents and other educators would look down on me for recommending a career path that did not include college after high school") could be split into two items, one reflecting the pressure from parents and one from other educators thus increasing the reliability of the scale by increasing the number of items. Furthermore, the addition of an item that measures the pressure educators feel to recommend college because of school level evaluation that is based on the number of students who go to college after high school increased the number of items to four. In order to determine what the resulting reliability might be, the Spearman-Brown prophecy formula was applied. The results indicated that the resulting reliability would possibly reach $\alpha = 0.77$ if the modified and added items have psychometric properties consistent with the existing items. The resulting items for the new pressure to recommend college scale are listed in Figure 9.

Time Pressure Measure. The time pressure scale exhibited acceptable levels of reliability for a new scale, $\alpha = 0.77$. However, additional modification was warranted as indicated by the item total statistics, see Table 6. The last item on the scale (i.e., The number of students that I have to work with prohibits me from doing activities that would benefit them) was removed and an item pertaining to time pressure due to paperwork or maintaining records was added. The new educator time pressure items are listed in Figure 10.

Discussion

Overall, every student characteristic was a significant regressor for each decision in at least some of the educators' decision models. While some of the student characteristics like Hispanic were used by educators less often in the decision process, other's were used very

frequently and more consistently such as academic ability, which was used 84% of the time in the decisions to recommend college and ranged from B = .17 to B = 1.71. Based on these results, the individual regression equations indicate that each of the student characteristics was used by educators to make decisions. Therefore, the student characteristics were retained as manipulated in the pilot study.

Based on the results of the analysis it appears that the responses to the role concept measure did not adhere to the structure that was intended. However, the analysis indicated a more concise two factor structure and the resulting role concept measure was used in the full data collection (see Figure 11).

Similarly, modifications were indicated to the educator pressure measures. Two items were removed from the pressure to recommend college scale. Additionally, one item was added and one item split into two items to result in a four-item scale to measure pressure to recommend college (see Figure 12). The item added assessed the pressure educators feel to recommend college that is due to school evaluation methods that are based on the number of students who attend college.

The time pressure scale demonstrated better initial reliability than the pressure to recommend college scale. As a result, only one item was removed and one item added to this scale. The item added measures time pressure due to time spent completing reports and administrative tasks. The new time pressure scale consisted of four items (see Figure 13). The modified measures were incorporated into the full data collection.

Full Data Collection

The full study was designed to address the hypotheses posed previously. Specifically, the data was collected to determine if an educator's guidance role concept (GRC): (1) was related to the student characteristics used by the educator to make decisions about future career options for the student, (2) was related to the level of consistency in the decisions made by educators, (3) moderated the relationship between situational/individual characteristics of the educator and the level of bias show by an educator for a specific career option, and (3) moderated the relationship between situational/individual characteristics of the educator and the level of discrimination between students based on student characteristics. This was accomplished by using an online administration, the policy capturing method to collect the data, and random coefficients modeling to analyze the data.

Participants

Power Analysis. A power analysis was conducted to determine the necessary sample size to test the hypotheses in this study. As mentioned earlier in this paper, no study has tested the effect role conceptualization has on decision-making process and outcomes. Therefore, no historical estimations of effect sizes were available. As a result, a very conservative power analysis was conducted using Power in Two-Level Designs (PINT; Bosker, Snijders, & Guldemond, 2003; Snijders & Bosker, 1993). The analysis was conservative in that a small effect sized was used ($d = .20$) and a high level of intercorrelation between the level two variables was used ($r = 0.6$). The results from the power analysis indicated that a minimum sample size of 320 is necessary to achieve a power of .80 under this conservative set of parameters.

Sample. The full data collection was conducted in a manner consistent with the pilot study in that it was done online and the study participants were reimbursed with a modest financial incentive ($5). The data was collected from February 27, 2007 to March 18, 2007.

A nationally representative sample of seven hundred and eighty-one high school teachers participated in the study. Of the participants screened for the survey (n = 8442), 11.9% were qualified (i.e., they were educators with at least 1 year of experience) for the main survey (n = 1008), and 77.5% completed the main survey (n = 781). The participants resided in each of the 50 states and District of Columbia. They were primarily white (88.2%) and female (72.6%). The participants' ages ranged from 23 to 85 with a mean of 44.10 years. See Table 7 for complete demographic information.

Procedure

Participants were solicited via an online account or e-mail. Completion of the study instruments took an average of 27.2 minutes. The instruments developed and modified in the pilot study were presented to the participants in the following order: role concept, pressure to recommend college, time pressure, political ideology, and exposure to the military. Subsequently, the participants viewed and responded to the 20 different student biographical profiles.

Measures

Role Concept. The Educator role concept measure consisted of 16 behaviors that were collected from the Department of Labor's Dictionary of Occupations (U.S. Department of Labor, 2005). The tasks for secondary school teacher (25-2031.00 - Secondary School Teachers, Except Special and Vocational Education) and guidance counselor (21-1012.00 - Educational, Vocational, and School Counselors) were collapsed into one set. Educators were presented with

the sixteen work behaviors and were asked to indicate how important each behavior was to their job on a five point scale ranging from "not an important part of my job" to "a very important part of my job". The sixteen items exhibited a two factor structure. Ten items described behavior that are typically considered teaching and six items described behaviors that are typically considered career guidance. For a complete description of the procedures used to develop this measure, see the description in the pilot study.

Pressure to Recommend College. Pressure to recommend college was measured by four items that represented different aspects that educators report as sources of pressure to recommend college. The items represented pressures that arise from parents, colleagues, general tendencies in the school, and school level evaluation criteria. Participants were asked to report the extent to which they agreed or disagreed with each statement on a five-point scale ranging from "strongly agree" to "strongly disagree". For a complete description of the procedures used to develop this measure, see the description in the pilot study.

Political Ideology. Political ideology was measured by one item that asked educators to report their ideology on a seven point scale ranging from "Strong Democrat" to "Strong Republican".

Exposure to the Military. Subjective reports of exposure to the military were measured with one item that asked educators, "How much exposure to the Military would you say you have had?" Responses were recorded on a five point scale ranging from "very little exposure to the military" to "very extensive exposure to the military".

Student Biographical Profiles. The student biographical profiles were developed in the pilot study and were used in the full data collection without modification. Table 1 details each attribute and the levels of the attribute that were used to create the scenarios.

The pilot study indicated that the time to complete the exercise slightly exceeded the time delineated by the data collection contract. Therefore, in an effort to reduce the time to complete the study, modifications to the study design were explored. An alternative design that reduced the number of scenarios was adopted. The attributes were fully crossed resulting in 243 different scenarios. Four blocks of scenarios were chosen from the total, each consisting of 20 different scenarios. Participants were randomly assigned to blocks and the scenarios were randomized and administered to each participant. This design was selected because it was efficient, minimized confounding among the student characteristics, and allowed for the estimation of all main effects, and pairwise interactions among the student characteristics. See Appendix C for a complete listing of all scenarios used in the full data collection.

For each student biographical profile, participants were asked to report the likelihood that they would recommend each of three career options (college, work, and the military) to the student represented in the profile. Respondents indicated their recommendations on a five point scale ranging from "very unlikely" to "very likely".

Data Analysis

The reliability of the policy capturing scenarios responses was measured by adding two repeat scenarios. Correlations between the ratings given on each of these scenarios served as a measure of test retest reliability (Aiman-Smith, Scullen, & Barr, 2002; Rotundo & Sackett, 2002; Kristof-Brown, Jansen, & Colbert, 2002).

Due to the multilevel nature of the data, most of the analyses were conducted using Random Coefficients Modeling (RCM). As mentioned above, data obtained using the policy capturing method can be used to answer two types of questions, ideographic and nomothetic. Each participant's responses result in a data set that can be used to answer ideographic questions

and those data sets combined can answer nomothetic questions. The purpose for this study was to answer both types of questions. In order to answer both questions simultaneously RCM was be used. RCM is based on a two stage multiple linear regression that employs both a generalized least squares and a Bayesian estimation procedure to obtain model parameters. RCM is more applicable for multilevel data because it simultaneously estimates parameters for multiple levels, does not rely on the assumption of independent residuals that are associated with ordinary least squares, and the optimally weighted Bayesian estimation procedure provides smaller mean square error terms than other procedures (Bryk & Raudenbush, 1992; Hoffman, 1997; Raudenbush, 1988).

RCM analysis was used to determine if second order dependent variables such as the intercept likely to, recommend a career option thus exhibiting a bias in favor of recommending that career option. Conversely, values below zero indicate that a person is unlikely to recommend that career option. Therefore, bias was operationalized as larger positive intercept values that depart from zero. Weight values near zero indicate that the judge was not influenced by the attributes of the student (i.e., he or she did not differentiate between students). Values that depart from zero mean that a person is more likely to take the characteristics of a student into account when forming the judgment about the likelihood to recommend that career option. Therefore, differentiation was operationalized as larger absolute weight values. RCM analysis was used to determine the relationship between the parameter estimates (intercept and slope) and pressure to recommend college, political ideology, military exposure, and GRC. Random Coefficients Modeling was conducted using SAS PROC MIXED.and slopes are related to between-group factors like GRC and situation or individual characteristics. Intercept values greater than zero indicate that a judge is predisposed to, or more

CHAPTER IV

RESULTS

Scale Evaluation

Table 8 lists the means, variances, reliability estimates, and intercorrelations among the variables investigated in this study. As demonstrated in the table each of the measures demonstrated reasonable ($\alpha = .80$) to good ($\alpha = .87$) levels of reliability.

As shown in Table 8, each of the responses was also reliable. Reliability was calculated by estimating the correlation between the recommendations for the repeated scenarios. Estimates of reliability for college recommendations were lowest, $r = .66$, $p < .01$, and Military recommendations were the highest, $r = .74$, $p < .01$. Karen and Barringer (2002) indicate that very few of the published studies using policy capturing report the reliability. However, they indicate that based on the existing research, levels of reliability around .7 are acceptable.

Role Concept Confirmatory Factor Analysis

The role concept measure was developed to measure aspects of teaching and guidance. A confirmatory factor analysis was conducted using AMOS 16.0 to determine if the items adhered to the structure developed in the pilot study. This model demonstrated good fit, $\chi^2 = 189$, df = 100, $p < .001$; CFI = .978; NFI = .955; RMSEA = .034; ECVI = .376.

As indicated in Table 8, the relationships between the variables in this study vary from near zero to moderate in magnitude. Specifically, GRC was significantly and positively related to military exposure, $r = .17$, $p < .01$, college recommendations, $r = .10$ $r < .01$, and military recommendations, $r = .11$, $p < .01$.

College pressure demonstrated a significant relationship with college recommendations, $r = .14$, $p < .01$. This indicates that, teachers who were more likely to report experiencing pressure

to recommend college were also more likely to recommend college. Military exposure was significantly related to military recommendations, $r = .11$, $p < .01$, indicating that teachers who reported greater exposure to the military were also, more likely to recommend the military.

Political ideology was significantly related to two variables, college and military recommendations. Political ideology was positively related to college recommendations, $r = .08$, $p < .05$, and negatively related to military recommendations, $r = -.31$, $p < 01$. These findings indicate that teachers who reported being more liberal were more likely to recommend college and less likely to recommend the military than those teachers who reported being more conservative.

Each of the recommendation variables was significantly related to the other. College recommendations were negatively related to both military, $r = -.07$, $p < .05$, and work recommendations, $r = -.12$, $p < .01$. Likewise, military and work recommendations were positively related, $r = .18$, $p < .01$.

Random Coefficients Modeling

The nature of the data and the hypotheses that this study proposed to test required the use of Random Coefficients modeling (RCM). Prior to testing each hypothesis, a series of preliminary evaluations were conducted to determine if tests of the hypothesis were warranted. First, differences in each dependent variable were evaluated between blocks to determine if the particular set of scenarios presented to the participant influenced recommendations. Second, the amount of variance in each dependent variable was determined. Third, student characteristics were added to the model to evaluate the overall effect of student characteristics on teacher recommendations. Fourth, the amount of variance in each of the weights for the student characteristics was evaluated to determine if they possessed sufficient variability to be accounted

for by teacher characteristics (this is known as the unconditional means model). The second through fourth steps were necessary to establish a comparison point and to determine if tests of the hypotheses were warranted. Finally, GRC was evaluated for a moderating relationship with the student characteristics as indicated by the hypotheses.

In order to tests for differences in responses between blocks, the block variable was added as a fixed effect for each of the three dependent variables. The tests indicate that there were no differences between participant responses due to block assignment, see Table 9.

The next step was the addition of the student characteristics. The student characteristics were added as predictors to the equation for each dependent variable. Each dependent variable will be discussed sequentially. The results for the likelihood to recommend college dependent variable are presented in Table 11. This table demonstrates that each of the student characteristics were significant predictors of teachers' college recommendations. The findings for student race indicate that teachers were more likely to recommend college to students who were black than white, $B = .05$, $p < .01$; but, they were not more likely to recommend college to students who were Hispanic, $B = -.02$, $p = .09$. Teachers were also more likely to recommend college as a student's ability to pay for additional education increased, $B = .14$, $p < .01$; desire for additional education increased, $B = .29$, $p < .01$; and academic ability increased, $B = .54$, $p < .01$. However, teachers were less likely to recommend college as a student's conduct became more severe, $B = -.23$, $p < .01$. Overall, the addition of the student characteristics as fixed effect predictors of teacher recommendations for college accounted for 46% of the residual variance. Similar results were found for teacher recommendations to join the military (see Table 12).

As the table shows, each of the student characteristics except for student race was a significant predictor of teachers' military recommendations. Though student race approached

significance when the student was black, B = -.02, p = .07, it did not have a significant effect on military recommendations. Teachers were less likely to recommend the military as a student's ability to pay for additional education increased, B = -.09, p < .01; desire for additional education increased, B = -.03, p < .01; academic ability increased, B = -.07, p < .01.

However, teachers were more likely to recommend the military as a student's conduct became more sever, B = .07, p < .01. Overall, the addition of the student characteristics as fixed effect predictors of educator recommendations for the military accounted for 73% of the residual variance.

As the table 13 shows, each of the student characteristics were significant predictors of teachers' work recommendations. Black student race, B = -.03, p = .04, was a significant predictor of work recommendations and Hispanic student race, B = .03, p = .05 was not significant. Teachers were less likely to recommend work as a student's ability to pay for additional education increased, B = -.09, p < .01; desire for additional education increased, B = -.20, p < .01; and academic ability increased, B = -.22, p < .01. However, teachers were more likely to recommend work as a student's conduct became more sever, B = .13, p < .01. Overall, the addition of the student characteristics as fixed effect predictors of teacher recommendations for work accounted for 67% of the residual variance.

Each of the student characteristics demonstrated a significant relationship with the decisions but for one exception; student race was not significantly related to the decision to recommend the military. Additionally, each of the student characteristic weights demonstrated a significant amount of residual variance across teachers except for student race, which did not demonstrate a significant amount of variance for college or military recommendations. Variance estimates for each of the student characteristics across the different decisions are located in

Appendix D. Residual variance in the weights indicated that analysis to evaluate relationships between the weights and level 2 variables were warranted.

Hypothesis 1

Recall that hypothesis 1 stated that a teacher's GRC would be positively related to the weights for student characteristics that are related to success in a career option but not related to those student characteristics that are not associated with success in the career option such as race. In order to test these relationships, teachers' GRC scores were added as a level 2 variable and the relationship between the weights and the GRC scores were evaluated. This relationship was significant only when evaluated with the likelihood to recommend college dependent variable. For college recommendations, there was a significant relationship between GRC scores and student desire for additional education, $\gamma = -.005$, $p = .02$. Though the relationship was significant, it was in the opposite direction as predicted, indicating that teachers who considered guidance behavior a more important aspect of their job were less likely to see desire for additional education as a reason to recommend college. Tests for these relationships with the military and work recommendations were not significant.

Hypothesis 2

Hypothesis 2 stated that teachers with higher GRC scores would be more consistent in their decisions as indicated by higher levels of R^2. Tests of this hypothesis were not possible using the random coefficients modeling software used in this study, SAS PROC MIXED. Therefore, Hypothesis 2 was tested by computing individual regression equations for every participant and then calculating the correlation between GRC and the R^2 value. Though this method does not use RCM and thus take into account the variance from each decision, it does approximate the relationship between the GRC scores and the teacher's consistency. However,

the correlation between R^2 and GRC scores were not significant for military and work recommendations, but there was a small negative correlation between R^2 values and GRC scores for college recommendations, $r = -.08$, $p < .05$. This indicates that teachers with higher GRC scores were actually less consistent in their use of student characteristics when making decision to recommend college; hypothesis 2 was not supported.

In order to test hypothesis 3 through 6, more complex analyses were conducted. The prediction equations for each dependent variable were expanded to account for the effects of school or teacher variables on the intercepts and the weights for the student characteristics. This was accomplished by adding the situation or individual characteristic variables to level 2 of the prediction equation (i.e., the equation for the weights and the intercept). Significant effects for the school or individual characteristics indicate that these variables influenced the intercept or weights for the student characteristics used by the teachers. For each of the following hypotheses, results will be organized by dependent variable.

Hypothesis 3

Hypothesis 3 predicted that GRC would moderate the relationship between situational variables such as pressure to recommend college and the level of career recommendations as indicated by the intercept value.

College Recommendations: For the likelihood to recommend college, there was a significant effect for the relationship between college pressure and the intercept term, $\gamma = .08$, $t = 5.45$, $p < .01$. This indicates that teachers who reported higher levels of pressure to recommend college were more likely to recommend college than those who reported lower levels. This test established that there is a relationship between pressure to recommend college and the level of bias as indicated by the intercept for college recommendations. However, this relationship was

not moderated by GRC, $\gamma = .00$, $t = 1.00$, $p = .32$. Hypothesis 3 was not confirmed for college recommendations.

Military Recommendations: College pressure did not demonstrate a relationship with intercept for military recommendations, $\gamma = .01$, $t = .48$, $p = .63$. Similarly, there was not a significant relationship between college pressure and the intercept for military recommendations when GRC was evaluated as a moderator, $\gamma = .00$, $t = .65$, $p = .51$.

Work Recommendations: Pressure to recommend college demonstrated a significant relationship with the intercept for work recommendations, $\gamma = -.03$, $t = -2.43$, $p < .05$. This finding indicates that teachers who reported higher levels of pressure to recommend college were less likely to recommend work as a career option. However, this relationship was not moderated by GRC, $\gamma = .00$, $t = 1.01$, $p = .31$.

Summary of Tests for Hypothesis 3: Taken together, the tests for hypothesis 3 were not significant for any of the decisions. While pressure to recommend college did demonstrate an effect on recommendations for college and work, this relationship was not moderated by GRC as hypothesized.

Hypothesis 4

Hypothesis 4 indicated that GRC would moderate the relationship between situational variables such as pressure to recommend college and the weights associated with the student characteristics.

College Recommendations: There was a significant relationship between reported college pressure and the weights for ability to pay for additional education, $\gamma = -.01$, $t = -3.01$, $p < .01$, desire for additional education, $\gamma = -.01$, $t = -2.70$, $p < .01$, and academic ability, $\gamma = -.01$, $t = -2.73$, $p < .01$. These weights indicate that teachers who reported more pressure to recommend

college were less likely to discriminate between students based on ability to pay for additional education, desire for additional education, and academic ability. However, these relationships were not moderated by GRC: ability to pay for additional education, $\gamma = .00$, $t = -.86$, $p = .39$, desire for additional education, $\gamma = .00$, $t = -.21$, $p = .83$, and academic ability, $\gamma = .00$, $t = -.79$, $p = .43$.

Military Recommendations: College pressure did not demonstrate a relationship with student characteristic weights for military recommendations. Furthermore, GRC did not moderate the relationship between pressure to recommend college and the student characteristics.

Work Recommendations: College pressure did not demonstrate a significant relationship with any of the weights for the student characteristics when teachers were recommending work. Additionally, GRC did not moderate any relationship between college pressure and the student characteristics for the decision to recommend work.

Summary of Tests for Hypothesis 4: The tests of hypothesis 4 indicate that college pressure did have an effect on teachers' weights for ability to pay, desire for additional education, and academic ability when making a decision to recommend college. However, these relationships were not moderated by GRC. For military and work recommendations, college pressure did not have a significant effect on teachers' weights and GRC did not affect the relationship between these variables. Overall, there was no support for hypothesis 4.

Hypothesis 5

Hypothesis 5 predicted that GRC would moderate the relationship between individual variables and the level of career recommendations as indicated by the intercept value. Two individual level variables were evaluated, political affiliation and exposure to the military. Each individual level variable will be discussed under each career recommendation.

College Recommendations—Political Ideology: For the likelihood to recommend college, the relationship between political ideology and the intercept term was not significant, γ = -.06, t = -1.79, p = .07. Likewise, this relationship was not moderated by GRC, γ = -.01, t = -1.03, p =.31.

College Recommendations—Military Exposure: In addition to political ideology, military exposure was also evaluated for a moderated relationship with career recommendations. For the likelihood to recommend college dependent variable, there was no significant direct relationship between military exposure and the intercept term, γ = -.01, t = -0.12, p =.90. Similarly, there was no significant relationship between military exposure and the intercept when GRC was evaluated as a moderator, γ = -.01, t = -0.87, p =.39.

Military Recommendations—Political Ideology: Political ideology demonstrated a significant relationship with the intercept for likelihood to recommend the military, γ = .19, t = 6.49, p < .01. This indicates that teachers who reported being conservative were more likely to recommend the military as a career option than those who reported their political ideology as more liberal. However, this relationship was not moderated by GRC, γ = .00, t = -.36, p = .71.

Military Recommendations—Military Exposure: Military exposure demonstrated a significant relationship with the intercept for military recommendations, γ = .13, t = 3.60, p < .01. This indicates that those teachers who reported having a greater amount of exposure to the military were more likely to recommend the military than those who did not. However, this relationship was not moderated by GRC, γ = .00, t = .06, p = .96.

Work Recommendations—Political Ideology: Political ideology was not significantly related to the intercept for work recommendations, γ = .00, t = -.08, p = .93. The moderated relationship that included GRC was not significant either, γ = .01, t = 1.09, p = .28.

Work Recommendations—Military Exposure: Likewise, military exposure was not significantly related to the intercept for work recommendations, $\gamma = .02$, $t = .53$, $p = .59$, nor was the GRC moderated relationship significant, $\gamma = .01$, $t = 1.19$, $p = .24$.

Summary of Tests for Hypothesis 5—Political Ideology: The tests of hypothesis 5 indicate that political ideology did demonstrate a significant relationship with the intercept for military recommendations but not college or work recommendations. However, none of the relationships between political ideology and the intercept term were moderated by teachers' GRC scores. Hypothesis 5 was not supported for the political ideology variable.

Summary of Tests for Hypothesis 5—Military Exposure: Military exposure demonstrated a significant relationship with the intercept for military recommendations but not with college or work recommendations. Tests to evaluate the moderating effect of GRC on the relationship between military exposure and the intercept for recommendations were not significant. Hypothesis 5 was not supported for the military exposure variable.

Hypothesis 6

Hypothesis 6 indicated that GRC would moderate the relationship between individual variables such as political ideology or military exposure and the weights associated with the student characteristics. Each individual level variable will be discussed under each career recommendation.

College Recommendations—Political Ideology: For the likelihood to recommend college dependent variable, there were no significant direct relationships between political ideology and the weights for any of the student characteristics. Similarly, there were no significant relationships between political ideology and the weights for the student characteristics when GRC was evaluated as a moderator.

College Recommendations—Military Exposure: Military exposure did not demonstrate a significant relationship with the weights for any of the student characteristics. Tests for GRC moderated relationships were not significant either.

Military Recommendations—Political Ideology: Political ideology was significantly related to the weights for student conduct, $\gamma = -.02$, $t = -2.30$, $p < .05$, and academic ability, $\gamma = .02$, $t = 2.40$, $p < .05$, for military recommendations. These relationships indicate that teachers who reported their political ideology as conservative were less likely to distinguish between students based on conduct but more likely to distinguish between students based on academic ability when making recommendations to join the military. However, neither of these relationships were moderated by GRC: student conduct, $\gamma = .00$, $t = -.74$, $p = .46$, and academic ability, $\gamma = .00$, $t = 1.88$, $p = .06$.

Military Recommendations—Military Exposure: Military exposure demonstrated significant relationships with the weights associated with two student characteristics, student conduct, $\gamma = -.04$, $t = -4.90$, $p < .01$, and academic ability, $\gamma = .02$, $t = 2.75$, $p < .01$. The relationships between military exposure and these weights for student characteristics indicates that teachers who reported greater exposure to the military were less likely to distinguish between students based on conduct but more likely to distinguish between students based on academic ability than those teachers who reported less exposure to the military. Therefore, teachers with lower exposure to the military would recommend the military to a higher degree to those students who demonstrated more severe student conduct but recommend the military to a lower degree to those students with higher academic ability. These relationships were not moderated by GRC.

Work Recommendations—Political Ideology: Political ideology was not significantly related to any of the student characteristic weights, nor were there any significant moderated relationships associated with political ideology for work recommendations.

Work Recommendations—Military Exposure: Likewise, no significant relationships, direct or moderated, were discovered with military exposure and the student characteristic weights for work recommendations.

Summary of Tests for Hypothesis 6—Political Ideology: The tests of hypothesis 6 indicate that political ideology demonstrated a significant relationship with the weights for student conduct and academic ability when making military recommendations, but not college or work recommendations. None of the relationships between political ideology and the student weights were moderated by teachers' GRC scores. Hypothesis 6 was not supported for the political ideology variable.

Summary of Tests for Hypothesis 6—Military Exposure: Similar to political ideology, military exposure demonstrated a significant relationship with the weights for student conduct and academic ability for military recommendations but not with any of the weights for college or work recommendations. Tests to evaluate the moderated effect of GRC on the relationship between military exposure and the weights for student conduct and academic ability were not significant. Hypothesis 6 was not supported for the military exposure variable.

CHAPTER V

DISCUSSION

The findings from this study were not consistent with the hypotheses proposed. It was hypothesized that the way a person perceives a task would change the way that the person performs the task. More specifically, the theoretical foundation of this study suggested that an employee who perceives a task to be a part of his or her role or a component of the required responsibilities would perceive the task differently, would bring a different set of motivations and skills to bear on the task, and this would result in different outcomes than an employee who perceives the task to be beyond his or her role or not a part of the job. These assertions were not supported by this study.

Guidance role concept was hypothesized to have a positive relationship with the weights for relevant student characteristics and the converse for characteristics that were not relevant to the decision. Though there was one instance of a significant finding in the tests for this hypothesis, it was not in the hypothesized direction. It appears that among teachers, the amount of weight given to the different student characteristics was not influenced by the teacher's perspective of the task.

More specifically, it was anticipated that a student's desire for additional education might lead the student to exert additional effort and be more successful in college. Therefore, higher levels of desire for additional education would indicate greater qualification for college. The hypotheses proposed that teachers who considered making career recommendations an important aspect of their jobs (i.e., high GRC) would take this indication of greater qualification into account when making the decision. However, teachers who reported that guidance behaviors were an important part of their jobs were less likely to rely on desire when making college

recommendations. This may have been due to more complex decision rules employed by teachers where desire, or the lack of desire, alone may not be enough to ensure, or preclude, success in college.

However, other research on career decision making and guidance counseling (Dell-Amen & Rosenbaum, 2002; Rosenbaum, Miller, & Krei, 1996) indicates that desire for additional education is not a factor considered important to teachers when recommending additional education, though often to the student's detriment. This research suggests that teachers value and therefore recommend the experience of college to students even if the student is not prepared for and does not desire that path. These studies suggest that teachers believe that the experience of college may stimulate academic desire and therefore lead the student to a successful outcome (Dell-Amen & Rosenbaum, 2002; Rosenbaum, Miller, & Krei, 1996).

What is most surprising from tests of hypothesis 1 is the lack of results for a relationship between GRC and academic ability when making college recommendations. There was no relationship between teacher's ratings of importance for career guidance behaviors and a reliance on academic ability as a factor for recommending college. This may be due to the strong relationship between academic ability and college recommendations being consistent across teachers regardless of GRC.

Hypothesis 2 posed an additional test for the influence of GRC on the decision-making process. The test indicated that the level of consistency with which teachers make decisions was not related to, or was negatively related to, their GRC scores. It was expected that teachers who considered career recommendation an important part of their job would have been more consistent because they attached different rewards and consequences with the recommendation process. However, these results demonstrate that at best, there was no relationship and in the

worst case, teachers with high GRC scores were less consistent than teachers with low GRC. These results may have been due to the weak influence of other variables. High school teachers are often faced with the opportunity to discuss career options with students in a rich environment full of many cues that signal what behaviors would be appropriate. The task that they were asked to do as a part of this study may not have provided the same quality of cues and thus would not have been open to great influence by their role perceptions.

Evaluation of these situation and individual characteristics indicated that they did play a role in the decision-making process and outcomes. Teachers were influenced by the pressure to recommend college when making a decision to recommend college and work. Teachers who reported greater levels of pressure were more likely to recommend college and less likely to recommend work than those reported low levels of pressure. Additionally higher levels of college pressure resulted in less emphasis being place on a student's desire for education and academic ability. It may be that a teacher who feels pressure to recommend college would streamline the decision process by reducing the impact of the student's desire and ability to be successful in college. This is consistent with other research that found that pressure to recommend college led teachers to be less discriminating among students when making recommendations for college (Marsh et al., 2004). This also indicates that the perceptions of situational characteristics may have played a role in shaping the decision making process of these teachers.

The influence of situational characteristics is not the only factor that impinged upon teachers' decisions. It was found that individual characteristics such as political ideology and exposure to the military might have played a role in the decision to recommend the military as well. A conservative political ideology was shown affect the outcome of the decision (i.e.,

higher recommendations for the military) and process used to make the decision (i.e., less emphasis on student conduct but more emphasis on academic ability). Teachers who reported that they were conservative were more likely to recommend the military than liberal teachers were. Liberal teachers were more likely than conservatives to see poor student conduct and lower academic ability as a reason to recommend the military.

Military exposure, another personal factor, demonstrated a pattern of relationships consistent to those found for political ideology. Teachers who reported greater exposure to the military were more likely to recommend it. Teachers who reported less exposure to the military were more likely to recommend the military to students with poor conduct and lower academic ability.

Taken together, these findings suggest that work and personal factors influence the decision making process and the outcomes. It was hypothesized that these relationships would be moderated by teachers' perceptions of their roles (i.e., GRC). However, no test for the moderating effects of GRC was significant. The proposition that a person's perspective of the task, in-role or extra-role, would change the way work or personal factors influence the task was not supported.

The lack of support for these hypotheses may by due to the overpowering effect of the situation and individual characteristics. The nature of the decision to recommend college or the military is a situation that evokes strong personal interests and emotionally charged thoughts and feelings. This explanation asserts that situational forces such as the pressure to recommend college may have overwhelmed teacher's personal role conceptualizations (Dierdorff & Morgeson, 2007). Likewise, individual characteristics, such as a teacher's political ideology, may be too strong of an influence for role concept to overcome. However, other variables may

exist that exert a weaker influence on the decision making process; these variables may be moderated by the teacher's role conceptualization (Beaty, Cleveland, & Murphy, 2001). Future research should identify variables that may be weaker than those measured in this study and thus would be subordinate to the moderating effects of role conceptualization.

Implications

The lack of support for the hypotheses proposed in this study limit its applicability. These findings indicate that the theoretical framework from which the hypotheses originated may not be the best understanding of the OCB and decision-making integrated theoretical framework nor should this framework be applied without further consideration and investigation that would clarify the nature of the relationships. However, the findings do indicate that personal and situational factors do influence the way the way decision-making behaviors are enacted which is consistent with previous research (Jonas & Frey, 2003; Kahneman & Miller, 1986; Katzner 2000).

Limitations and Future Research

One factor of this study that may be a limitation is the contrived nature of the student scenarios. Typically, teachers have the opportunity to develop rich relationships with students, understanding their motivations, needs, desires, strengths, and weaknesses before making recommendations about future career options. Furthermore, the decision-making process and act of recommending a career option does not happen at one point in time as it did in this study. Unfortunately, in order to capture these behaviors in a controlled manner, use of the student scenarios was necessary. Studies should be conducted that investigate this type of decision making in realistic environments where situational characteristics such as college pressure and

student characteristics such as race work tacitly instead of being obviously measured or manipulated.

The student, teacher, and situational characteristics that were measured or manipulated in this study represent a small subset of variables that could have been considered. Given the methodology chosen for this study, it would be impossible to represent the complexity of a student in the limited number of scenarios that were presented to study participants. In addition to the student characteristics used in this study, additional factors such as sports and activities participation, personality factors, and family history should be considered. Teacher characteristics, as well, could be expanded to include the level of experience of the teacher, subject matter taught, and demographic variables. Likewise, the situation characteristics could be expanded to include the size and location of employing institution, funding amount per student, and school achievement variables.

Finally, the premises used to develop this study may be better understood by a simpler test. Perhaps future studies can use a simple, less subjective, evaluations to determine if role conceptualization changes the way a task is completed. This endeavor may require a series of laboratory experiments wherein role concept is first manipulated by assigning participants to high and low role concept treatment conditions. The strategy used to complete a task would then be evaluated for differences across the treatment groups. If this test proves successful, then further studies should be developed to determine if naturally occurring differences in role concept play a role in the way tasks are conducted. Finally, the moderating effect of role concept could be evaluated by introducing situational and individual characteristics that affect the way the task is conducted. The foundation of these studies should be a simple task that has several easily observable strategies to complete the task. This series of laboratory studies would

evaluate the influence of role concept with greater control due to the simplistic nature of the task and the ease with which different strategies for task completion can be observed.

Conclusion

Previous research identified that in-role or extra-role perceptions of a task influenced the frequency of the task. This study's aim was to determine if this differential perception of a task would change the nature of the behavior, not just its frequency. The results from this study provided no support for the hypotheses that were developed to investigate this unexplored area of OCB. The results did indicate that work and individual factors could change the way that decisions are made. This was supported when teacher's perceptions of pressure to recommend college, political ideology, and reports of exposure to the military were related to the decision outcomes and the weights for specific student characteristics. However, there was no support for the relationship between role conceptualization and the process or outcomes associated with the task. The lack of support for the hypotheses in this study indicates that further theoretical development is necessary.

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APPENDICIES

APPENDIX A

FIGURES AND TABLES

Full Factorial Design with Five Independent Variables

				Ability to Pay for College								
				Above Average			Average			Below Average		
				Desire for Additional Education			Desire for Additional Education			Desire for Additional Education		
				Strong Desire	Some Desire	No Desire	Strong Desire	Some Desire	No Desire	Strong Desire	Some Desire	No Desire
Race				Academic Ability			Academic Ability			Academic Ability		
				High	Average	Low	High	Average	Low	High	Average	Low
	Black	Student Conduct	Suspended on Multiple Occasions									
			A Few Detentions									
			None									
	Hispanic	Student Conduct	Suspended on Multiple Occasions									
			A Few Detentions									
			None									
	White	Student Conduct	Suspended on Multiple Occasions									
			A Few Detentions									
			None									

Figure 1
Full Factorial Design with Five Independent Variables

Simplified Example of a One Third Fractional Factorial Design with Five Independent Variables

				Ability to Pay for College								
				Above Average			Average			Below Average		
				Desire for Additional Education			Desire for Additional Education			Desire for Additional Education		
				Strong Desire	Some Desire	No Desire	Strong Desire	Some Desire	No Desire	Strong Desire	Some Desire	No Desire
Race				Academic Ability			Academic Ability			Academic Ability		
				High	Average	Low	High	Average	Low	High	Average	Low
	Black	Student Conduct	Suspended on Multiple Occasions									
			A Few Detentions									
			None									
	Hispanic	Student Conduct	Suspended on Multiple Occasions									
			A Few Detentions									
			None									
	White	Student Conduct	Suspended on Multiple Occasions									
			A Few Detentions									
			None									

In the 1/3 fractional factorial design, participants would only judge the scenarios that are in the shaded area

Figure 2
Simplified Example of a One Third Fractional Factorial Design with Five Independent Variables

Simplified Example of an Incomplete Block Design with Five Independent Variables

				Ability to Pay for College								
				Above Average			Average			Below Average		
				Desire for Additional Education			Desire for Additional Education			Desire for Additional Education		
				Strong Desire	Some Desire	No Desire	Strong Desire	Some Desire	No Desire	Strong Desire	Some Desire	No Desire
Race				Academic Ability			Academic Ability			Academic Ability		
				High	Average	Low	High	Average	Low	High	Average	Low
Race	Black	Student Conduct	Suspended on Multiple Occasions									
Race	Black	Student Conduct	A Few Detentions									
Race	Black	Student Conduct	None									
Race	Hispanic	Student Conduct	Suspended on Multiple Occasions									
Race	Hispanic	Student Conduct	A Few Detentions									
Race	Hispanic	Student Conduct	None									
Race	White	Student Conduct	Suspended on Multiple Occasions									
Race	White	Student Conduct	A Few Detentions									
Race	White	Student Conduct	None									

In the incomplete block design, each of the different shaded areas would be completed by a different group of participants.

Figure 3
Simplified Example of an Incomplete Block Design with Five Independent Variables

Table 1

Student Characteristics Manipulated in the Pilot Study

Characteristics	Level Descriptor
Race	Black Hispanic White
Student Conduct	Suspended on Multiple Occasions A Few Detentions None
Ability to Pay for Additional Education	Above Average Average Below Average
Desire to get additional Education	A Strong Desire Some Desire No Desire
Academic Ability	Above Average Average Below Average

Table 2

Pilot study Participant Demographic Information

	Race				Gender		Role	
	Asian	Black	Other	White	Female	Male	Teacher	Counselor
n	2	8	13	91	98	16	99	15
Percent	1.75	7.02	11.40	79.82	85.96	14.04	86.84	13.16

For each of the items below, please use the provided scale to indicate whether or not you believe the behavior described is an important part of your job. Behaviors that are a **"very important part of your job"** are those that you consider to be an essential aspect of your job. Behaviors that **"not an important part of your job"** are those that you consider to be a minor part of your particular job.

	Items	Not an important part of my job	Slightly important part of my job	Moderately important part of my job	Important Part of my job	Very important part of my job
1	Establish and enforce rules for behavior and procedures for maintaining order among the students for whom you are responsible.	1	2	3	4	5
2	Enforce all administration policies and rules governing students.	1	2	3	4	5
3	Sponsor extracurricular activities such as clubs, student organizations, and academic contests.	1	2	3	4	5
4	Keep an eye on students in the school libraries, hall, cafeteria, and during bus loading and unloading.	1	2	3	4	5
5	Guide and counsel students with adjustment, academic problems, or career interests.	1	2	3	4	5

Figure 4

Role Conceptualization Instrument

Figure 4 Continued

6	Counsel students regarding educational issues such as course and program selection, class scheduling, and career planning.	1	2	3	4	5
7	Meet with students to discuss their progress, determine their priorities, and identify their resource needs.	1	2	3	4	5
8	Provide students with information on such topics as college degree programs and admission requirements, financial aid opportunities, trade and technical schools, and apprenticeship programs.	1	2	3	4	5
9	Present information on subjects related to career options and planning.	1	2	3	4	5
10	Discuss or provide information to students to promote their adjustment to new life experiences such as starting college or going to work.	1	2	3	4	5
11	Recommend career paths to students based on their interests, aptitudes, or educational assessments.	1	2	3	4	5
12	Prepare materials and classrooms for class activities.	1	2	3	4	5

Figure 4 Continued

13	Prepare for assigned classes.	1	2	3	4	5
14	Prepare objectives and outlines for courses of study.	1	2	3	4	5
15	Prepare and implement remedial programs for students requiring extra help.	1	2	3	4	5
16	Instruct through lectures, discussions, and demonstrations.	1	2	3	4	5
17	Adapt teaching methods and instructional materials to meet students' varying needs and interests.	1	2	3	4	5
18	Create a balanced program of instruction, demonstration, and work time for students.	1	2	3	4	5
19	Develop opportunities for students to observe, question, and investigate.	1	2	3	4	5
20	Develop and implement programs for students requiring extra help.	1	2	3	4	5
21	Establish clear objectives for all lessons, units, and projects, and communicate those objectives to students.	1	2	3	4	5
22	Prepare, administer, and grade tests and assignments to evaluate students' progress.	1	2	3	4	5

Figure 4 Continued

23	Assign and grade class work and homework.	1	2	3	4	5
24	Observe and evaluate students' performance.	1	2	3	4	5
25	Prepare reports on students and activities as required.	1	2	3	4	5
26	Evaluate individuals' abilities, interests, and other characteristics using tests, records, interviews, and other sources.	1	2	3	4	5

Please indicate the extent to which you agree or disagree with the following statements about your experience as an Educator:

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
I feel pressured to have more students attend college.	1	2	3	4	5
Most of the students from my school will go to college.	1	2	3	4	5
Parents and other teachers would look down on me for recommending a career path that did not include college after high school.	1	2	3	4	5
College is not the best choice for some of the students in my school, but I recommend it anyway.	1	2	3	4	5

Figure 5
Pressure to Recommend College Measure

Please indicate the extent to which you agree or disagree with the following statements about your experience as an Educator:

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
I often feel like I do not have enough time to complete my work.	1	2	3	4	5
I am often unable to follow through on scheduled activities with my students due to a lack of time.	1	2	3	4	5
Time pressure is not an issue for me at work.	1	2	3	4	5
The number of students that I have to work with prohibits me from doing activities that would benefit them.	1	2	3	4	5

Figure 6
Time Pressure Measure

Table 3

Overview of Individual Regression Analysis by Dependent Variable

How likely would you be to recommend each of the following careers?

		College		Work		Military	
		Count	%	Count	%	Count	%
Overall Model	$p > .1$	15	13	50	44	55	48
	No Variance**	1	1	5	4	11	10
	$p < .1$	98	86	59	52	48	42
R^2	Minimum*	0.40		0.39		0.40	
	Maximum*	0.88		0.78		0.78	
	Mean*	0.64		0.56		0.51	
	SD*	0.12		0.11		0.09	

* R^2 descriptors are for those individuals with significant overall models.

** No Variance indicates that the number and percentage of participants who demonstrated no variance in their recommendations for the given career. No variance in the recommendations precluded the calculation of R^2 values for these participants.

Table 4

Student Characteristics Statistics for All Dependent Variables

Student Characteristics for Likelihood to Recommend the Military

	Black		Hispanic		Conduct		Ability to Pay		Desire for Education		Academic Ability	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
P > .1	36	75	45	94	23	48	28	58	31	65	20	42
P < .1	12	25	3	6	25	52	20	42	17	35	28	58
	B		B		B		B		B		B	
Minimum	-1.04		-0.75		-1.01		0.15		-1.17		-0.88	
Maximum	0.84		0.66		0.84		1.15		0.66		0.69	
Mean	-0.26		-0.25		0.26		0.47		-0.21		-0.19	
SD	0.70		0.79		0.46		0.25		0.40		0.42	

Student Characteristics for Likelihood to Recommend College

	Black		Hispanic		Conduct		Ability to Pay		Desire for Education		Academic Ability	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
P > .1	86	88	86	88	48	49	64	65	41	42	16	16
P < .1	12	12	12	12	50	51	34	35	57	58	82	84
	B		B		B		B		B		B	
Minimum	-1.00		-1.02		-0.99		-0.25		-0.22		0.17	
Maximum	1.04		1.10		-0.20		0.67		1.44		1.71	
Mean	0.21		-0.15		-0.50		0.36		0.56		0.76	
SD	0.79		0.86		0.21		0.19		0.29		0.34	

Student Characteristics for Likelihood to Recommend Work

	Black		Hispanic		Conduct		Ability to Pay		Desire for Education		Academic Ability	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
P > .1	55	93	55	93	34	58	37	63	18	31	20	34
P < .1	4	7	4	7	25	42	22	37	41	69	39	66
	B		B		B		B		B		B	
Minimum	-0.97		-0.63		-0.24		-0.64		-0.94		-0.94	
Maximum	1.49		0.44		0.75		0.45		0.24		0.35	
Mean	0.09		-0.11		0.33		-0.26		-0.47		-0.46	
SD	1.10		0.58		0.23		0.31		0.24		0.25	

Table 5

Role Concept Scale Inter-correlation.

	Maintain Order	Guide	Prepare	Instruct	Evaluate
Maintain Order	0.68[a]				
Guide	0.05	0.90[a]			
Prepare	0.64[**]	0.11	0.84[a]		
Instruct	0.59[**]	0.12	0.91[**]	0.83[a]	
Evaluate	0.65[**]	0.08	0.86[**]	0.82[**]	0.84[a]

[a] Alpha reliability estimates are listed in the diagonal
[**] $p < .001$

	Item	Dimension
1	Guide and counsel students with adjustment, academic problems, or career interests	Guidance
2	Counsel students regarding educational issues such as course and program selection, class scheduling, and career planning	Guidance
3	Provide students with information on such topics as college degree programs and admission requirements, financial aid opportunities, trade and technical schools, and apprenticeship programs	Guidance
4	Present information on subjects related to career options and planning	Guidance
5	Discuss or provide information to students to promote their adjustment to new life experiences such as starting college or going to work	Guidance
6	Recommend career paths to students based on their interests, aptitudes, or educational assessments	Guidance
7	Prepare materials and classrooms for class activities	Teach
8	Prepare for assigned classes	Teach
9	Prepare objectives and outlines for courses of study	Teach
10	Instruct through lectures, discussions, and demonstrations	Teach
11	Adapt instructional methods and materials to meet students' varying needs and interests	Teach
12	Create a balanced program of instruction, demonstration, and work time for students	Teach
13	Develop opportunities for students to observe, question, and investigate	Teach
14	Establish clear objectives for all lessons, units, and projects, and communicate those objectives to students	Teach
15	Prepare, administer, and grade tests and assignments to evaluate students' progress	Teach
16	Assign and grade class work and homework	Teach

Figure 7
Modified Role Concept Measure Items

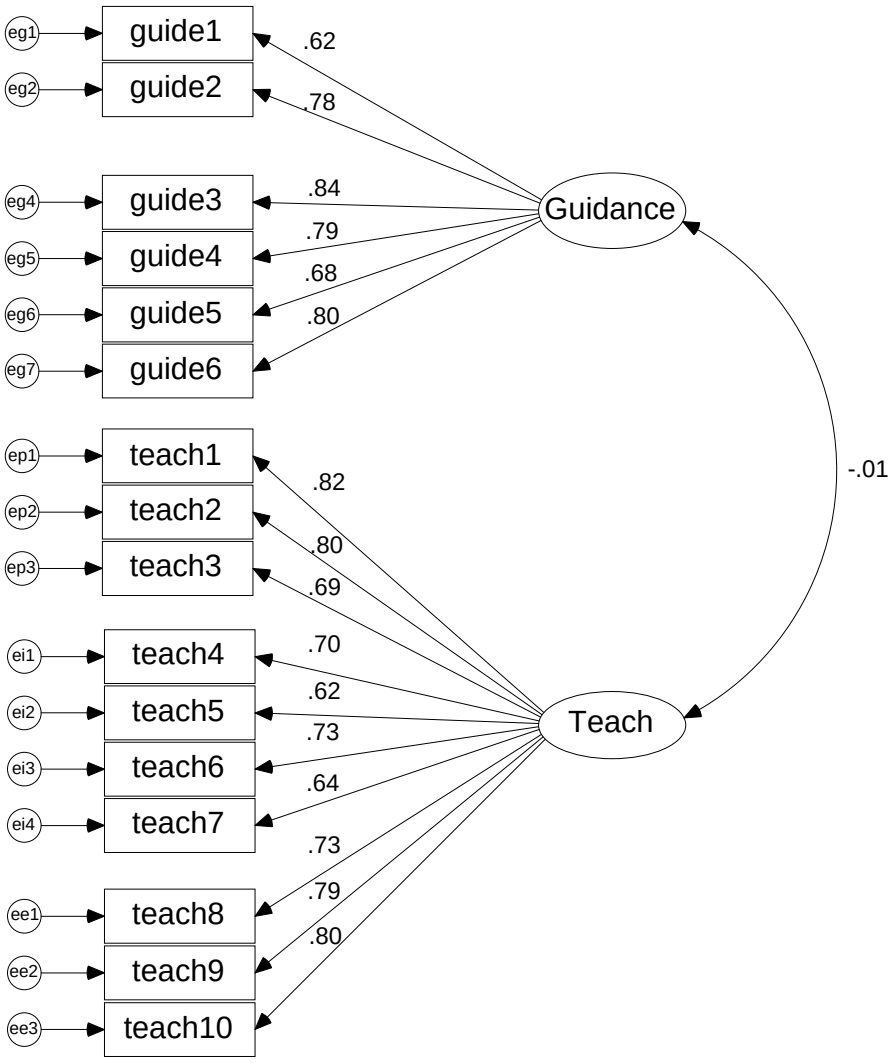

Figure 8

Factor Loading for Guidance Role Concept Measure.

Table 6

Item-Total Statistics for Educator Pressure Measures.

Pressure to Recommend College Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I feel pressured to have more students attend college	8.73	5.26	0.46	0.24	0.27
Most of the students from my school will go to college	8.66	6.76	0.13	0.15	0.59
Parents and other educators would look down on me for recommending a career path that did not include college after high school	9.14	5.18	0.53	0.29	0.22
College is not the best choice for some of the students in my school, but I recommend it anyway	9.16	6.93	0.14	0.16	0.57

Table 6 Continued

Time Pressure Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I often feel like I do not have enough time to complete my work	10.23	8.29	0.73	0.57	0.62
I am often unable to follow through on scheduled activities with my students due to a lack of time	10.89	8.02	0.65	0.47	0.66
Time pressure is not an issue for me at work (reverse coded)	10.46	9.32	0.48	0.35	0.75
The number of students that I have to work with prohibits me from doing activities that would benefit them	11.00	9.41	0.42	0.23	0.79

	Item
1	I feel pressured to have more students attend college
2	Parents would look down on me for recommending a career path that did not include college after high school
3	I feel pressure to recommend college to my students because my school's performance is based on the number of students who attend college
4	Other educators would look down on me for recommending a career path that did not include college after high school

Figure 9
Revised Pressure to Recommend College Items

	Item
1	I feel like I do not have enough time to complete my work
2	I am unable to follow through on scheduled activities with my students due to a lack of time
3	Time pressure is not an issue for me at work (reverse coded)
4	I spend time that could be used for activities with students completing paperwork or maintaining records

Figure 10
Revised Time Pressure Items

For each of the items below, please use the provided scale to indicate whether or not you believe the behavior described is an important part of your job. Behaviors that are a **"very important part of your job"** are those that you consider to be an essential aspect of your job. Behaviors that **"not an important part of your job"** are those that you consider to be a minor part of your particular job.

	Not an important part of my job	Slightly important part of my job	Moderately important part of my job	Important part of my job	Very important part of my job
Guide and counsel students with adjustment, academic problems, or career interests.	1	2	3	4	5
Counsel students regarding educational issues such as course and program selection, class scheduling, and career planning.	1	2	3	4	5
Provide students with information on such topics as college degree programs and admission requirements, financial aid opportunities, trade and technical schools, and apprenticeship programs.	1	2	3	4	5
Present information on subjects related to career options and planning.	1	2	3	4	5
Discuss or provide information to students to promote their adjustment to new life experiences such as starting college or going to work.	1	2	3	4	5
Recommend career paths to students based on their interests, aptitudes, or educational assessments.	1	2	3	4	5

Figure 11
Modified Educator Role Concept Measure.

Figure 11 Continued

Prepare materials and classrooms for class activities.	1	2	3	4	5
Prepare for assigned classes.	1	2	3	4	5
Prepare objectives and outlines for courses of study.	1	2	3	4	5
Instruct through lectures, discussions, and demonstrations.	1	2	3	4	5
Adapt instructional methods and materials to meet students' varying needs and interests.	1	2	3	4	5
Create a balanced program of instruction, demonstration, and work time for students.	1	2	3	4	5
Develop opportunities for students to observe, question, and investigate.	1	2	3	4	5
Establish clear objectives for all lessons, units, and projects, and communicate those objectives to students.	1	2	3	4	5
Prepare, administer, and grade tests and assignments to evaluate students' progress.	1	2	3	4	5
Assign and grade class work and homework.	1	2	3	4	5

Please indicate the extent to which you agree or disagree with the following statements about your experience as an Educator:

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
I feel pressured to have more students attend college.	1	2	3	4	5
I feel pressure to recommend college to my students because my school's performance is judged on the number of students who attend college.	1	2	3	4	5
Parents would look down on me for recommending a career path that did not include college after high school.	1	2	3	4	5
Other educators would look down on me for recommending a career path that did not include college after high school.	1	2	3	4	5

Figure 12
Modified Pressure to Recommend College Measure

Please indicate the extent to which you agree or disagree with the following statements about your experience as an Educator:

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
I often feel like I do not have enough time to complete my work.	1	2	3	4	5
I am unable to follow through on scheduled activities with my students due to a lack of time.	1	2	3	4	5
Time pressure is not an issue for me at work.	1	2	3	4	5
I spend time that could be used for activities with students completing paperwork or maintaining records.	1	2	3	4	5

Figure 13
Modified Educator Time Pressure Measure

Table 7

Full Data Collection Participant Demographic Information.

	Race				Gender	
	Hispanic	Black	Other	White	Female	Male
Count	58	23	6	689	567	214
%	7.4	2.9	.8	88.2	72.6	27.4

Table 8

Descriptive Statistics and Intercorrelations of Study Variables

Measure	M	SD	1	2	3	4	5	6	7
Teacher Measures									
1. GRC	18.78	5.60	(.87)[1]						
2. College P	11.35	3.49	.05	(.80)[1]					
3. Mil Exp	1.00[4]	-	.17**	.05	(-)[2]				
4. Pol Id	4.00[4]	-	-.03	.06	.04	(-)[2]			
Recommendations[5]									
5. College	3.60	0.60	.10**	.14**	-.03	.08*	(.66)[3]		
6. Military	3.45	0.90	.11**	.04	.11**	-.31**	-.07*	(.74)[3]	
7. Work	3.15	0.79	.06	-.04	.05	.01	-.12**	.18**	(.67)[3]

Notes: N = 781 unless otherwise indicated.
GRC indicates Guidance Role Concept. College P indicates pressure to recommend college. Mil Exp indicates Military Exposure. Pol Id indicates Political Ideology.
* $p < .05$. ** $p < .01$
Values in diagonal are reliability estimates where [1] indicates Cronbach's alpha, [2] indicates a that reliability was not estimated because the measure was a single item, [3] indicates test-retest reliability of repeated student biographical profiles.
[4] For variables measured by a single item, the mode was used as an indication of central tendency and the SD was not calculated.
[5] All recommendation mean and variance estimates are based on N = 17,182. Correlations for recommendations are based on each participant's mean recommendation for a given outcome, N = 781.

Table 9

Tests for differences between blocks among the decision dependent variables.

Likelihood to Recommend	df	F	p
College	3	1.71	.16
Military	3	.90	.44
Work	3	2.44	.06

Table 10

Baseline Residual Variance Estimate for the Unconditional Means Model.

Likelihood to Recommend	Residual Variance Estimate	Standard Error	z	p
College	.93	.01	89.23	<.01
Military	.37	.00	89.25	<.01
Work	.51	.01	89.21	<.01

Table 11

Student Characteristics Fixed Effect Estimates for Likelihood to Recommend College.

Student Characteristics	Estimate[1]	Standard Error	df	t	p
Student Race					
Black	.05	.01	1552	3.50	<.01
Hispanic	-.02	.01	1552	-1.71	.09
White[2]	0	.	.	.	.
Student Conduct	-.23	.01	16702	-23.76	<.01
Ability to Pay for Additional Education	.14	.01	16702	17.26	<.01
Desire for Additional Education	.29	.01	16702	25.51	<.01
Academic Ability	.54	.01	16702	35.92	<.01

[1]Estiamtes represent unstandardized weights.
[2]Estimates for the effect of student race were conducted in comparison to White and therefore, the estimate for student race equals white was zero.

Table 12

Student Characteristics Fixed Effect Estimates for Likelihood to Recommend the Military.

Student Characteristics	Estimate[1]	Standard Error	df	t	p
Student Race					
Black	-.02	.01	1552	-1.79	.07
Hispanic	.00	.01	1552	.03	.97
White[2]	0	.	.	.	.
Student Conduct	.07	.01	16702	7.20	<.01
Ability to Pay for Additional Education	-.09	.01	16702	-12.98	<.01
Desire for Additional Education	-.03	.01	16702	-4.09	<.01
Academic Ability	-.07	.01	16702	-8.02	<.01

[1]Estimates represent unstandardized weights.
[2]Estimates for the effect of student race were conducted in comparison to White and therefore, the estimate for student race equals white were zero.

Table 13

Student Characteristics Fixed Effect Estimates for Likelihood to Recommend the Work.

Student Characteristics	Estimate[1]	Standard Error	df	t	p
Student Race					
Black	-.03	.01	1552	-2.02	.04
Hispanic	.03	.01	1552	1.98	.05
White[2]	0	.	.	.	.
Student Conduct	.13	.01	16702	16.20	<.01
Ability to Pay for Additional Education	-.09	.01	16702	-12.81	<.01
Desire for Additional Education	-.20	.01	16702	-20.93	<.01
Academic Ability	-.22	.01	16702	-21.39	<.01

[1]Estimates represent unstandardized weights.
[2]Estimates for the effect of student race were conducted in comparison to White and therefore, the estimate for student race equals white were zero.

APPENDIX B

LIST OF SCENARIOS USE IN THE PILOT STUDY

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
1	1	White	None	Average	Some Desire	Below Average
1	2	Hispanic	None	Above Average	No Desire	Below Average
1	3	White	a few detentions	Below Average	No Desire	Average
1	4	Black	suspended on multiple occasions	Below Average	Strong Desire	Above Average
1	5	Hispanic	suspended on multiple occasions	Above Average	No Desire	Above Average
1	6	White	suspended on multiple occasions	Below Average	Some Desire	Below Average
1	7	White	None	Below Average	Some Desire	Average
1	8	Hispanic	None	Below Average	Strong Desire	Average
1	9	Black	None	Below Average	Some Desire	Above Average
1	10	Black	a few detentions	Above Average	No Desire	Below Average
1	11	White	suspended on multiple occasions	Above Average	Some Desire	Average
1	12	White	None	Average	No Desire	Above Average
1	13	Black	suspended on multiple occasions	Average	Strong Desire	Average
1	14	White	None	Average	Strong Desire	Average
1	15	Black	None	Above Average	Strong Desire	Average

Appendix B Continued

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
1	16	Hispanic	a few detentions	Below Average	Strong Desire	Above Average
1	17	Black	a few detentions	Average	Strong Desire	Below Average
1	18	Hispanic	a few detentions	Above Average	Some Desire	Above Average
1	19	Black	suspended on multiple occasions	Above Average	Strong Desire	Below Average
1	20	Hispanic	None	Below Average	Some Desire	Below Average
1	21	Black	a few detentions	Above Average	Some Desire	Average
1	22	Hispanic	a few detentions	Average	No Desire	Above Average
1	23	Hispanic	a few detentions	Below Average	No Desire	Below Average
1	24	White	suspended on multiple occasions	Average	Some Desire	Above Average
1	25	Hispanic	suspended on multiple occasions	Average	No Desire	Below Average
1	26	Black	suspended on multiple occasions	Average	No Desire	Above Average
1	27	White	a few detentions	Above Average	Strong Desire	Average
2	1	Black	None	Below Average	Strong Desire	Below Average
2	2	Hispanic	suspended on multiple occasions	Average	Strong Desire	Above Average
2	3	White	suspended on multiple occasions	Above Average	No Desire	Below Average
2	4	Black	a few detentions	Average	No Desire	Average

Appendix B Continued

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
2	5	White	suspended on multiple occasions	Below Average	No Desire	Above Average
2	6	Black	None	Above Average	Some Desire	Below Average
2	7	Black	a few detentions	Average	Some Desire	Above Average
2	8	White	suspended on multiple occasions	Average	Strong Desire	Below Average
2	9	White	a few detentions	Below Average	Some Desire	Above Average
2	10	Black	a few detentions	Below Average	Some Desire	Below Average
2	11	Hispanic	None	Average	Strong Desire	Below Average
2	12	Hispanic	a few detentions	Above Average	No Desire	Average
2	13	Hispanic	suspended on multiple occasions	Above Average	Some Desire	Below Average
2	14	Hispanic	None	Average	No Desire	Average
2	15	White	None	Above Average	No Desire	Average
2	16	Black	a few detentions	Below Average	Strong Desire	Average
2	17	Hispanic	suspended on multiple occasions	Below Average	Some Desire	Above Average
2	18	White	suspended on multiple occasions	Above Average	Strong Desire	Above Average
2	19	Hispanic	suspended on multiple occasions	Below Average	No Desire	Average
2	20	White	None	Above Average	Some Desire	Above Average

Appendix B Continued

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
2	21	White	a few detentions	Average	No Desire	Below Average
2	22	Hispanic	a few detentions	Average	Strong Desire	Average
2	23	Black	None	Average	No Desire	Below Average
2	24	Hispanic	None	Above Average	Some Desire	Average
2	25	Black	suspended on multiple occasions	Below Average	Some Desire	Average
2	26	Black	a few detentions	Above Average	Strong Desire	Above Average
2	27	White	None	Below Average	Strong Desire	Above Average
3	1	Black	None	Average	Strong Desire	Above Average
3	2	Hispanic	None	Above Average	Strong Desire	Above Average
3	3	Hispanic	a few detentions	Below Average	Some Desire	Average
3	4	Black	suspended on multiple occasions	Above Average	Some Desire	Above Average
3	5	White	a few detentions	Average	Some Desire	Average
3	6	Hispanic	None	Average	Some Desire	Above Average
3	7	Hispanic	a few detentions	Average	Some Desire	Below Average
3	8	White	None	Below Average	No Desire	Below Average
3	9	White	suspended on multiple occasions	Below Average	Strong Desire	Average
3	10	Hispanic	None	Below Average	No Desire	Above Average

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
3	11	Hispanic	suspended on multiple occasions	Below Average	Strong Desire	Below Average
3	12	White	a few detentions	Above Average	No Desire	Above Average
3	13	Black	a few detentions	Below Average	No Desire	Above Average
3	14	White	suspended on multiple occasions	Average	No Desire	Average
3	15	White	a few detentions	Average	Strong Desire	Above Average
3	16	Black	suspended on multiple occasions	Average	Some Desire	Below Average
3	17	Hispanic	suspended on multiple occasions	Above Average	Strong Desire	Average
3	18	Black	suspended on multiple occasions	Below Average	No Desire	Below Average
3	19	White	a few detentions	Above Average	Some Desire	Below Average
3	20	Black	None	Above Average	No Desire	Above Average
3	21	White	None	Above Average	Strong Desire	Below Average
3	22	Black	suspended on multiple occasions	Above Average	No Desire	Average
3	23	White	a few detentions	Below Average	Strong Desire	Below Average
3	24	Hispanic	a few detentions	Above Average	Strong Desire	Below Average
3	25	Hispanic	suspended on multiple occasions	Average	Some Desire	Average

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
3	26	Black	None	Below Average	No Desire	Average
3	27	Black	None	Average	Some Desire	Average

APPENDIX C

LIST OF SCENARIOS USED IN THE FULL DATA COLLECTION

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
1	**1**	Black	Suspended on multiple occasions	Above Average	Strong Desire	Above Average
1	**2**	White	None	Below Average	Strong Desire	Above Average
1	**3**	Black	Suspended on multiple occasions	Average	Some Desire	Below Average
1	**4**	White	None	Average	Some Desire	Above Average
1	**5**	White	A few detentions	Average	Strong Desire	Average
1	**6**	White	A few detentions	Below Average	Some Desire	Above Average
1	**7**	Hispanic	A few detentions	Above Average	Strong Desire	Below Average
1	**8**	Black	None	Above Average	No Desire	Average
1	**9**	Hispanic	A few detentions	Above Average	Some Desire	Above Average
1	**10**	White	Suspended on multiple occasions	Average	No Desire	Below Average
1	**11**	Hispanic	Suspended on multiple occasions	Below Average	Strong Desire	Above Average
1	**12**	White	None	Above Average	No Desire	Above Average
1	**13**	Hispanic	Suspended on multiple occasions	Average	No Desire	Average
1	**14**	Black	A few detentions	Above Average	Some Desire	Below Average
1	**15**	Hispanic	None	Below Average	Strong Desire	Below Average

Appendix C Continued

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
1	**16**	Hispanic	Suspended on multiple occasions	Below Average	Some Desire	Average
1	**17**	Black	Suspended on multiple occasions	Above Average	No Desire	Below Average
1	**18**	White	A few detentions	Below Average	No Desire	Average
1	**19**	Black	None	Below Average	Some Desire	Below Average
1	**20**	Black	A few detentions	Average	No Desire	Average
2	**1**	Hispanic	None	Average	Strong Desire	Average
2	**2**	White	None	Below Average	Some Desire	Average
2	**3**	Hispanic	Suspended on multiple occasions	Above Average	Strong Desire	Average
2	**4**	Hispanic	A few detentions	Below Average	Some Desire	Below Average
2	**5**	Black	Suspended on multiple occasions	Below Average	Strong Desire	Below Average
2	**6**	Black	None	Average	Strong Desire	Above Average
2	**7**	Hispanic	A few detentions	Above Average	No Desire	Average
2	**8**	White	A few detentions	Average	No Desire	Above Average
2	**9**	White	Suspended on multiple occasions	Above Average	No Desire	Average
2	**10**	Black	A few detentions	Above Average	Strong Desire	Average
2	**11**	White	None	Below Average	No Desire	Below Average

Appendix C Continued

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
2	**12**	White	A few detentions	Above Average	Some Desire	Average
2	**13**	Black	Suspended on multiple occasions	Below Average	Some Desire	Above Average
2	**14**	Black	None	Average	No Desire	Below Average
2	**15**	White	None	Average	Strong Desire	Below Average
2	**16**	Black	A few detentions	Below Average	Strong Desire	Above Average
2	**17**	Hispanic	Suspended on multiple occasions	Above Average	No Desire	Above Average
2	**18**	Hispanic	Suspended on multiple occasions	Average	Some Desire	Above Average
2	**19**	Hispanic	Suspended on multiple occasions	Below Average	No Desire	Below Average
2	**20**	Black	A few detentions	Average	Some Desire	Above Average
3	**1**	Hispanic	Suspended on multiple occasions	Average	Strong Desire	Below Average
3	**2**	White	Suspended on multiple occasions	Average	Strong Desire	Above Average
3	**3**	Black	None	Below Average	No Desire	Above Average
3	**4**	White	A few detentions	Average	Some Desire	Below Average
3	**5**	Black	A few detentions	Below Average	Some Desire	Average
3	**6**	White	None	Above Average	Strong Desire	Average

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
3	**7**	Hispanic	None	Below Average	No Desire	Average
3	**8**	Hispanic	A few detentions	Below Average	No Desire	Above Average
3	**9**	White	None	Above Average	Some Desire	Below Average
3	**10**	White	A few detentions	Above Average	Strong Desire	Above Average
3	**11**	Black	Suspended on multiple occasions	Average	Strong Desire	Average
3	**12**	White	A few detentions	Below Average	Strong Desire	Below Average
3	**13**	Hispanic	A few detentions	Average	No Desire	Below Average
3	**14**	Hispanic	Suspended on multiple occasions	Above Average	Some Desire	Below Average
3	**15**	White	Suspended on multiple occasions	Above Average	Some Desire	Above Average
3	**16**	Black	Suspended on multiple occasions	Above Average	Some Desire	Average
3	**17**	Hispanic	None	Average	No Desire	Above Average
3	**18**	Hispanic	None	Average	Some Desire	Below Average
3	**19**	Black	Suspended on multiple occasions	Below Average	No Desire	Average
3	**20**	Black	None	Below Average	Strong Desire	Average
4	**1**	White	A few detentions	Above Average	No Desire	Below Average
4	**2**	Hispanic	A few detentions	Average	Strong Desire	Above Average

Appendix C Continued

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
4	**3**	Hispanic	None	Below Average	Some Desire	Above Average
4	**4**	White	None	Average	No Desire	Average
4	**5**	Hispanic	None	Above Average	No Desire	Below Average
4	**6**	Hispanic	A few detentions	Below Average	Strong Desire	Average
4	**7**	Black	None	Above Average	Some Desire	Above Average
4	**8**	Black	A few detentions	Above Average	No Desire	Above Average
4	**9**	Black	Suspended on multiple occasions	Average	No Desire	Above Average
4	**10**	Hispanic	None	Above Average	Some Desire	Average
4	**11**	White	Suspended on multiple occasions	Below Average	Some Desire	Below Average
4	**12**	Hispanic	None	Above Average	Strong Desire	Above Average
4	**13**	White	Suspended on multiple occasions	Average	Some Desire	Average
4	**14**	Black	A few detentions	Below Average	No Desire	Below Average
4	**15**	Hispanic	A few detentions	Average	Some Desire	Average
4	**16**	White	Suspended on multiple occasions	Below Average	Strong Desire	Average
4	**17**	White	Suspended on multiple occasions	Below Average	No Desire	Above Average
4	**18**	White	Suspended on multiple occasions	Above Average	Strong Desire	Below Average
4	**19**	Black	None	Average	Some Desire	Average

Block	Profile	Race	Student Conduct	Ability to Pay for Additional Education	Desire for Additional Education	Academic Ability
4	**20**	Black	A few detentions	Average	Strong Desire	Below Average

APPENDIX D

VARIANCE IN THE WEIGHTS USED FOR STUDENT CHARACTERISTICS

Student Characteristics	Variance	Standard Error	z	p
College				
Student Race	.01	.006	1.39	.08
Student Conduct	.04	.004	10.73	<.01
Ability to Pay for Additional Education	.02	.003	6.91	<.01
Desire for Additional Education	.06	.005	13.05	<.01
Academic Ability	.14	.008	15.98	<.01
Military				
Student Race	.01	.005	1.11	.13
Student Conduct	.05	.004	13.80	<.01
Ability to Pay for Additional Education	.02	.002	8.92	<.01
Desire for Additional Education	.02	.002	8.54	<.01
Academic Ability	.05	.003	13.82	<.01

Student Characteristics	Variance	Standard Error	z	p
Work				
Student Race	.03	.007	4.56	<.01
Student Conduct	.02	.003	9.71	<.01
Ability to Pay for Additional Education	.01	.002	5.62	<.01
Desire for Additional Education	.05	.005	13.16	<.01
Academic Ability	.06	.004	13.95	<.01

VITA

Scott Richard Turner was born and raised in Berwyn, IL a near west suburb of Chicago, where he graduated from J. Sterling Morton West high school in 1988. After a brief stint at Valparaiso University in Valparaiso, IN, Scott joined the United States Navy in 1990. While in the Navy, Scott attended Naval Nuclear Power School and served aboard the USS West Virginia until 1996. Scott attended Florida Atlantic University and graduated Magna Cum Laud with a B.A. in Psychology in 2000. Scott received his Ph.D. in Industrial and Organizational Psychology in 2008.

Scott is currently the Director of Survey Research for Fors Marsh Group, LLC in Arlington, VA.