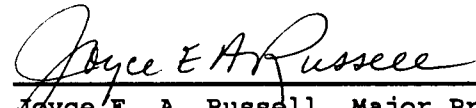
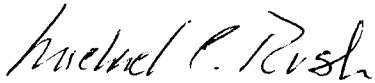


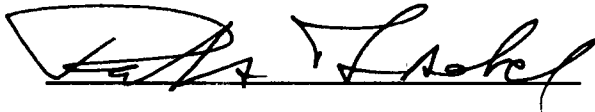
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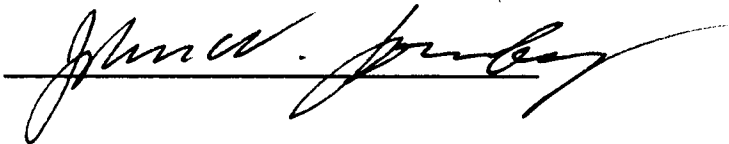
I am submitting herewith a dissertation written by Mark Louis Poteet entitled "The Training Transfer Process: An Examination of the Role of Individual, Motivational, and Work Environmental Factors." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Industrial/Organizational Psychology.


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THE TRAINING TRANSFER PROCESS:
AN EXAMINATION OF THE ROLE OF INDIVIDUAL, MOTIVATIONAL,
AND WORK ENVIRONMENTAL FACTORS

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Mark Louis Poteet

August 1996

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ACKNOWLEDGMENTS

Many individuals have had a positive influence on my graduate career and have helped me complete this dissertation. First, I would like to thank the members of my committee, Joyce Russell, Tom Ladd, John Lounsbury, Mike Rush, and the late Greg Dobbins, for all their support. Much thanks and appreciation go to my dissertation chair, Joyce Russell, who filled a void in my committee and offered many valuable suggestions and ideas which ultimately furthered the manuscript. Many of the ideas tested in this study resulted from her training and development seminar, and without her assistance, I would never have been able to carry out this project. Her willingness and desire to fully participate in this endeavor will always be remembered. Thanks also go to Tom Ladd, who devoted considerable time to helping me understand and work through the difficult problems encountered with analyzing and interpreting the data. His patience and calming influence are greatly appreciated. I also thank John Lounsbury, who provided several suggestions that improved the paper and who has been a constant source of guidance and knowledge over the past several years. Gratitude is also expressed to Mike Rush, who willingly joined my committee midway through the data collection process. His suggestions and ideas have improved the manuscript and should prove valuable for future publication efforts. Finally, I would like to offer my thanks to Greg Dobbins, who, sadly, passed away while I was collecting data for this study. From the time I began working with Greg until his death, he taught me how to conceptualize a problem, how to develop sound hypotheses, and how to test those hypotheses in an effective manner. His presence will be sorely missed as I set forth on my post-graduate career.

I would like to express my appreciation to those peers who aided in various aspects of the data collection and coding process. Without the diligent assistance of Danielle Adams, Suzanne Bennett, Laura Gniatczyk, Sabine Maetzke, Stacy McManus, and Debrah Zegelbone, completion of the study would have been extremely difficult. Much thanks also goes to Jeff Kudisch for providing some of the training materials, and to Jackie DeMatteo for providing some of the scale items used in the current study. I would also like to thank Lynn Curtis, Carolyn Facteau, Jeff Facteau, Stephanie Myers, and Will Schoel for their words of encouragement and support.

Much appreciation is expressed to the Management department secretaries for all their helpful advice and guidance. June Trbovich, Carolyn Alfrey, Maggie Bakalar, and Jackie Cook were always willing to answer my questions and fulfill my requests without the slightest hesitation. In my six years as part of the I/O program, not once did I hear, "No, I can't do that" - they always found a way to help. Their assistance and friendship will be missed tremendously. Thanks also goes to Scott Buechler and the rest of the MBA faculty for allowing me to collect data from the MBA program.

I would also like to thank my parents, Helen Poteet and Art Poteet, and my siblings Paula and Tim. They all made an effort to learn about my life as a graduate student and have shown tremendous amounts of support. Special thanks goes to my mom, Helen, who encouraged me to vigorously pursue my goals and never settle for second-best.

Last, but certainly not least, I would like to thank my wife, Tammy, and my stepson, Ethan. This dissertation is dedicated to them. Ethan took a genuine interest in my dissertation and never complained when I had to spend many hours in front of the computer rather than

spending time with him. I will always remember with great love the many times he offered and contributed his help to this project. It is impossible for me to adequately convey my sincere gratitude to Tammy. In addition to critiquing my work and offering her many wonderful suggestions, she provided me with unending support, patience, and encouragement, all of which ultimately saw me through many difficult times and gave me the confidence to continue this endeavor. Together, Tammy and Ethan provided me with a constant source of inspiration from which I drew the strength to complete this dissertation.

ABSTRACT

The purpose of the present study was to examine the role of individual, motivational, and work environmental factors in the transfer of training process. A measure of motivation to transfer was created based on the expectancy theory of motivation and was hypothesized to predict subsequent transfer of training. Self-efficacy and career planning were individual factors hypothesized to positively affect motivation to transfer. The work environmental factors of expected advisor support, expected peer support, and expected accountability were hypothesized to be positively associated with motivation to transfer. Motivation to transfer, experienced advisor support, experienced peer support, and experienced accountability were all predicted to be positively related to four measures of training transfer: (1) self-report transfer; (2) peer-report transfer; (3) behavioral specificity of subjects' comments on the rating form; and (4) amount of halo and range restriction in subjects' performance ratings.

A total of 136 Master of Business Administration students participated in the current study. Data for the study was drawn from the administration and evaluation of a rater training program the students attended. The rater training program was a component of a peer performance appraisal system the students participated in as part of their academic program. Measures of the constructs of interest were gathered through administration of surveys at four time intervals: immediately preceding training; immediately following training; four to five weeks after training; and five to six weeks after training.

The results demonstrated that subjects' self-efficacy, expected peer support, and expected accountability significantly affected their

motivation to transfer. Experienced accountability was significantly related to self-reported transfer and rating effects in subjects' performance ratings. Motivation to transfer was marginally related to the behavioral specificity of subjects' open-ended performance comments. Contrary to what was predicted, experienced peer support was negatively related to rating effects in subjects' ratings. Limitations to the study, theoretical and practical implications, and future research suggestions are presented.

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CHAPTER I

INTRODUCTION

Formal training programs are used by many organizations to improve both individual and organizational performance. It has been estimated that corporations spend over \$200 billion a year on training programs, with single corporations investing hundreds of millions of dollars each year training their workforces (London, 1989; McKenna, 1990). Despite the high numbers of formal training programs in organizations and the vast resources devoted to them, researchers have concluded that little of what is learned in training actually transfers to the work situation once an individual returns to his or her job (Baldwin & Ford, 1988; Georgenson, 1982; Goldstein, 1986; Mosel, 1957; Wexley & Latham, 1981). Even in cases where transfer of training may exist, the overall lack of systematic efforts to measure it leaves most organizations at a loss when attempting to examine the effectiveness of training efforts. Thus, organizations would seem to be obtaining minimal overall return (e.g., increased job performance; higher organizational productivity) from their investment in training. For this reason, researchers have recently devoted attention to understanding the transfer process in order to increase the positive transfer of training. Positive transfer is defined as the degree to which individuals effectively apply the skills and knowledge learned in training to their jobs to increase their job or task performance (Wexley & Latham, 1981). The purpose of the current study is to add to this growing body of literature by examining several antecedents to individuals' motivation to transfer and the subsequent transfer of their training skills.

Early research on training transfer has focused on four major themes of research: the content of the programs; the underlying processes taught in the programs; the individual attributes related to transfer; and the work environment characteristics which can facilitate or inhibit the transfer of training. Each of these four avenues of research is briefly described in the following sections.

One of the earliest lines of research on training transfer emphasized the importance of designing training programs so that learning principles were incorporated into the training content. For example, principles such as identical elements (cf., Thorndike & Woodworth, 1901), general principles theory (cf., McGehee & Thayer, 1961), stimulus variability (cf., Ellis, 1965), and conditions of practice (e.g., Briggs & Naylor, 1962) were thought to be important in enhancing transfer of knowledge, skills, and abilities gained in training back to the job. Proponents of this line of research argued that transfer could be indirectly increased by modifying the methods of instruction to incorporate these learning principles. For example, utilizing the principle of stimulus variability, researchers would include a variety of learning examples and problems in the training program in order to help trainees see the applicability of the training skills to a new situation, thus increasing transfer of training.

A second line of research centered on the design of training programs, yet differed from earlier research in that its primary focus was on the "processes" which individuals use to facilitate the transfer of trained skills to the job. The "process" approach has as its goal to instruct the trainee on how to transfer trained skills back to the job. For example, "process" approach researchers would incorporate processes such as self-management or goal-setting training within the framework of

the overall training program in order to teach trainees how to react to obstacles that may inhibit their transfer of training or how to set goals for transferring training. Examples of the process approach include behavioral self-management (Frayne & Latham, 1987; Gist, Bavetta, & Stevens, 1990; Gist, Stevens, & Bavetta, 1991; Latham & Frayne, 1989; Marx, 1982; Tziner, Haccoun, & Kadish, 1991) and goal-setting (e.g., Gist et al., 1990; Gist et al., 1991; Reber & Wallin, 1984; Russell, Wexley, & Hunter, 1984; Wexley & Baldwin, 1986; Wexley & Nemeroff, 1975).

A third line of research on training transfer has focused on identifying the individual-difference characteristics which affect transfer of training. These characteristics include personality factors such as locus of control (Baumgartel, Reynolds, & Pathan, 1984; Noe & Schmitt, 1986; Tziner et al., 1991) and need for achievement (Baumgartel et al., 1984; Martineau, 1996), and cognitive factors such as self-efficacy (Ford, Quiñones, Sego, & Sorra, 1992; Gist et al., 1991) and career planning aspirations (Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995; Mathieu, Tannenbaum, & Salas, 1992; Noe & Schmitt, 1986). They also include attitudinal variables such as job involvement (Mathieu et al., 1992; Noe & Schmitt, 1986) and organizational commitment (Facteau et al., 1995), and individual ability (Ford et al., 1992).

A final line of research attempted to identify work environment characteristics that facilitate or inhibit the transfer of training (Noe & Schmitt, 1986). Aspects of the work environment that have been empirically examined include general organizational support (e.g., freedom to set goals; degree of open communication) (Baumgartel & Jeanpierre, 1972; Baumgartel et al., 1984; Hand, Richards, & Slocum, 1973), workgroup support for training (Clark, 1990; Facteau et al.,

1995; Ford et al., 1992; Huczynski & Lewis, 1980; Tziner & Falbe, 1993; Tziner et al., 1991), situational/task constraints (Facteau et al., 1995; Martineau, 1996), pace of work within the workgroup (Ford et al., 1992), and overall transfer climate (Rouiller & Goldstein, 1993; Tracey, Tannenbaum, & Kavanagh, 1995).

Overall, these lines of research have uncovered many interesting findings, from both a practical and theoretical standpoint. For example, research in the area of process-based training design has demonstrated that incorporating self-management or goal-setting techniques into training can have positive effects on post-training behavior (e.g., Frayne & Latham, 1987; Gist et al., 1990; Gist et al., 1991; Wexley & Baldwin, 1986). Research has also demonstrated that some individual factors, such as self-efficacy (Ford et al., 1992) and need for achievement (Baumgartel et al., 1984) are related to actual training transfer. Research in the area of work environment factors has shown that factors such as work group support (e.g., Ford et al., 1992) and transfer climate (e.g., Tracey et al., 1995) are related to training transfer. Despite advances in this research, however, many issues and concerns exist (see Baldwin & Ford, 1988, for a review). For example, despite the growing importance attached to the topic of training transfer, it has received less research attention than other measures of training effectiveness, such as trainee reactions and learning (Baldwin & Ford, 1988). Hence, much about the training transfer process still remains unknown. Second, a significant portion of what is known about training transfer was gathered from earlier studies which involved training programs on simple motor or verbal skills (Baldwin & Ford, 1988). The extent to which these findings generalize to more complex organizational training programs (e.g., performance appraisal training,

interview training) is unknown, as research involving these types of training programs is relatively limited (Gist et al., 1990). Third, much of the research literature on training transfer has used self-reports of behavior change as the sole measure of training transfer. Because the biases often associated with self-report measures limit the validity of the findings from such studies, researchers have argued that more behaviorally-based outcome measures should be used to examine training transfer (Baldwin & Ford, 1988).

Most important, however, is that despite what is known about the factors which affect transfer, past research has done relatively little to aid in the understanding of "why" training skills are or are not learned and transferred to the job (Campbell, 1988; Tannenbaum & Yukl, 1992). To address this concern, several researchers have suggested that more research attention should be directed at examining the motivational antecedents of training effectiveness and transfer (Campbell, 1988, 1989; Latham, 1988; Noe, 1986). Heeding this call, several researchers have begun to assess the effects of trainee motivation on the learning of training material (e.g., Baldwin & Karl, 1987; Baldwin, Magjuka, & Loher, 1991; Mathieu et al., 1992; Noe & Schmitt, 1986). While this recent line of research has added to our knowledge of the learning process, little, if any, research has focused on understanding trainee motivation to actually transfer what they have learned in training back to the job. The few studies that have examined motivation to transfer have offered mixed results. For example, while Martineau (1996) found a positive relationship between motivation to transfer and post-training job performance, Noe and Schmitt (1986) failed to find a significant relationship between performance and a post-training motivation measure. Overall, given the early state of research into motivation to transfer

and the mixed findings to date, few conclusions can be drawn about the relationship between motivation to transfer and transfer of training.

One purpose for the present study is to further explore the role of trainee motivation on the transfer of training skills. As opposed to previous studies on motivation to transfer, however, the study incorporates the expectancy theory of motivation (Vroom, 1964) as a framework for the theoretical development and operationalization of the motivation to transfer measure. Baldwin and Ford (1988) recommended the expectancy theory approach (i.e., subjective expected utility) as a useful tool for examining motivation to transfer, and several authors have successfully integrated this approach when studying general training motivation and motivation to learn (Baldwin & Karl, 1987; Mathieu et al., 1992; Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991). The current study operationalizes motivation to transfer according to procedures recommended by Lawler (1981), and tests the hypothesis that this expectancy theory-based measure of motivation to transfer would be positively related to training transfer.

Another purpose of the current study is to examine various factors that might impact individuals' motivation to transfer their training skills. Drawing from Baldwin and Ford's (1988) training transfer framework, two individual attributes and three work environment variables are posited to affect subjects' motivation to transfer. The first individual variable is an individual's level of career planning. Noe (1986) suggested that individuals' participation in career planning activities may be related to their training-related motivation. While some researchers have examined the relationship between career planning and training motivation (e.g., pre-training motivation; general training motivation), evidence for this relationship is mixed (Mathieu et al.,

1992; Noe & Schmitt, 1986). Further, no studies to date have investigated the impact of subjects' career planning on their motivation to transfer training skills. Past researchers have reasoned that individuals who participate in more career planning (i.e., clear career objectives; strategies for achieving objectives; plan for career) may have a better understanding of their strengths and weaknesses, and should be more willing to participate in training that has some career utility for them (Noe, 1986). Applied within the proposed expectancy theory framework of the current study, to the extent that subjects who are high in career planning perceive that using their training skills will result in outcomes that are desired and have utility for their career development (e.g., receiving recognition; being given better or more challenging projects; performing work better), they should be more motivated to transfer those skills. Conversely, those subjects who do not have high levels of career planning may not be able to perceive the career-oriented utility of using their training skills, and thus may be less motivated to transfer training skills. Even if low career planning individuals do feel that using the skills could result in outcomes that have utility for their career, because they show little planning for their career (i.e., few objectives; few clear goals), they may be uninterested in obtaining those outcomes; thus, they may be less motivated to use their skills. Because past research on this variable has failed to offer conclusive evidence, and because no studies have investigated the relationship between career planning and motivation to transfer, one goal of the present study is to examine this relationship.

The second individual characteristic proposed to affect motivation to transfer is self-efficacy for using the training skills. Self-efficacy refers to an individual's belief in his or her ability to

successfully complete a task (Bandura, 1977, 1982; Gist, 1987). The concept of self-efficacy is similar to Ajzen's (1991) notion of perceived behavioral control in his theory of planned behavior. Ajzen suggested that when individuals perceive that they have greater control over performing a behavior, they should have more intentions to perform that behavior. Applied to the current study, this suggests that individuals who have high confidence in their ability to perform a task (i.e., high self-efficacy) should have high intentions to perform that task. The higher one's self-efficacy, the greater his or her intention or motivation to transfer. In the training literature, self-efficacy has been related to individuals' performance in training (Gist et al., 1991; Tannenbaum et al., 1991), opportunity to use trained tasks on the job (Ford et al., 1992), and job attendance following job attendance training (Frayne & Latham, 1987; Latham & Frayne, 1989). Thus, much training has been conducted on the direct link from self-efficacy to actual training performance and transfer. Much less research, however, has assessed the relationship between self-efficacy and training-related motivation. The current study examines this potential relationship. It is hypothesized that subjects who possess greater confidence in their ability to perform a skill (i.e., self-efficacy) will be more motivated to transfer that skill.

Many facets of individuals' work environment have been posited to affect their motivation to transfer and actual transfer of training skills (cf., Rouiller & Goldstein, 1993). Preliminary research into the effects of the work environment on transfer of training has yielded promising results (e.g., Fecteau et al., 1995; Ford et al., 1992; Rouiller & Goldstein, 1993; Tracey et al., 1995). For example, Fecteau et al. (1995) demonstrated that several types of workgroup support

(e.g., subordinate, peer) were related to self-reported transfer. Further, Tracey et al. (1995) found that overall transfer climate was predictive of training transfer as measured by supervisor ratings of trainees' post-training behavior. Nevertheless, some gaps in the research literature exist. For example, the impact of work environment factors on motivation to transfer has received little research attention. Further, some research on training transfer (e.g., Tracey et al., 1995) has investigated the influence of overall transfer climate or workgroup support, which typically represents an aggregate of several specific characteristics of the work environment (e.g., social and goal cues; task cues). Thus, knowledge regarding the independent effects of individual work environment characteristics on motivation to transfer and subsequent transfer of training is relatively limited. In one of the few studies to distinguish between several facets of work environment, Fecteau et al. (1995) demonstrated that different types of support (e.g., subordinate; peer; supervisor) had differential effects on pre-training motivation and self-reported transfer.

Three work environment characteristics are investigated in the present study. These include support from peers, support from a supervisor, and perceived accountability. However, consistent with Clark (1990), the present investigation makes a distinction between individuals' "expected" work environment and their "experienced" work environment for the following reason. It is conceivable that immediately following a training program and prior to returning to the job, individuals have some expectations about the level of work environmental support for transferring their training skills they will receive. These expectations may then affect their motivation to transfer the trained skills. On the other hand, the support that

individuals actually experience from their work environment once back on their jobs may or may not be different from their initial expectations, such that the support received actually affects training transfer independent of their initial motivation to transfer. To illustrate this point, consider the following example. During a training program an individual expects to receive much transfer-related support from his or her workgroup, and because of this expected support, he or she is more motivated to transfer his or her skills. However, once back on the job, the individual receives very little workgroup support and, consequently, transfers very little of the training to the job. In this example, despite having high motivation to transfer, the individual does not transfer his or her skills because he or she experienced very little support from the environment. Because of this potential relationship, the work environmental factors are separated into "expected" and "experienced" measures.

In the current study, it is hypothesized that individuals' expected levels of peer support, supervisor support, and accountability will be positively associated with their motivation to transfer. To the extent that peers or supervisors are expected to support training transfer efforts through providing reinforcement (e.g., providing rewards such as respect, coaching and development opportunities, recognition, or more challenging assignments), offering encouragement, providing feedback, attempting to use the skills themselves, etc., then individuals' motivation to transfer should be high. Similar to the concept of subjective norm (Ajzen, 1991), to the extent that individuals expect greater accountability for using their training skills, they should show higher motivation to transfer their trained skills.

Another important purpose of the study is to examine the factors related to the actual transfer of training. As described earlier, it is hypothesized that subjects' motivation to transfer will be positively related to their subsequent transfer of training (cf., Ajzen, 1985, 1991). Additionally, it is expected that "experienced" peer and supervisor support, as well as "experienced" accountability, will be related to the actual transfer of training skills. To the extent that one's peers support efforts to apply new skills to the work setting, one should be more likely to transfer those skills. Similarly, positive transfer of training should be more likely to occur when one's supervisor actually demonstrates supportive behaviors (e.g., allowing to practice; providing advice). Finally, to the extent that individuals perceive they are held accountable for using their trained skills, they should be more apt to apply them to the work context.

In summary, the present study hypothesizes that career planning, self-efficacy, expected peer support, expected supervisor support, and expected accountability will be related to subjects' motivation to transfer. Further, subjects' motivation to transfer, experienced peer support, experienced supervisor support, and experienced accountability are expected to be related to their actual transfer of training skills. Recognizing that subjects' motivation to transfer and training transfer may also be partly determined by their knowledge of the training material, a post-training learning measure was used to control for the effects of subjects' knowledge on their motivation and subsequent transfer of training.

The present study adds to a growing body of research examining the impact of individual, motivational, and environmental factors on transfer of training. First, a measure of motivation to transfer is

created based on the expectancy theory of motivation. Second, several individual and expected work environment factors are hypothesized to affect motivation to transfer. Third, motivation to transfer and three experienced work environment factors are hypothesized to affect actual transfer of training. The study hypotheses are tested with data collected from the administration and evaluation of a performance appraisal rater training program for first-year Master of Business Administration (MBA) students.

From a theoretical perspective, the study addresses several limitations of previous transfer research, such as the use of simple motor or verbal skill training programs, the use of self-report measures of transfer, and the lack of a theoretical base for examining training effectiveness and transfer. Further, the current study integrates antecedents of motivation that have been investigated in other training effectiveness areas (e.g., motivation to learn) into the motivation to transfer literature. From an applied perspective, the results of the study may provide organizations with a tool for assessing which individuals are or are not likely to transfer their skills back to the workplace. Further, the use of the expectancy theory-based measure of motivation to transfer may offer some prescriptive utility for determining what interventions may best be used to increase transfer of training (e.g., providing rewards that are more valued; increasing trainees' understanding regarding the link between increased performance and rewards). Finally, the study may also demonstrate the importance of considering the influence of work environment characteristics on both individuals' motivation to transfer and subsequent transfer of training.

CHAPTER II

LITERATURE REVIEW

Training has been described as a planned learning experience intended to affect change to an individual's knowledge, skills, or attitudes (Campbell, Dunnette, Lawler, & Weick, 1970). Formal training and development programs are increasingly used by organizations to meet the unique challenges posed by current economic, social, and workplace issues (Goldstein, 1991). Recent estimates indicate that corporations spend over \$200 billion a year on training programs, with large corporations such as IBM spending hundreds of millions of dollars each year (London, 1989; McKenna, 1990). In a recent survey of Fortune 500 firms, Ralphs and Stephan (1986) found that over 90% of those firms offer some type of formal training program to its employees. Further, current trends such as increased global competition, changes in workforce demographics (e.g., decrease in entry-level youth; increase in minority-based workforce), rapid advancements in technology, and a shift from a manufacturing-oriented to a service-oriented economy all but guarantee that formal training will continue to be viewed as important, and used more frequently for providing employees with the necessary skills and knowledge to increase individual and organizational effectiveness (cf., Goldstein & Associates, 1989; Johnston & Packer, 1987; London, 1989).

Given the importance of training for maintaining an organization's competitive advantage, it is vitally important that organizations implement training programs that are effective at improving individual and organizational performance. This becomes even more important considering the fact that many organizations are facing downsizing and

reorganization issues and may have fewer financial resources to devote to the training effort.

Over the years, it has been noted by several researchers that the field of training and development is experiencing a "transfer" problem (Baldwin & Ford, 1988; Goldstein, 1986; Michalak, 1981; Mosel, 1957; Wexley & Latham, 1981). For positive transfer to occur, trainees must take the knowledge and skills they learn in training and effectively apply them to the work setting (i.e., use their skills on the job). Despite the vast resources that are dedicated to training efforts, many researchers have concluded that very little of what is learned in training is actually transferred to the work situation. It comes as no surprise then that Goldstein and Musicante (1986) suggested that training transfer should be the key issue of inquiry for researchers in the field of training and development.

State of the Research on Training Transfer

Because the absence of training transfer represents a losing investment on behalf of both the trainee and the organization, much research attention has focused on ways to improve the transfer of trained skills, knowledge, or attitudes. As outlined by Baldwin and Ford (1988), most of the early research on training transfer has examined the effects of incorporating general learning principles thought to promote transfer into the content of training programs. Several principles were thought to be critical for the training "content" perspective. One principle that received early research attention is the principle of identical elements. This view contends that training transfer is enhanced when there are identical stimulus and response elements in the training and transfer environments (Thorndike & Woodworth, 1901). Another learning principle that was advocated is

stimulus variability, which posits that using a large number of stimuli in the training program promotes training transfer (Ellis, 1965). Trainers incorporating the concept of stimulus variability would include several examples of a concept or skill in a training program, rather than using one example repeatedly. By including several examples of a skill, proponents of stimulus variability believe that trainees are more likely to see how a skill can be used in various situations, thus increasing transfer of training. General principles is the third learning principle that has received transfer-related research attention. This view contends that teaching trainees the general principles underlying the training content or skill maximizes transfer (McGehee & Thayer, 1961). For example, a training course based on the concept of general principles that was designed to teach computer repair skills would not only teach the specific skills required to repair a computer (e.g., understanding how the different components operate), but would also include general problem-solving training in order to facilitate the problem-solving ability of the trainees. By focusing on the general principle of problem-solving, supporters of this approach contend that the trainees would be better able to diagnose computer problems, thus increasing transfer of the specific repair skills. The fourth learning principle that has been investigated involves conditions of practice issues. Research in this area has generally focused on massed versus distributed practice (e.g., Briggs & Naylor, 1962), whole versus part learning (e.g., Briggs & Waters, 1958), knowledge of results/feedback (e.g., Wexley & Thornton, 1972), and overlearning (e.g., Mandler, 1954). In general, research along these lines has achieved some interesting results that may be used to facilitate the transfer of training (see Baldwin & Ford, 1988, for a complete review).

A second line of research on transfer has focused on processes that individuals can be taught in training to improve training transfer. Whereas the training "content" research focused on increasing transfer of training by modifying the methods of instruction, the "process" approach places emphasis on instructing the trainee on how to transfer trained skills to the job. Behavioral self-management is one method that has received recent research attention (Gist et al., 1990; Gist et al., 1991; Marx, 1982; Tziner et al., 1991; Wexley & Baldwin, 1986). Self-management techniques focus on helping the trainee learn to anticipate and address obstacles that may inhibit the transfer of training skills. The instruction centers on how to identify problem situations that may inhibit transfer, generate strategies to address the situations, and implement an action plan to address the problem situations. The end result of using this technique is that transfer is increased. Research in this area has generally found positive results for its impact on transfer. For example, Frayne and Latham (1987) demonstrated that employees who had attended a job attendance training program involving self-management techniques demonstrated higher subsequent job attendance compared to employees in a control group. Further, Gist and her associates (1990; 1991) have demonstrated that self-management techniques are useful for improving training transfer. For example, in one study Gist et al. (1990) showed that trainees using self-management techniques (e.g., identifying obstacles to success; planning to overcome obstacles; self-monitoring progress) showed greater skill generalization and higher overall transfer task performance than trainees using goal-setting techniques.

Another process-oriented training transfer approach that has received attention is goal setting (Locke & Latham, 1990). Goal setting

is a process whereby trainees are encouraged to set specific goals for using and retaining their trained skills. Several studies have demonstrated that goal setting can have a positive impact on training transfer (e.g., Gist et al., 1990; Gist et al., 1991; Reber & Wallin, 1984; Wexley & Baldwin, 1986; Wexley & Nemeroff, 1975). For example, Wexley and Nemeroff (1975) found that trainees who were assigned specific goals demonstrated more transfer than a control group. Gist et al. (1990) illustrated that while trainees in a goal setting condition generalized fewer skills to the job when compared to self-management trainees, the skills that were transferred tended to be used more often. Finally, Wexley and Baldwin (1986) found that both assigned and participative goal setting, while not significantly different from one another, resulted in higher self-reported behavioral change compared to self-management training.

A third line of research on training transfer has focused on identifying the individual-difference characteristics which affect transfer of training. These characteristics include personality factors such as locus of control (Baumgartel et al., 1984; Noe & Schmitt, 1986; Tziner et al., 1991) and need for achievement (Baumgartel et al., 1984), and cognitive factors such as self-efficacy (Ford et al., 1992; Gist et al., 1991) and career planning (Fecteau et al., 1995; Martineau, 1996; Mathieu et al., 1992; Noe & Schmitt, 1986). Attitudinal variables such as job involvement (Martineau, 1996; Mathieu et al., 1992; Noe & Schmitt, 1986) and organizational commitment (Fecteau et al., 1995), as well as individual ability (Ford et al., 1992), have also received research attention. Research into individual characteristics has demonstrated mixed findings. For example, Gist et al. (1991) and Ford et al. (1992) conducted studies which showed that individuals' self-

efficacy was related to their ability to perform trained tasks on the job. Baumgartel et al. (1984) demonstrated that need for achievement and locus of control were significantly related to managers' transfer attempts. Fecteau et al. (1995) noted that managers' organizational commitment was positively related to their pre-training motivation. On the other hand, Noe and Schmitt (1986) and Mathieu et al. (1992) failed to find support for the effects of job involvement and career planning on trainee motivation and transfer. Further, Noe and Schmitt (1986) found little support for the effects of locus of control on motivation and performance. Taken together, while findings have been mixed, the research to date has identified some individual characteristics seemingly important in the training transfer process.

A final line of research has focused on identifying work environment characteristics that may facilitate or inhibit transfer of training. Aspects of the work environment that have been empirically examined include general organizational support (e.g., freedom to set goals; degree of open communication) (Baumgartel & Jeanpierre, 1972; Baumgartel et al., 1984; Hand et al., 1973), workgroup support for training (Clark, 1990; Fecteau et al., 1995; Ford et al., 1992; Huczynski & Lewis, 1980; Tziner & Falbe, 1993; Tziner et al., 1991), situational/task constraints (Fecteau et al., 1995), pace of work within the workgroup (Ford et al., 1992), and overall transfer climate (Rouiller & Goldstein, 1993; Tracey et al., 1995). By identifying those work environment characteristics which either inhibit or facilitate training transfer, practical applications can be developed that promote positive environments and remedy environments detrimental to training transfer. To date, research in this area has been positive. Fecteau et al. (1995) demonstrated that various forms of organizational support

(e.g., subordinate; peer; superior; top management) were related to managers' pre-training motivation and perceived transfer of training. Further, Tracey et al. (1995) found that overall transfer climate was related to post-training behavior for managers attending a basic supervisory skills training program. Given these promising findings, it appears that continued research examining the impact of the work environment on training transfer is warranted.

While much knowledge has been garnered through these research efforts, many issues and concerns about the training transfer process continue to exist (see Baldwin & Ford, 1988, for a review). Despite the growing importance attached to the topic of training transfer, it has received relatively less research attention than other measures of training effectiveness, such as trainee reactions and learning (Baldwin & Ford, 1988). As such, much of the transfer process remains unknown. This is somewhat surprising given the reasoning that, in most cases, any ultimate benefit that can be achieved from training depends on whether the trained skills, knowledge, or attitudes are transferred to the work context. From an organizational investment perspective, what matters most is whether the training material is used on the job to increase performance, attitudes, morale, etc. Measuring trainee reactions and learning is important, however, what matters is whether individuals transfer their training skills to their jobs. Given the current state of understanding about the training transfer process, further research in the area seems warranted.

As discussed by Baldwin and Ford (1988), a significant portion of what is known about training transfer (especially with regard to the learning principles line of research) was gathered from studies which involved training programs on simple motor or verbal skills. The extent

to which these findings generalize to more complex organizational training programs (e.g., performance appraisal training, interview training; managerial skills training) is unknown, as research evaluating these types of training programs is relatively limited (Baldwin & Ford, 1988; Gist et al., 1990). Given that these types of training programs are frequently employed by organizations, it seems important to examine transfer issues using training programs with these types of content.

Much of what is known about the training transfer process needs to be balanced with the fact that many studies examining transfer have used self-reports of behavior change as the primary measure of training transfer (Baldwin & Ford, 1988). Wexley and Baldwin's (1986) finding that goal setting training was more effective than self-management training applied only to subjects' self-reported transfer. Similarly, studies by Baumgartel and Jeanpierre (1972) and Baumgartel et al. (1984) on the influence of transfer climate used subjects' self-reported effort to apply their skills as the criterion measure. Understandably, such studies present problems regarding the true validity of the findings. While self-report measures can be useful outcome variables, it is important for researchers to also use more behaviorally-oriented outcomes to determine whether subjects' self reports are indeed reflective of their actual behavior. It is encouraging to note that some recent studies on training transfer have begun to use either observed behavior or behavioral ratings as measures of transfer (e.g., Gist et al., 1990; Gist et al., 1991; Martineau, 1996; Noe & Schmitt, 1986; Tracey et al., 1995).

Most important, however, is that despite what has been garnered about the factors which affect transfer, relatively little has been contributed to aid in the understanding of "why" training skills are or

are not learned and transferred to the job (Campbell, 1988; Tannenbaum & Yukl, 1992). Most research to date has focused simply on whether training does transfer and has neglected to investigate the reasons why transfer occurs in some settings and not in others. To address this concern, several researchers have suggested that more attention be directed at examining the motivational antecedents of training effectiveness and transfer (Campbell, 1988, 1989; Latham, 1988; Noe, 1986). By investigating the role of individuals' motivation, hopefully a better understanding of the process can be obtained. Further, by incorporating motivational perspectives into the training literature, researchers may begin to consider more theoretically-based frameworks in their investigations of training effectiveness. Ultimately, by examining motivational influences of training effectiveness, more effective techniques could be designed to help individuals and organizations deal with the motivational obstacles that influence transfer of training.

While limited research examining the impact of motivation on training transfer has been undertaken, several researchers have begun to assess the effects of trainee motivation on reactions and learning of training material. For the most part, these studies have yielded encouraging results, as several training-related motivation constructs (e.g., motivation to learn; pre-training motivation) have been found to positively influence reactions to training and learning of training content (e.g., Baldwin & Karl, 1987; Baldwin et al., 1991; Eden & Ravid, 1982; Hicks & Klimoski, 1987; Mathieu et al., 1992). While this recent line of research has added to our knowledge of the learning process, it adds little to the understanding of the training transfer process. Indeed, relatively less research has been conducted on the impact of

motivation to transfer training skills, and the few studies that have examined this issue have offered mixed results. Thus, additional research examining the impact of motivation to transfer on the subsequent training transfer seems warranted.

One purpose of the present study is to further investigate the transfer of training process by examining the impact of motivation to transfer on the subsequent transfer of training. The second purpose is to examine the role of individual and work environmental factors on both motivation to transfer and subsequent transfer of training. These factors were drawn from past research and the transfer framework provided by Baldwin and Ford (1988). The current study also incorporates theoretical propositions offered in the motivation literature (expectancy theory, Vroom, 1964; theory of planned behavior, Ajzen, 1985, 1991) into the overall measurement and theoretical framework. By doing so, the current study addresses many of the theoretical limitations of past transfer-related research discussed earlier (e.g., use of simple motor skill training; sole use of self-report measures of transfer; lack of understanding regarding motivational aspects of transfer; lack of theory-based investigations). The study achieves its purpose through two goals. First, several individual and work environmental factors are tested as antecedents of trainees' motivation to transfer. Second, trainees' motivation to transfer and three work environment variables are tested as antecedents of actual transfer of training.

The following sections present a review of the existing literature on motivation and transfer and a discussion of the motivation to transfer measure used in the present study. This is followed by a discussion of the individual and environmental variables hypothesized to

impact motivation to transfer and subsequent transfer. An overview of the study follows these sections.

Motivation to Transfer

Recently, researchers have initiated research that investigates the role that trainees' motivation plays in determining overall training effectiveness. While most studies conducted to date have investigated the direct effects of trainee motivation on reactions to training and learning of content material, motivation to transfer, defined as a "trainee's desire to use the knowledge and skills mastered in the training program on the job" (Noe & Schmitt, 1986, p. 503), has received relatively less empirical attention as a proximal antecedent of actual training transfer.

Noe and Schmitt (1986) provided one of the first tests of the motivation and transfer relationship when they tested their model of training effectiveness. They proposed that individuals' motivation to transfer would moderate the relationship between learning of the training material and behavioral change, such that behavior change would be more likely to occur for those trainees who learn the material and who are motivated to apply it to the job. They examined these relationships with 44 educators attending an administrative and interpersonal skills training program. The authors ultimately combined their motivation to transfer items with items measuring post-training motivation to learn and environmental favorability to form a post-training motivation scale. Results demonstrated that this scale did not moderate the relationship between learning and transfer and was subsequently dropped from the revised model. As such, no solid implications regarding the motivation to transfer and transfer relationship could be drawn from this study.

Facteau et al. (1995) conducted a study which examined the role of motivation in the transfer process. Unlike the current study, however, they used a measure of general pre-training motivation (an example item reads "I try to learn as much as I can from training courses"), which is conceptually and operationally distinct from motivation to transfer. Nonetheless, these authors proposed that general pre-training motivation would be related to self-reported transfer. Their model of this motivational process included several individual and work environmental antecedents of pre-training motivation and transfer. Using a sample of 967 state government managers and supervisors, they demonstrated that pre-training motivation was related to self-report transfer, and that pre-training motivation and transfer were also affected by several individual and environmental factors. Thus, although the measure of pre-training motivation used in this study differs from the motivation to transfer construct, this study does demonstrate that motivation plays an important role in the transfer process. Nonetheless, this conclusion should be tempered by the fact that, like earlier research on training transfer, this study used a self-report measure of transfer as its sole criterion.

Using a sample of 94 military instructors attending an advanced training methods course, Tziner and Fable (1993) demonstrated that instructors' gender and perceptions of work environment support were significantly related to their motivation to transfer the program development and planning skills they learned in training. However, locus of control and seniority were not related to motivation to transfer. DeMatteo, Dobbins, and Lundby (1994), using a sample of undergraduate students participating in an interview skills training program, manipulated levels of accountability (i.e., high vs. low) to

determine what effects accountability had on measures of training effectiveness. They defined accountability as the extent to which an individual is held responsible for learning and using the training material. Their results indicated that subjects in the high accountability condition did not demonstrate greater motivation to transfer compared to subjects in the low accountability condition. Unfortunately, neither Tziner and Fable (1993) or DeMatteo et al. (1994) included a measure of transfer, so conclusions regarding the relationship between motivation to transfer and subsequent transfer cannot be drawn from these two studies.

In a recent study, Martineau (1996) assessed the effectiveness of a skills training program using supervisory employees. Measures of employees' motivation and personality were gathered, as were measures of work contextual factors and training effectiveness measures (e.g., reactions; learning). In addition, several weeks after completion of the training program, employees' usage of their trained skills on the job were rated by themselves, their peers or subordinates, and their supervisors. The author found that motivation to transfer was affected by employees' pre-training motivation and reactions to the training program. Further, motivation to transfer was significantly related to ratings of employees' skill usage on the job.

Taken together, these studies provide a good starting point for research in the motivation to transfer area. However, some gaps exist in the research literature. For example, none of the studies related subjects' motivation to actual behavioral transfer of training skills. The best attempt at doing so was provided by Martineau (1996), who used ratings of skill usage as the measure of transfer. Further, while Facticeau et al. (1995) found that subjects' motivation was related to

self-reported transfer, it should be kept in mind that they employed a general measure of pre-training motivation, as opposed to a specific post-training measure of motivation to transfer. In addition, two of the studies which demonstrated the influence of individual and/or contextual factors on motivation were unable to assess the impact of motivation on actual transfer of training skills. Thus, few conclusions can be reached regarding the role of an individual's motivation in the training transfer process.

The purpose of the current study is to address the gaps that exist in the current motivation to transfer research literature. Specifically, the current study uses behavioral measures of transfer in addition to self and others' ratings of transfer. Further, the study assesses the simultaneous influence of individual and environmental factors in the transfer of training process. As noted by Baldwin and Ford (1988), relatively few studies have examined the multiple influence of individual and work environment characteristics on subjects' motivation to transfer. Finally, the current study departs from previous research on motivation to transfer in that it incorporates the expectancy theory of motivation into the theoretical framework and operationalization of the motivation to transfer measure. Several authors (Baldwin & Ford, 1988; Noe, 1986) suggested examining training-related motivation from an expectancy theory framework. The current study follows this suggestion and conceptualizes expectancy theory-based motivation to transfer in terms of whether subjects perceive that using the skills learned in training will ultimately result in better performance, and consequently will then lead to valued outcomes.

The decision to use the expectancy theory framework in the current study was based on two considerations. First, as described by Baldwin

and Ford (1988) and Noe (1986), expectancy theory is useful because it allows for the theoretical integration of both individual and contextual factors. That is, with expectancy it can be logically deducted how individual and work environmental factors would impact an individual's motivation to perform a behavior. For example, consider the work environmental variable of supervisor control and support. If an individual perceives that her supervisor does not have the ability to intrinsically or extrinsically reward her, then she will have lower expectations that valued outcomes will result from increased job performance due to using the training skills. Thus, motivation to transfer is decreased. Or if she believes that her supervisor will not provide support (e.g., time; resources), then her expectancy that attempting to use the training skills will result in increased task performance may be lower, thus diminishing her motivation to transfer. Thus, the expectancy theory framework was chosen as a foundation for the current study because both individual and work environment characteristics can be theoretically incorporated as determinants of motivation.

The second reason for using the expectancy framework as a foundation centers around findings from previous training-related research. Expectancy theory has received good empirical support when used as a measure of motivation for other areas of training effectiveness (e.g., learning). As such, it would logically seem that an expectancy theory-based measure of motivation to transfer would be an important predictor of actual transfer of training.

Expectancy Theory-Based Motivation to Transfer

The core of expectancy theory (Vroom, 1964) rests on the premise that individuals have beliefs, expectations, and values about the

objects and events around them. Based on these beliefs, values, and expectations, individuals are driven toward attaining anticipated desirable outcomes and goals. The theory posits that behavior can be predicted based on the extent to which the behavior is perceived to lead to valued outcomes. The three elements of expectancy theory are valence, instrumentality, and expectation. Valence refers to the desirability of a possible outcome. If an individual greatly desires a certain outcome, then that outcome is said to possess high valence for the individual. Conversely, if the outcome is not desired, then it possesses relatively low valence. Instrumentality refers to the perceived probability that performing at a certain level will lead to the attainment of an outcome. Thus, if an individual perceives that successful performance of a task or behavior will lead to desired outcomes, then successful performance is said to have high instrumentality. Finally, expectancy refers to an individual's belief that making an effort to demonstrate a behavior or perform at a certain level will lead to successful performance. If a person expects that making an effort will lead to successful performance of a task or behavior, then the person is said to have high expectancy. An individual's motivation is considered to be a multiplicative function of these three components expressed in the following equation:

$$\text{Motivation} = E * [\sum (V * I)];$$

where E = Expectancy, V = Valence, and I = Instrumentality. Briefly, the desirability (V) of an outcome(s) is multiplied by the instrumentality (I) of a given behavior for attaining the outcome(s).

This composite is then multiplied by an individual's expectancy (E) of performing the behavior to arrive at the overall motivation score.

There has been some preliminary research in the training area using expectancy theory-based motivation scales to predict training effectiveness. Baldwin and Karl (1987) created a motivation to learn scale based on expectancy theory and administered it to 121 students in a management course. Measures of ability (grade point average) and performance (course grade) were also obtained. The authors demonstrated that the expectancy theory-based motivation to learn scale was significantly related to performance and ability and that it accounted for variance in students' performance above that accounted for by ability. Tannenbaum et al. (1991) examined post-training motivation using a scale operationalized according to expectancy theory. In a study involving 1,037 Naval recruit training participants, these authors demonstrated that trainee reactions, performance in training, and training fulfillment (defined as the extent to which training meets a trainee's expectations) were significantly related to post-training motivation. These effects occurred after the controlling for trainees' age, gender, family history, pre-training motivation, pre-training self-efficacy, and cognitive ability.

Mathieu et al. (1992) examined the impact of individual and situational factors on an expectancy theory-based training motivation scale using 106 university employees attending a proofreading skills training program. They gathered measures of motivation, career planning, job involvement, situational constraints, and assignment method prior to subjects' attending the training program. Reactions to training, learning, and post-training performance on a work sample were measured after completion of training. The authors found that the level

of situational constraints subjects experienced in their work environment was negatively related to their training motivation, and that training motivation was significantly related to reactions to training and learning. Further, they found that subjects' motivation interacted with their reactions to predict learning, such that subjects who were motivated, yet reacted negatively to the training program, showed lower learning of the training material.

Thus, the preliminary research evidence concerning the impact of expectancy-based motivation on trainee learning is encouraging. Based on these findings, it can be logically deducted that examining motivation to transfer from the expectancy theory framework may have similar results when related to behavioral training transfer. Applied to the motivation to transfer context, expectancy theory suggests that trainees should be motivated to transfer their new skills back to the job to the degree they perceive that (1) use of their trained skills will actually result in increased performance, (2) increased performance will lead to an outcome, and (3) the outcome is desirable. It is expected that the higher one's motivation to perform a behavior, the more likely that behavior will be performed (cf., Ajzen, 1985, 1991). Thus, it is hypothesized that an expectancy theory-based measure of motivation to transfer will be related to subsequent behavioral transfer.

Hypothesis 1: Subjects' motivation to transfer training (VIE) will be positively related to their transfer of training skills.

As described earlier, there are two overall objectives to the current study. First, the study investigates the impact of several individual and work environment factors on trainees' motivation to

transfer. Second, the study assesses the impact of trainees' motivation to transfer and several work environment variables on actual transfer of skills. A framework of the factors and relationships examined in this research are depicted in Figure 2.1. It is important to recognize that unlike previous research, the relationships of interest are those that occur following the completion of the training program and learning of the training content. As such, the impact of individual and environmental factors on learning, which has garnered much empirical attention by other researchers (Baldwin & Karl, 1987; Mathieu et al., 1992; Tannenbaum et al., 1991), will not be examined in the present study.

It was deemed important, however, to include a measure of subjects' training knowledge in the model to control for the effects of "learning" on motivation to transfer and subsequent transfer of training. This helps to avoid the fallacious assumption that all trainees will learn the training material to a similar degree. It also allows for a clearer examination of the relationships between the variables of central interest to the study, over and above the impact of subjects' knowledge of the training material. The logic for controlling for learning becomes more clear when one considers the commonly held belief that an individual's performance is due to both motivation and ability (Porter & Lawler, 1968). While one goal of the present study is to investigate the effect of motivation to transfer on transfer of training, it is recognized that ability can also play an important role in determining performance and motivation to perform. Because of this, a measure of subjects' training knowledge is treated as a surrogate measure of subjects' "general ability" to perform the training skills. This measure is used to control for variance associated with knowledge

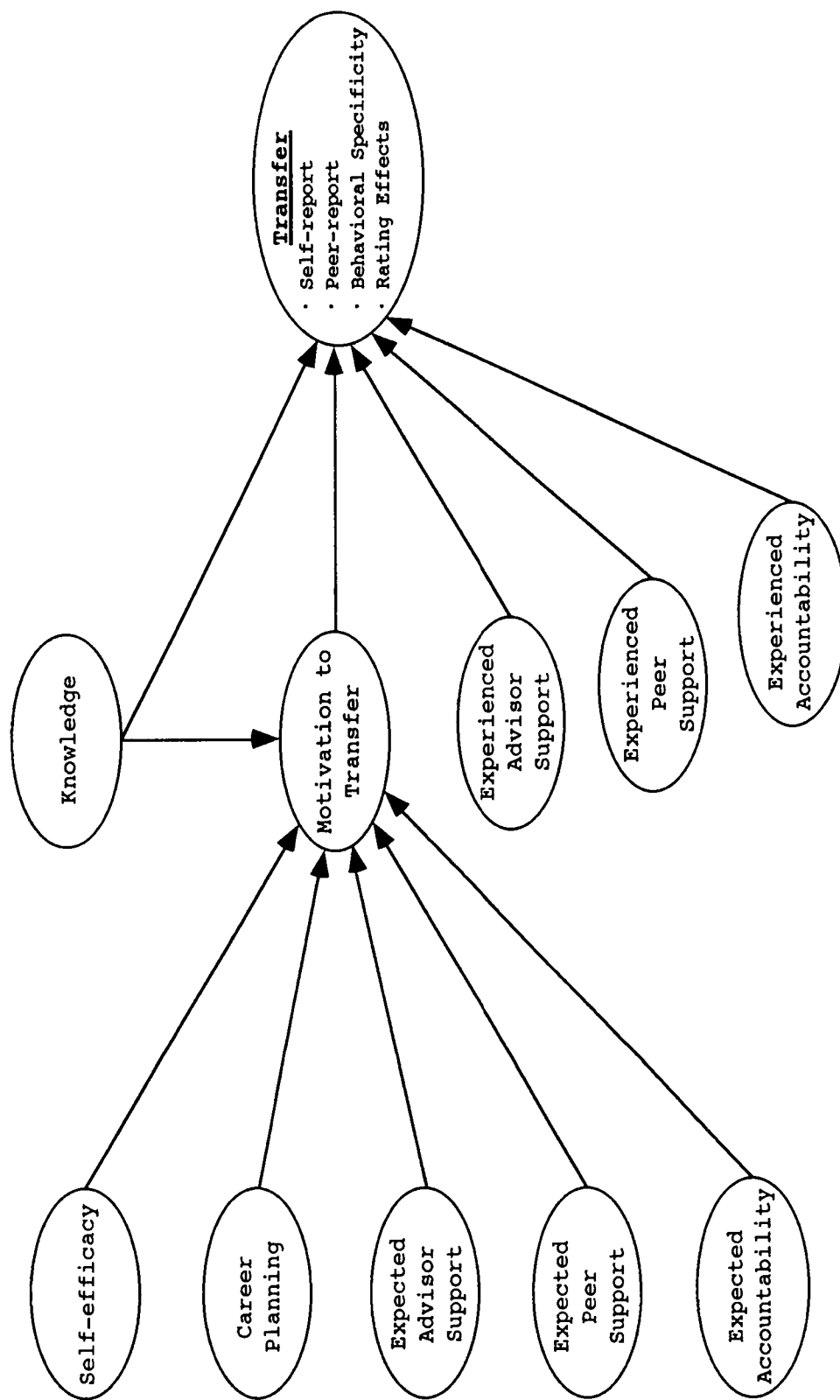


Figure 2.1. Hypothesized study framework.

Note. All hypothesized relationships are positive. Relationships from knowledge to motivation to transfer and transfer are included to control for variance associated with these variables.

in the two "dependent" variables of interest (i.e., motivation to transfer; transfer of training). Because subjects must learn the material before they are able to transfer the skills (i.e., one cannot transfer what one does not know), a direct relationship from trainees' knowledge to behavioral transfer is included in the framework. In addition, a path from knowledge to motivation is included in order to control for any variance in motivation to transfer associated with subjects' learning and knowledge of the training material.

Individual Factors Affecting Motivation to Transfer

The present study investigates the relationships between two individual factors, career planning and self-efficacy, and motivation to transfer. The rationale for these relationships is presented below.

Career Planning

Noe (1986) suggested that the extent to which individuals participate in career planning activities may influence training-related motivation. He reasoned that individuals who have a plan for their career and strategies for achieving their career goals should see the benefit of developing and using skills that could be instrumental for helping them progress toward their career objectives. However, research conducted to date has failed to provide much support for this proposition (Fecteau et al., 1995; Mathieu et al., 1992; Noe & Schmitt, 1986). For example, Noe and Schmitt found positive, nonsignificant relationships between career planning and individuals' pre-training motivation and subsequent use of training skills once back on the job. Similarly, Mathieu et al. failed to show that career planning was related to individuals' training motivation in a proofreading skills course.

Other research, however, has demonstrated that career planning is related to advancement and the likelihood of engaging in developmental activities (Gould, 1979; Super & Hall, 1978). Similar to Noe's (1986) notion, if a training program is seen as providing material or outcomes that will help one advance or develop skills to aid career advancement, then individuals who frequently engage in career planning activities should view those outcomes as more desirable. Hence, their motivation to transfer should increase. Conversely, those subjects who do not have high levels of career planning may not be able to perceive the career-oriented utility of using their training skills, and thus may be unmotivated to transfer their skills. Even if low career planning individuals do feel that using the skills could result in outcomes that have utility for their career, because they show little planning for their career (i.e., few objectives; few clear goals), they may be uninterested in obtaining those outcomes; thus, they may be unmotivated to use their skills. No studies to date have examined this potential relationship between career planning and motivation to transfer.

In the current study, subjects will be learning skills which may make them more marketable when they enter the workforce, and should aid them in improving the performance of their team (which will reflect on their individual performance). Further, some of the outcomes that may be obtained from increased task performance due to use of their skills should be useful for improving their career-related progress (e.g., improving strengths and work-related skills; improving future job prospects and opportunities; being given better or more challenging projects). Therefore, it is expected that individuals who show greater career planning will show higher motivation to transfer their training skills. This relationship is investigated in the current study.

Hypothesis 2: Subjects' level of career planning will be positively related to their motivation to transfer training.

Self-efficacy

The second individual characteristic postulated to be related to motivation to transfer training is self-efficacy. Self-efficacy refers to an individual's belief in his or her ability to successfully complete a task (Bandura, 1977, 1982; Gist, 1987). Previous research has demonstrated that self-efficacy is related to individuals' performance in training (Gist, Schwoerer, & Rosen, 1989; Gist et al., 1991; Mathieu, Martineau, & Tannenbaum, 1993; Tannenbaum et al., 1991). For example, Gist et al. (1991) found that subjects' self efficacy was related to performance on a salary negotiation task immediately following training and 7 weeks following training. Further, Ford et al. (1992) demonstrated that self-efficacy was positively related to one's opportunity to use trained tasks on the job. Moreover, Frayne and Latham (1987) and Latham and Frayne (1989) demonstrated that self-efficacy was related to job attendance several months after completion of job attendance training. Taken together, these studies demonstrate that self-efficacy is related to training performance and training transfer.

The concept of self-efficacy is very similar to Ajzen's (1991) notion of perceived behavioral control in his theory of planned behavior. Ajzen suggests that when individuals perceive that they have greater control over performing a behavior, they should have more intentions to perform that behavior. Applied to the current study, this suggests that individuals who have high confidence in their ability to perform a task (i.e., high self-efficacy) should have high intentions to

perform that task. The higher one's self-efficacy, the greater his or her motivation to transfer. Noe (1986) also suggested a similar relationship when he stated that self-efficacy should be related to an individual's training-related motivation. In the current study, it is hypothesized that an individual who is more confident in his or her ability to perform a set of trained skills will likely be more motivated to transfer them to the work setting. Conversely, perceptions that one will not be able to perform a set of trained skills should lead to lower motivation to transfer those skills. Interestingly, none of the studies just reviewed examined this relationship. The current study investigates this possible relationship.

Hypothesis 3: Self-efficacy for using training skills will be positively associated with subjects' motivation to transfer training.

Environmental Factors Affecting Motivation to Transfer and Transfer

Noe (1986) suggested that the work environment can affect motivation to transfer and subsequent transfer of skills. The present study investigates the effects of three environmental factors: supervisor support, peer support, and perceived accountability. However, as outlined in the introduction, the current study departs from most previous research in that it distinguishes between "expected" environmental factors and "experienced" environmental factors (cf., Clark, 1990). This is based on the notion that the level of peer support, supervisor support, and accountability individuals expect to receive (measured immediately following training) may be different from the level they actually received during the post-training period. Further, the expected and experienced levels of environmental factors may affect the training transfer process at different points of the

process. Martineau (1996) came to a similar conclusion when she measured situational constraints to using trained skills at multiple times of the training effectiveness process.

Supervisor or Advisor Support¹

Supervisor support for training, demonstrated by actions such as permitting employees to attend training programs, talking with employees prior to attending training, allowing opportunities to use trained skills, and providing encouragement, should theoretically be related to training effectiveness. Indeed, there have been a few studies which have examined the relationship between supervisor support and training transfer. For example, Huczynski and Lewis (1980) found that actual supervisor support (e.g., pre-training discussions) resulted in greater transfer attempts by trainees. Moreover, Ford et al. (1992) demonstrated that a composite variable assessing both workgroup and supervisor support predicted the types of tasks trainees were asked to perform following training. Clark (1990) demonstrated that supervisor support (labeled in her study as "supervisor transfer climate") predicted perceived job utility of training and levels of workgroup support. Finally, Fecteau et al. (1995) discovered that supervisor support was positively related to general pre-training motivation and self-reported transfer. Thus, there is some evidence to suggest that supervisory support does play an important role in the training transfer process.

¹ Due to the context of the study sample (i.e., academic setting), the present research will be using a variable named "advisor support" as a surrogate measure for supervisor support. It is believed that the meaning of this construct is extremely similar to that of the supervisor support construct used in previous research (e.g., Fecteau et al., 1995). Further, in the current sample, subjects' advisors performed behaviors similar to those that an organizational supervisor would perform (e.g., provide career assistance; provide work assistance; provide performance feedback). Therefore, it was deemed appropriate to use the literature on supervisor support as a basis for creating the current study's hypotheses. Throughout the remainder of the manuscript, this variable will be referred to as "advisor support."

Additional research is needed on the impact of supervisor support on motivation to transfer and subsequent transfer of training skills. Relatively little research has examined the independent effects of supervisor support on training transfer, and no studies have examined the relationship between supervisor support and motivation to transfer. It is easy to understand, however, how expectations of supervisor support can affect motivation to transfer. If an individual expects his or her supervisor to support efforts to apply the new skills, then the individual may perceive greater opportunity for using the skills. Further, since supervisors can often distribute valued rewards for using trained skills (e.g., more positive feedback; recognition), the amount of supervisor support individuals expect to receive may increase their motivation to transfer. Thus, it is hypothesized that the level of supervisor support individuals expect to receive will be positively associated with their motivation to transfer. Similarly, it is hypothesized that the amount of supervisory support actually experienced will affect the actual transfer of those training skills. If, in fact, supervisors provide little opportunity to use the trained skills, or fail to reward (intrinsically or extrinsically) individuals for attempting to use their skills, then the application of those skills to the job may be less likely to occur.

Hypothesis 4: Expected supervisor or advisor support for transferring training will be positively related to motivation to transfer.

Hypothesis 5: The supervisor or advisor support that subjects experience will be positively related to their actual transfer of training skills.

Peer Support

Similar to the relationships outlined above, it is posited that the amount of training transfer-related support individuals expect to receive from their peers should positively affect their motivation to transfer, whereas actual levels of support received will impact subsequent transfer of training. Only a handful of studies have investigated similar relationships. Clark (1990) investigated the effects of workgroup support in the training effectiveness process, but found no significant results. Fecteau et al. (1995) found that peer support was related to perceived levels of transfer, but not to individuals' pre-training motivation. Moreover, Huczynski and Lewis (1980) discovered that peer support was relatively less important than supervisory support in facilitating training transfer attempts. Finally, Ford et al. (1992) demonstrated that a composite variable assessing both workgroup and supervisor support predicted the types of tasks trainees were asked to perform following training. Thus, based on the research to date, few, if any, conclusions can be drawn regarding the independent effects of peer support in the training transfer process.

Despite the relative lack of research in this area, it is important to assess the effects of peer support on training transfer. In many organizations, especially those involving highly participative work teams, an individual is in contact with his or her peers much more than with his or her supervisor. Thus, there are greater opportunities for peers to provide encouragement or demonstrate support for using trained skills. In organizations where peer-based work teams are in control of their own work planning and compensation systems, the opportunities for one's peers to have a positive impact on training

transfer is even greater. For example, one's peers could adjust the work roles to provide the trainee with opportunities to use his or her new skills. Further, peer team members may also alter the compensation system in order to reward the trainee for using his or her training skills. In the current study, it is hypothesized that to the extent an individual expects his or her peers to support efforts to apply training material (e.g., provide encouragement; reinforce efforts; provide outcomes), then the individual will be more motivated to transfer the training skills. Subsequently, if one's peers do not actually provide encouragement, do not believe that the training is important, or do not reinforce one's efforts to transfer the skills, then relatively little transfer may occur. Therefore, the current study also hypothesizes that the level of peer support actually received will impact subsequent transfer of training.

Hypothesis 6: Subjects' level of expected peer support for transferring training will be positively related to their motivation to transfer.

Hypothesis 7: Subjects' experienced peer support will be positively related to their actual transfer of training skills.

Accountability

Accountability is defined as the extent that one is held responsible for one's actions. Research in social and cognitive psychology has demonstrated that holding an individual accountable for his or her decision-making leads to more accurate information processing (e.g., Tetlock, 1983; 1985). Research in the performance appraisal literature has showed that when individuals are placed in conditions where they are held accountable for their actions (e.g., requiring

individuals to provide face-to-face feedback), individuals typically provide inflated performance ratings (e.g., Benedict & Levine, 1988; Fecteau, 1995; Fisher, 1979; Klimoski & Inks, 1990). Thus, research from different arenas has demonstrated that placing perceptions or conditions of accountability on individuals can affect their subsequent behavior. One reason for why this effect occurs was put forth by Klimoski and Inks (1990). Briefly, these authors suggested that when individuals are placed under conditions of accountability, they conform their behavior to meet the perceived or real expectations or wishes of others. Thus, when an individual who is required to provide face-to-face feedback perceives that the ratee will expect or desire to hear positive feedback, the individual conforms his or her behavior to meet those expectations by providing inflated feedback. This notion is very similar to Ajzen's (1985, 1991) concept of subjective norm. Briefly, this author suggests that when individuals perceive that there is pressure to perform a behavior, they should show greater intention or motivation to perform the behavior. It seems logical that being held accountable, or perceiving as being held accountable, would induce perceptions of pressure to perform a behavior.

In the training area, relatively little research has integrated this construct into examinations of training effectiveness. In a lab study involving interview skills training, DeMatteo et al. (1994) manipulated conditions of accountability and demonstrated that subjects in high accountability conditions showed more learning and note-taking during the training program. On the other hand, accountability failed to significantly impact subjects' motivation to transfer. Actual transfer of training skills was not measured in this study. Despite the latter finding in this study, it is easily understandable how

accountability would exert an influence on motivation to transfer and subsequent transfer of training. When individuals perceive that they will be held accountable for transferring their training skills, they should show higher motivation to transfer because they may feel pressure to perform these behaviors and/or may desire to conform their behavior to meet the expectations of others (i.e., to transfer the training). Similarly, after completing training and returning to the work environment, individuals who experience greater levels of accountability will likely show more transfer. The current study investigates these relationships by examining the effects of accountability on motivation to transfer and subsequent transfer.

Hypothesis 8: Greater expected accountability for using training skills will be associated with higher levels of motivation to transfer.

Hypothesis 9: Greater levels of experienced accountability for using training skills will be associated with higher levels of training transfer.

Overview of Study

In summary, the purpose of the present study is to investigate the influence of several individual and work environment variables on motivation to transfer and subsequent transfer of training. Further, the study examines the relationship between motivation to transfer and transfer of training. A framework which depicts the relationships of interest is present in Figure 2.1. Specific hypotheses that are assessed in the current study are listed below.

Hypothesis 1: Subjects' motivation to transfer training will be positively related to their actual transfer of training skills.

- Hypothesis 2: Subjects' level of career planning will be positively related to their motivation to transfer training.
- Hypothesis 3: Self-efficacy for using training skills will be positively associated with subjects' motivation to transfer training.
- Hypothesis 4: Expected advisor support for transferring training will be positively related to motivation to transfer.
- Hypothesis 5: The advisor support that subjects experience will be positively related to their actual transfer of training skills.
- Hypothesis 6: Subjects' level of expected peer support for transferring training will be positively related to their motivation to transfer.
- Hypothesis 7: Subjects' experienced peer support will be positively related to their actual transfer of training skills.
- Hypothesis 8: Greater expected accountability for using training skills will be associated with higher levels of motivation to transfer.
- Hypothesis 9: Greater levels of experienced accountability for using training skills will be associated with higher levels of training transfer.

The present study should have theoretical and applied implications. From a theoretical perspective, the study addresses several limitations that have been identified in previous transfer research. First, the study provides further investigation into the training transfer process, which has been criticized as not having received adequate research attention. Second, the current research should contribute to the training literature that is beginning to study training-related motivation constructs as a vehicle for understanding overall training effectiveness. Third, by examining a theoretically-based measure of motivation to transfer, the study adds to the growing body of literature that is addressing the concerns raised by researchers

that the literature on training effectiveness and transfer lacks a theoretical basis (Baldwin & Ford, 1988; Campbell, 1971). The current study also utilizes a complex training program (i.e., performance appraisal rater training) that is similar to the types of programs used in actual organizations. Further, in contrast to many previous studies using only self-report measures of transfer, the current study utilizes both self-report and behavioral indicators of training transfer. Finally, the current study examines antecedents of motivation that have been investigated in other training effectiveness areas (e.g., motivation to learn) to assess their relationship to motivation to transfer and subsequent transfer of training.

From an applied perspective, the results of the study may provide organizations with a tool for assessing which individuals are likely or are not likely to transfer their skills back to the workplace. By identifying those individuals who are not likely or motivated to transfer their skills, organizations can intervene and provide these individuals with techniques to help them transfer, thus saving the organization money on its training investment. Further, the use of the expectancy theory-based measure of motivation may offer some prescriptive utility in determining what interventions may best be used to increase transfer of training. For example, if subjects' low motivation to transfer is due primarily to low expectations that the training skills will result in improved performance, then the training instruction could be modified to include examples to help clarify the relationship between the training skills and subsequent work performance. Finally, this study may demonstrate that work environment factors play an important role in the transfer process, thus offering organizations some potential direction for addressing the work

environments that individuals experience once they return from training to the job. Given the large amounts of money spent on training and the estimated loss on investment (Georgenson, 1982), this research appears to be critically important.

CHAPTER III

METHOD

Subjects

Subjects for the current study were 136 first-year Master of Business Administration (MBA) graduate students at a large southeastern university. Of those responding, 74.1% were male ($N = 100$), 86.7% were white ($N = 117$), 3.0% were black ($N = 4$) and 10.4% ($N = 14$) were from other racial groups. Subjects' average age was 27.34 years ($SD = 4.93$). Subjects' number of majors ranged from 0 to 4, with 90% of the subjects indicating one or two areas of concentration. These included Marketing, Finance, Logistics and Transportation, Management, New Venture, Human Resources, Organizational Behavior, Management Science, and International Business. Subjects had an average of 4.32 years ($SD = 3.52$) of part-time job experience and 4.48 years ($SD = 4.66$) of full-time job experience. Fifty-eight (43.0%) individuals noted that they possessed managerial experience, with the average tenure of those individuals being 4.10 years ($SD = 3.97$). Sixty-three (46.7%) of the subjects indicated that they had rated someone's performance in a work setting, with the average length of experience being 3.62 years ($SD = 3.88$).

Although the use of a student sample calls into question the external validity of the study, this particular sample may offer more generalizability than typical student samples in that it possesses several characteristics similar to those found in many organizations. First, as noted above, most of the subjects had some full-time work experience, and over 40% of the subjects had either managerial

experience or experience making performance ratings. Second, the business graduate school which these MBA students attended employed a very experiential, innovative instructional program which centered around highly-involved work teams. Specifically, at the beginning of the semester students were separated into teams of four to six individuals, and throughout the year these teams completed numerous graded projects which required enormous amounts of time and effort spent in team settings (approximately 60% of their academic work was done in their team). Third, the types of projects these teams completed (e.g., marketing analyses; requests for bank loans; production proposals; report presentations) are similar to projects often worked on in actual organizations. In fact, team projects were presented to and graded by actual organizational executives. Fourth, the design used in the current study (described below) was "real" in the sense that subjects attended a training program and were presented with the opportunity to use their skills in a natural work setting (as opposed to an artificial laboratory setting). Taken together, it is believed that these characteristics of the study sample may make the results more generalizable than studies which employ typical undergraduate student populations.

Procedure

As outlined in the introduction, data for the current study was drawn from the administration and evaluation of a performance appraisal rater training program. This training program, which is described below, was part of a peer performance appraisal system for the MBA students. As part of their instructional program, MBA students participated in a peer performance appraisal system whereby each student provided individual performance feedback to each of his or her team

members at the midpoint of the first semester. Each student was typically required to provide feedback for three to five team members. Written feedback was gathered via a performance appraisal rating form, which is described below. Aggregated performance appraisal information was presented to each target student via a feedback report constructed by the program administrator. It was stressed that this feedback was to be used for developmental purposes only.

Data Collection Process. Data for the current study was collected over a two-year time period with two separate first-year MBA classes. A diagram which outlines the overall data collection process is presented in Figure 3.1. As pictured, data for the study was collected over four separate time intervals. Immediately preceding the start of the training program, subjects were asked to complete a Pre-Training Questionnaire which gathered demographic information and the career planning measure. Immediately following the completion of the training program, subjects were administered the Training Evaluation which assessed their knowledge of the training material. After completing this instrument, subjects were asked to complete the Post-Training Questionnaire, which contained measures of self-efficacy, expected advisor support, expected peer support, expected accountability, and motivation to transfer. Subjects made performance ratings of their team members approximately 4 to 5 weeks following the training program via a Performance Appraisal Rating Form. As discussed later, two of the study's transfer measures were gathered on the performance appraisal rating form. At the same time, subjects completed the Follow-up Questionnaire, which contained measures of experienced advisor support, experienced peer support, experienced accountability, and self-report

	PHASE ONE	PHASE TWO	PHASE THREE	PHASE FOUR
Time Interval	Immediately Preceding Training	Immediately Following Training	Four to Five Weeks After Training	Five to Six Weeks After Training
Instrument	Pre-Training Survey	Training Evaluation & Post-Training Survey	Performance Ratings & Follow-up Survey	Peer Survey
Variables Gathered	• Career Planning • Demographic Information	• Knowledge • Self-efficacy • Expected Advisor Support • Expected Peer Support • Expected Accountability • Motivation to Transfer	• Performance Ratings (Transfer) • Open-ended Comments (Transfer) • Experienced Advisor Support • Experienced Peer Support • Experienced Accountability • Self-Report Use of Skills (Transfer)	• Peer-Report Use of Skills (Transfer)

Figure 3.1. Diagram of the data collection process.

transfer. These two forms were distributed to subjects via their on-campus mailboxes and, after completion, were returned to the primary researcher in pre-labeled manila envelopes. Approximately 1 week following making their performance ratings, subjects completed the Peer Training Questionnaire, which gathered peer-report transfer.

Data was matched across the time intervals by pairing unique codes with subjects' social security numbers. Specifically, subjects' social security numbers were gathered on the Pre-Training Questionnaire, Training Evaluation, and Post-Training Questionnaire. After these instruments were collected, each subject was issued a unique three-digit code for the sole purpose of matching each subject's subsequent responses without having to use social security numbers. Each subject's three-digit code was known only to the primary researcher. At all stages of the data collection process subjects were informed that their information would be kept confidential and that no individual would be identified. All data was collected and coded by the primary researcher.

At the outset of the training program, subjects were informed that the purpose for the data collection was to evaluate the effectiveness of the rater training program. At the conclusion of the data collection process, subjects gave their informed consent to release the data to the primary researcher. A total of 158 individuals completed the training program, whereas 136 individuals provided their permission to use the data for evaluation purposes.

Materials

Performance Appraisal Rating Form. As part of the peer performance appraisal system, subjects made performance evaluations of their team members via a performance appraisal rating form. Similar to

the development of a Behaviorally Anchored Rating Scale (cf., Bernardin & Beatty, 1984), subject matter experts were involved in the development of the performance rating form (i.e., MBA students developed the form the previous year). Subjects were instructed to complete one rating form for each team member. Team members' performance was assessed along six skill dimensions, including Effort and Participation, Leading Task Accomplishments, Teamwork, Interpersonal Sensitivity; Intellectual Contribution, and Judgment/Decision Making. Each skill dimension was measured with multiple items. Ratings were made on a 5-point Likert-type rating format (1 = "Not at all Effective" to 5 = "Extremely Effective"). An additional page was included on the rating form for subjects to make open-ended comments regarding each team member's strengths and developmental needs, and any additional comments. A copy of the performance appraisal rating form is included in Appendix A.

Rater Training Program. The rater training program that subjects attended was designed to enhance their ability to provide specific, behavioral, and accurate performance ratings and verbal feedback to their team members. As these skills may apply not only to subjects' current academic curriculum, but also to their future employment responsibilities (e.g., providing performance ratings as part of their managerial duties), it was felt that this training program would be of great benefit for the study subjects.

The training program consisted of an eclectic combination of several different types of rater training programs used in previous research. For example, the rater training program employed elements common to Rater Error Training (cf., Bernardin, 1978; Bernardin & Beatty, 1984; Borman, 1975), Observation Training and Diary-Keeping (cf., Bernardin & Beatty, 1984; Bernardin & Buckley, 1981), Frame of

Reference Training (cf., Bernardin & Buckley, 1981; Borman, 1979), and Performance Dimension Training (cf., Bernardin & Beatty, 1984). Past research has demonstrated that these techniques are generally effective at meeting their stated objectives (see Bernardin & Beatty, 1984, and Smith, 1986, for reviews). Further, Smith (1986) concluded that training programs which employ active instructional techniques (e.g., participation, feedback) are beneficial for improving rater accuracy. Therefore, in addition to passive techniques such as lecture and overhead presentation, the current rater training program employed active techniques such as group discussion, written exercises, and a videotaped role-play. The rater training program was separated into six modules conducted at one 4.5 hour setting. Included in the 4.5 hour time frame was time for two short breaks (approximately 10 minutes each) and a brief introduction to the training and peer appraisal system.

Rater Training Modules. Module one focused on teaching subjects how to distinguish between behaviors and inferences, with the implication being that performance ratings should be based on observed behaviors, not on inferences. First, subjects were provided with a short discussion on the differences between behaviors and inferences and the rationale for why they should base their performance ratings on specific incidents of behavior rather than general impressions or conclusions they have about someone. Subjects then completed a short written exercise which required that they read several examples of performance feedback and determine whether each example was based on behaviors or inferences. Group discussion of correct and incorrect responses followed their completion of this exercise. It was emphasized throughout the module that performance ratings should be based on behaviors rather than inferences, and that open-ended performance

feedback (i.e., open-ended comments on the rating form) should include behavioral examples of performance. Total time required for module one was approximately 35 minutes.

Module two focused on methods and techniques subjects should use to accurately observe and document behavioral performance in a non-evaluative manner (i.e., Observation Training and Diary-Keeping). The module began by describing techniques for effectively observing performance (e.g., document verbatim comments as opposed to conclusive statements; document the context surrounding behaviors; document consistently and over several occasions throughout the rating period). Subjects then practiced documenting performance by viewing a videotaped role-play between two individuals and documenting the behavior demonstrated by one of the role players. After several minutes, the videotape was paused and a group discussion of subjects' documented behaviors ensued. Specifically, several subjects were asked to read aloud the comments they had documented, and the group discussed each of the comments with respect to the techniques provided at the outset of the module. This process (i.e., documenting videotaped performance and discussing comments) was then repeated in order to reinforce learning. To encourage transfer of the observation and documentation skills, subjects were provided with a legal notepad and were encouraged to use the notepad as a "performance diary". Subjects were also encouraged to set goals regarding the numbers of behaviors they would document for each team member during a team meeting or interaction (cf., Bernardin & Beatty, 1984). Finally, subjects were again encouraged to use the open-ended section of the performance appraisal rating form to provide examples of their documented behaviors. Module two required approximately 40 minutes to complete.

Module three introduced students to the performance dimensions they would be using to make performance ratings (i.e., Performance Dimension Training) and provide verbal feedback. Performance dimensions were thoroughly discussed in terms of the individual items comprising each dimension and the conceptual differences between the dimensions. It was at this point that subjects were introduced to the importance of distinguishing between performance dimensions when making performance ratings. Following this discussion, subjects completed a group exercise which required that they read several behavioral examples of performance and accurately classify the examples into their appropriate performance dimension. A group discussion of correct and incorrect responses concluded this module. Subjects were reminded that previous MBA students (subject matter experts) had been involved in creating the performance dimensions used on the performance appraisal form. Total time required for this module was approximately 40 minutes.

Module four was separated into two parts. In the first part, a modified rater error training format was employed. Specifically, definitions and examples of several rating errors and effects (e.g., halo; leniency; severity; central tendency; primacy and recency effects; similarity bias; contrast error) were presented, along with a discussion of their motivational influences. Techniques for avoiding these errors were also presented. A group exercise followed in which subjects were required to examine different sets of performance ratings and determine which rater error or effect was represented by the performance ratings. In the second part of module four, subjects were presented with a brief discussion of situational influences on performance (cf., Dobbins, Cardy, & Carson, 1991). Examples of these influences (e.g., computer hard drive crash) and how they can affect performance ratings were also

presented. Time required to complete module four was approximately 45 minutes.

Module five provided subjects' with brief instruction on the importance of verbal feedback. It was emphasized that subjects should not wait until the formal rating period to provide feedback. Rather, they were instructed that they would be expected to provide verbal feedback to their team members regularly throughout the semester. Further, it was stressed that the same skills subjects use to make performance ratings (e.g., providing behavioral examples of performance; avoiding inferential conclusions) should also be used to provide verbal feedback to their team members. Finally, subjects were presented with several specific techniques that should be used when providing verbal feedback (e.g., maintaining eye contact with feedback recipient; listening to recipient's comments). Module five required approximately 30 minutes to complete.

Module six employed modified frame-of-reference training (cf., Bernardin & Buckley, 1981; Borman, 1979) to provide subjects with consistent performance standards for making performance evaluations. At the outset of the module, subjects were presented with the rating scale that would be used to rate their team members' performance. Subjects then reviewed example descriptions of the performance dimensions for the low, mid, and high points of the rating scale. After discussion of the rating scale and example descriptions, subjects practiced making performance ratings. Specifically, subjects read a written behavioral vignette which was designed to simulate a typical rater's performance diary. Several behavioral examples of performance for a target individual were included in the behavioral vignette. Subjects were then presented with several performance dimensions and asked to rate the

target individual's performance on the performance dimensions' items. Subjects' ratings were discussed and compared with pre-scripted levels of performance for each of the performance dimensions.² In two training sessions this exercise was concluded with extra time remaining for the session, and on both occasions, subjects received additional rating practice by rating either the videotaped role-play described earlier or an extra written behavioral vignette. Total time required for module six was approximately 60 minutes.

The primary researcher served as the trainer for each of the training sessions. A total of six sessions were required to training the study subjects, with 25-30 subjects attending each session. The length of each training session was approximately 4.5 hours.

Measures

In order to test the proposed relationships for the study, measures of fourteen constructs were gathered throughout the data collection process. Some of the measures were adapted from scales used in previous research, whereas others were developed specifically for this study.

Career Planning. The extent to which subjects participate in career planning activities was measured with a slightly-modified version of Gould's (1979) six-item career planning scale. Gould (1979) reported internal consistency estimates ranging from .70 to .80. Subsequent research employing this scale has also demonstrated acceptable reliabilities (e.g., Mathieu et al., 1992; Noe & Schmitt, 1986). The modifications to this scale involved changing the phrasing of three

²The behavioral vignette was constructed by the primary researcher based on scripted levels of performance. Prior to conducting the training, the behavioral vignette was reviewed by an advanced Industrial and Organizational Psychology graduate student with several years experience in performance appraisal to ensure that the behavioral vignette accurately conveyed the levels of performance on which it was designed.

negatively-worded items to reflect a positive wording. Ratings were made on a 5-point scale (1 = "Strongly Disagree" to 5 = "Strongly Agree"), with a higher score indicating more participation in career planning. The items comprising this scale can be seen in Figure 3.2.

Self-efficacy. To measure self-efficacy for providing performance feedback, an 11-item scale was presented to subjects. The items are presented in Figure 3.3. Items were created specifically for this study based on the content of the training program. Specifically, each item represents a separate behavior that a rater would have to engage in when providing written or verbal feedback. Using a slightly-revised format employed in previous research (Facteau, 1995), subjects were asked to rate their confidence in their ability to perform each behavior using a 10-point scale (1 = "No Confidence" to 10 = "Total Confidence"). Scores for this measure were calculated by averaging across all of the items. A higher score is indicative of greater self-efficacy for providing performance feedback.

Expected Advisor Support. Five items were included to measure the extent to which subjects' expected their faculty advisors to support their efforts to transfer their rater training skills. These items, presented in Figure 3.4, were adapted from Facteau et al.'s (1995) supervisor support scale. Revisions to the original items included: (1) changing the target wording from "supervisor" to "faculty advisor" in order to apply to the current sample of MBA students; and (2) rephrasing the wording to reflect a future verb tense. Subjects were asked to indicate on a 5-point scale the extent to which they agreed or disagreed with each item (1 = "Strongly Disagree" to 5 = "Strongly Agree"). Higher scores on the scale indicate greater expected advisor support.

Items

1. I have decided on my career objectives.
 2. I know what I need to do to reach my career goals.
 3. I have a strategy for achieving my career goals.
 4. I have a plan for my career.
 5. My career objectives are clear.
 6. I seldom change my career objectives.
-

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Modified From:

Gould, S. (1979). Characteristics of career planners in upwardly mobile occupations. Academy of Management Journal, 22, 539-550.

Figure 3.2. Items measuring career planning.

Directions. Rate the confidence you have in your ability to perform each of the following behaviors using the following scale:

1	2	3	4	5	6	7	8	9	10
No									Total
Confidence									Confidence

1. Make honest, accurate ratings of your team members' performance.
 2. Provide specific, behavioral incidents of performance on team members' performance rating form.
 3. Distinguish between different performance dimensions when making performance ratings.
 4. Distinguish between behaviors and inferences when making performance ratings.
 5. Base your performance ratings on observed incidents of performance.
 6. Recognize when situational influences may be impacting your team members' performance.
 7. Provide your team members with immediate verbal feedback.
 8. Present your team members with verbal feedback that is free from your personal judgments.
 9. Cite specific, behavioral incidents of performance when providing your team members with informal feedback.
 10. Distinguish between behaviors and inferences when giving verbal feedback to your team members.
 11. Present your team members with verbal feedback that will help them improve their performance.
-

Figure 3.3. Items measuring self-efficacy.

Items

1. My faculty advisor believes that this training is important.
 2. My faculty advisor will allow me to practice what I've learned in training.
 3. My faculty advisor will help me when I ask for advice about how to use the skills I learned in training.
 4. My faculty advisor will offer me opportunities to use the new skills I learned in training.
 5. My faculty advisor will give me helpful feedback when I try out new skills or behaviors learned in training.
-

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Modified From:

Facteau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. D. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. Journal of Management, 21, 1-25.

Figure 3.4. Items measuring expected advisor support.

Experienced Advisor Support. The amount of advisor support actually experienced by subjects was measured with slightly revised items from the expected advisor support scale. The sole revision to the items involved rewording to reflect a past verb tense so that the items would assess the extent to which advisor support was demonstrated during the time period following training. As reflected in Figure 3.1, subjects completed this measure 4 to 5 weeks after completion of the training program. Responses to these items were made on the same scale as was used for the expected advisor support scale (1 = "Strongly Disagree" to 5 = "Strongly Agree"). Higher scores indicate greater experienced advisor support. Items measuring this scale are presented in Figure 3.5.

Expected Peer Support. The extent to which subjects' perceived their team members would support their efforts to transfer trained skills was assessed with four items adapted from Facticeau et al.'s (1995) peer support scale. These items are presented in Figure 3.6. Revisions to the original items involved: (1) minor wording changes to make the items more applicable to the current sample (e.g., referring to "team members" rather than "peers"); and (2) rephrasing the wording to reflect a future verb tense. Subjects were asked to indicate on a 5-point scale the extent to which they agreed or disagreed with each item (1 = "Strongly Disagree" to 5 = "Strongly Agree"). Higher scores on the scale indicate greater expected peer support.

Experienced Peer Support. This variable was assessed by repeating the items from the expected peer support scale. Wording of the items was changed to reflect a past verb tense. As reflected in Figure 3.1, subjects completed this measure 4 to 5 weeks after completion of the

Items

1. My faculty advisor believed that the training was important.
 2. My faculty advisor allowed me to practice what I learned in training.
 3. My faculty advisor helped me when I asked for advice about how to use the skills I learned in training.
 4. My faculty advisor offered me opportunities to use the new skills I learned in training.
 5. My faculty advisor gave me helpful feedback when I tried out new skills or behaviors learned in training.
-

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Modified From:

Facteau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. D. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. Journal of Management, 21, 1-25.

Figure 3.5. Items measuring experienced advisor support.

Items
1. My team members will encourage my efforts to use new procedures that I have learned in training.
2. My team members will reinforce me for using the new skills I learned in training.
3. My team members will try to use the new skills they learned in training.
4. My team members believe in the importance of this training.

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Modified From:

Facteau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. D. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. Journal of Management, 21, 1-25.

Figure 3.6. Items measuring expected peer support.

training program. Responses to these items were made on the same rating scale as was used for the expected peer support measure, with higher scores indicating greater experienced peer support (1 = "Strongly Disagree" to 5 = "Strongly Agree"). Items measuring this scale are presented in Figure 3.7.

Expected Accountability. Eight items were used to measure the extent to which subjects felt they would be held accountable for using their rating skills when making performance evaluations. These items, presented in Figure 3.8, were adapted from an original set of items designed to measure general perceived training accountability (Allen, Poteet, Russell, & Dobbins, 1994). Revisions to the original items included: (1) modifying the content of the items to reflect specific rater training skills (e.g., making accurate performance ratings); and (2) rephrasing the wording to reflect a future verb tense (to assess "expected" accountability). Subjects were asked to indicate on a 5-point scale the extent to which they agreed or disagreed with each item (1 = "Strongly Disagree" to 5 = "Strongly Agree"). Higher scores on the scale indicate greater expected accountability.

Experienced Accountability. The extent to which subjects experienced accountability for transferring their trained skills was assessed with slightly modified versions of the items used to measure expected accountability. These items are presented in Figure 3.9. Wording of the items was revised to reflect a past verb tense to assess accountability that was experienced during the rating period. As reflected in Figure 3.1, subjects completed this measure 4 to 5 weeks after completion of the training program. Responses to these items were made on the same rating scale as was used for the expected

Items
1. My team members encouraged my efforts to use new procedures that I learned in training.
2. My team members reinforced me for using the new skills I learned in training.
3. My team members tried to use the new skills they learned in training.
4. My team members believed in the importance of rater training.

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Modified From:

Facteau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. D. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. Journal of Management, 21, 1-25.

Figure 3.7. Items measuring experienced peer support.

Items
1. I will be held accountable for making accurate performance ratings.
2. I will be held accountable for providing my team members with verbal feedback.
3. It is expected that I will make behaviorally-based performance ratings back in my team.
4. It is expected that I will provide behavioral, informal feedback to my team members.
5. After attending training, I will be expected to make effective performance ratings.
6. After attending training, I will be expected to provide my team members with timely, verbal feedback.
7. If I use the skills I learned in training when making performance ratings, I will be viewed more favorably by my team members.
8. If I use the skills I learned in training when providing informal, verbal feedback, I will be viewed more favorably by my team members.

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Figure 3.8. Items measuring expected accountability.

Items
1. I was held accountable for making accurate performance ratings.
2. I was held accountable for providing my team members with verbal feedback.
3. It was expected that I would make behaviorally-based performance ratings back in my team.
4. It was expected that I would provide behavioral, informal feedback to my team members.
5. After attending training, I was expected to make effective performance ratings.
6. After attending training, I was expected to provide my team members with timely, verbal feedback.
7. When I used the skills I learned in training when making performance ratings, I was viewed more favorably by my team members.
8. When I used the skills I learned in training when providing informal, verbal feedback, I was viewed more favorably by my team members.

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Figure 3.9. Items measuring experienced accountability.

accountability measure, with higher scores indicating greater experienced accountability (1 = "Strongly Disagree" to 5 = "Strongly Agree").

Knowledge. A 16-item learning measure was constructed for the purpose of gauging subjects' knowledge of the training material after completion of the training. Subjects completed this measure immediately following the training program. This instrument is presented in Appendix B. In part one of the learning measure, subjects were presented with four items which measured their knowledge of the differences between behaviors and inferences (four points possible). In part two, five multiple-choice items were presented which tapped subjects' ability to classify behaviors into their appropriate performance dimensions (five points possible). Part three of the learning measure contained four multiple-choice items that measured subjects' ability to identify and recognize different types of rating effects and errors (four points possible). Finally, part four contained three short answer items that addressed specific topics discussed in training (e.g., behaviors versus inferences; documenting behavior; providing verbal feedback). These short answer items were designed to be "listing" type questions whereby subjects were asked to list very specific answers to the questions. The first item asked for three specific answers, whereas the remaining two items assessed two answers each (seven points possible). The reason for making the short answer items as specific as possible (as opposed to asking open-ended, essay-type questions) was to minimize the subjectivity of the scoring process. The answer key for the learning measure was developed directly from the training content, and subjects' responses were scored by the primary researcher. Final scores, which range from 0 to 20, were obtained by

summing the total number of correct answers across all four parts of the measure.

Motivation to Transfer. The expectancy theory-based motivation to transfer scale was developed based on procedures outlined by Lawler (1981) and used by Mathieu et al. (1992) and Tannenbaum et al. (1991). Subjects' expectancy perceptions were assessed with a six-item scale based on past research (Mathieu et al., 1992; Noe & Schmitt, 1986). This scale assessed the extent to which subjects expected that using the skills learned in training would lead to increased rating performance, with higher scores indicating greater expectations. Items tapping this scale are presented in Figure 3.10. Ratings were made on a 5-point Likert-type rating scale (1 = "Strongly Disagree" to 5 = "Strongly Agree"). The reliability estimate for the expectancy scale in the current study was .84.

Instrumentality and valence were assessed with regard to twelve potential outcomes. Many of the twelve outcomes were adapted from an archival data set which contained instrumentality and valence ratings for sixteen possible outcomes (Dobbins, Russell, Kudisch, & Fecteau, 1990). The criteria for choosing potential outcomes for the present study included: (1) applicability of the outcomes to the current study sample, and (2) adequate psychometric properties. Other potential outcomes were created specifically for the study based on the context of training content and sample population (e.g., "Improving the performance of your team members"). The final list of outcomes was reviewed by the faculty supervisor of the MBA peer appraisal rating system to ensure their applicability to the MBA student sample. The outcomes used in the present study are listed in Figure 3.11. Each subject was asked to rate

Items

1. Successful use of the training skills will help me provide higher quality ratings of my team members' performance.
 2. I will be able to provide my team members with timely verbal performance feedback by employing the skills I learned in training.
 3. Using my new skills will enable me to provide my team members with behaviorally-based, verbal feedback.
 4. Successful use of the skills I learned in training will help me make more accurate and behaviorally-based performance evaluations.
 5. Using the skills I learned in training will enable me to provide my team members with verbal performance feedback.
 6. I will be able to provide behavioral examples of performance on each team members' rating form if I use the skills I learned in training.
-

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Based On:

Mathieu, J. E., Tannenbaum, S. I., & Salas, E. (1992). Influences of individual and situational characteristics on measures of training effectiveness. Academy of Management Journal, 35, 828-847.

Noe, R. A., & Schmitt, N. (1986). The influence of trainee attitudes on training effectiveness: Test of a model. Personnel Psychology, 39, 497-523.

Figure 3.10. Items measuring the "Expectancy" component for motivation to transfer.

Directions. For each of the following outcomes, please use the first column to indicate how much you desire the outcome. Use the second column to rate the extent to which you believe each outcome would occur if you are successfully using your new ratings skills to make accurate performance ratings and provide timely verbal feedback.

For example, consider the outcome "Having a feeling of personal satisfaction." If you view this outcome as extremely desirable, you should circle the response alternative "ED" in the first column. Then, if you believe that this particular outcome is highly likely to occur if you provide accurate performance ratings and verbal feedback, then you would circle the response alternative "HL" in the second column. Now go through this entire process for each of the twelve outcomes.

EU: Extremely Undesirable
 U: Undesirable
 N: Neutral
 D: Desirable
 ED: Extremely Desirable

HU: Highly Unlikely
 U: Unlikely
 N: Neutral
 L: Likely
 HL: Highly Likely

1. Having a feeling of personal satisfaction.
 2. Receiving recognition from faculty.
 3. Gaining the respect of team members.
 4. Being given better or more challenging projects.
 5. Improving your strengths and work-related skills.
 6. Improving your future job prospects and opportunities.
 7. Spending more time with team members in coaching and development.
 8. Having a more productive work team.
 9. Performing your work better.
 10. Increasing your self-confidence.
 11. Providing quality performance feedback to your team members.
 12. Improving the performance of your team members.
-

Figure 3.11. Potential outcomes of transferring training.

both the *desirability* of the outcome and *likelihood* that the outcome would occur if their rating training skills are used to make accurate performance ratings and provide timely verbal feedback. Ratings were made on 5-point Likert-type rating scales (1 = "Extremely Undesirable" to 5 = "Extremely Desirable", 1 = "Highly Unlikely" to 5 = "Highly Likely", respectively).

Following procedures used by Mathieu et al. (1992) and Tannenbaum et al. (1991), the valence (V) and instrumentality (I) ratings for each outcome were multiplied, and each of the resulting composites were multiplied by the average of the six expectancy (E) items, yielding twelve different VIE composite scores $[E (V \times I)]$. At this point, Cronbach's alpha was computed on the twelve composite scores to assess the internal reliability of the measure. These composites were then averaged to arrive at an overall motivation to transfer score for each subject. With this aggregation method, scores could range from 1 to 125, with higher scores indicating higher motivation to transfer.

Transfer of Training Measures

Four separate indicators were used to assess training transfer. Three of the four indicators were created specifically for the current study.

Self-Report Transfer. Approximately 4 to 5 weeks after the training program, subjects self-reported the extent to which they transferred the training's key behaviors and skills using the items presented in Figure 3.12. This nine-item scale was created by incorporating the major points of the rater training program into the content of the items. Subjects were asked to indicate on a 5-point scale the extent to which they agreed or disagreed with the items (1 =

Items

1. I made honest, accurate ratings of my team members' performance.
 2. I documented specific, behavioral examples of performance for each of my team members.
 3. I provided specific, behavioral incidents of performance on each team members' performance rating form.
 4. I distinguished between different performance dimensions when making performance ratings.
 5. I distinguished between behaviors and inferences when making performance ratings.
 6. I based my performance ratings on several observed incidents of performance as opposed to isolated incidents.
 7. I provided my team members with frequent, immediate verbal feedback.
 8. I cited specific, behavioral incidents of performance when providing my team members with informal feedback.
 9. I distinguished between behaviors and inferences when giving verbal feedback to my team members.
-

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Figure 3.12. Items measuring self-report transfer.

"Strongly Disagree" to 5 = "Strongly Agree"). Higher scores on the scale are indicative of greater self-reported transfer.

Peer-Report Transfer. Approximately 5 to 6 weeks after the training program, each subjects' peer team members rated the extent to which the subject transferred his or her training skills using the eight items presented in Figure 3.13. These items were created specifically for the current study. Team members were presented with a form which required them to write the name of the subject they were rating in the space provided and then make ratings of that subject. Team members were asked to indicate on a 5-point scale the extent to which they agreed or disagreed with the items (1 = "Strongly Disagree" to 5 = "Strongly Agree"). A target subject's score on this scale was computed by aggregating the ratings he or she was given by his or her peers for each item and averaging the resulting composite scores. Each target subject was rated by 1 to 5 peers. The scale's internal consistency was estimated using the composite item scores. A higher score on this measure is indicative of greater peer-reported transfer of the target subjects' training skills.

Behavioral Specificity of Comments. The behavioral specificity of subjects' open-ended comments was used as the third measure of training transfer. As was described earlier, subjects were asked to make open-ended comments about each team member's performance when making performance evaluations on the appraisal rating form. These comments were made 4 to 5 weeks after the training program. Each subjects' comments were typed verbatim and rated by two independent judges as to the extent to which the comments reflected behavioral statements (as opposed to inferential statements). The four items used by the judges

Items
1. This individual provided me with verbal performance feedback in a timely manner.
2. This individual based their verbal feedback on several incidents of performance as opposed to isolated incidents.
3. This individual cited specific, behavioral incidents of performance when providing me with informal feedback.
4. The feedback this individual provided to me was based on behaviors rather than inferences.
5. The feedback this individual provided to me was free from personal judgments and interpretations.
6. The feedback I received from this individual is accurate.
7. From the feedback provided to me, it was obvious that this individual took the time necessary to observe and document my performance.
8. The feedback I received from this individual will help me improve my performance.

Scale: 1 = "Strongly Disagree" to 5 = "Strongly Agree".

Figure 3.13. Items measuring peer-report transfer.

to evaluate the open-ended comments are presented in Figure 3.14. Judges used a 5-point Likert-type rating scale to indicate the extent to which the open-ended comments provided by a subject were reflective of each of the four behavioral-specificity items, with higher scores indicating greater behavioral specificity (1 = "No Extent at All" to 5 = "Great Extent").

A pool of four Industrial and Organizational Psychology doctoral students were selected as judges based on their prior applied performance rating experience as assessment center assessors. All four judges were trained on the "behaviors versus inferences" portion of the training content (Module 1) described earlier. The judges were also provided a frame-of-reference on which to base their ratings of the subjects' comments. Practice sessions were completed with example scenarios to reinforce the judges' understanding of the (1) distinction between behaviors and inferences and (2) frame-of-reference. Subjects' comments were rated by a subset of two paired judges from the overall pool of four trained judges. All judges were paired with one another on several occasions.

To arrive at an overall behavioral-specificity score for each subject, the expert judges rated the separate comments provided by a particular subject for each of his or her team members. For example, Tammy's comments for her teammates Joyce, Lynn, Deena, and Ethan were evaluated separately by the expert judges. Thus, for any one target subject, the judges rated a range of three to five separate sets of open-ended comments using the four-item behavioral-specificity scale. Between-judge agreement indices were calculated at this point using ratings of the individual behavioral-specificity items for each rated

Items
1. To what extent would other raters be able to agree with this rater's comments without significant discussion?
2. To what extent are this rater's conclusions/inferences supported with behavioral examples of performance?
3. To what extent does this rater provide behavioral examples to help the ratee understand his/her performance strengths or deficiencies?
4. Overall, to what extent does this rater's comments reflect behavioral incidents/examples rather than inferential conclusions?

Scale: 1 = "No Extent at All" to 5 = "Great Extent".

Figure 3.14. Items measuring behavioral specificity of open-ended comments.

set of comments. For example, the separate ratings Tammy received from judge A and judge B on the first behavioral-specificity item for her comments about Joyce were compared to assess their agreement. This process was then repeated for items two through four of the behavioral-specificity scale. After agreement was calculated on the four items pertaining to Tammy's comments about Joyce, this entire process was then repeated for Tammy's comments about Lynn, Deena, and Ethan.

A priori to the training of judges and rating of open-ended comments, agreement was defined by the primary researcher as a difference of no more than ± 1 -point on the 5-point behavioral specificity rating scale. Thus, if one judge provided a rating of '2' for an item while the other judge provided a rating of '3', agreement was purported to exist between their ratings for that item. On the other hand, if one judge provided a rating of '2' for an item while the other judge provided a rating of '4', then the ratings were determined to be in disagreement for that item. The reason for defining agreement in this manner (as opposed to requiring absolute perfect agreement) was two-fold. First, for the purposes of the present study it was sufficient to know whether subjects' comments represented high, medium, or low behavioral specificity. A difference of ± 1 -point on the rating scale would adequately convey this information due to the fact that each judge's rating was averaged with the other judge's rating (described below) when arriving at the overall behavioral specificity score. Thus, it was felt that requiring the judges to meet the much more stringent criteria of perfect agreement was unnecessary. Related to this, it was felt that the differences in item ratings of ± 1 -point would become less apparent when items were averaged into the composite behavioral-specificity score. Nevertheless, as recommended by Tinsley and Weiss

(1975), agreement indices were calculated using both the a priori ± 1 -point difference guideline and absolute agreement (i.e., 0-point difference) as the criteria.

Agreement was calculated using the Lawlis and Lu (1972) chi-square test and Tinsley and Weiss' (1975) T-index. An advantage of the Lawlis and Lu (1972) test is that it allows the researcher to define the criteria level for agreement. As just discussed, agreement in the current study was defined as a difference of no more than ± 1 -point on the rating scale. With this statistic, adequate agreement is indicated by a significant chi-square value at one degree of freedom. Tinsley and Weiss (1975) proposed their T-index as a supplement to the chi-square test. Modeled after Cohen's (1960) kappa-index, the T-index provides an indication as to whether the observed agreement was high, medium, or low. T-index scores can range from -1.0 (no agreement) to +1.0 (perfect agreement). For the current study, agreement between the judges' ratings across all subjects was high and significantly beyond what would be expected by chance ($\chi^2 = 991.9$, $p < .001$; $T = .84$). Even when using absolute agreement (i.e., 0-point difference), judges' ratings were in agreement significantly beyond chance ($\chi^2 = 780.6$, $p < .001$), although the absolute level of overall agreement was only moderately above average ($T = .31$).

After agreement indices on judges' original ratings were computed, judges consensed on the item ratings where observed differences were more than ± 1 -point. The consensus process involved the judges discussing the reasoning behind their ratings and revising the rating(s) to achieve pre-defined agreement (i.e., not more than ± 1 -point difference). After the consensus process was completed, ratings of each

item were collapsed across the two judges, resulting in an average score for each behavioral-specificity item. Because target subjects received separate ratings for the comments provided to each separate team member, the average score for each item (e.g., item one) was collapsed across the different sets of rated team members to arrive at four overall composite item scores for each target subject (representing the average ratings across judges and across rated team members). For example, the separate ratings Tammy received on item one for her comments about Joyce, Lynn, Deena, and Ethan were averaged together to form a composite score for item one. This process was then repeated for items two through four. The internal consistency estimate for the four-item behavioral-specificity scale was computed at this point. After this step, an overall behavioral-specificity score was computed for each subject by averaging across all four composite items on the scale.

Rating Effects. As described earlier, subjects' made formal performance appraisal ratings of their team members along six performance dimensions. One of the difficulties encountered when conducting performance appraisal field research is assessing the quality of the performance ratings. Typical accuracy measures employed in lab research, such as stereotype accuracy and differential accuracy (Cronbach, 1955), require that "true" scores be known for a rated target individual. In field research, such truth is rarely known. Nevertheless, the present study attempted to provide some investigation into subjects' performance ratings as a measure of transfer of training.

One of the key points of the training program was that subjects should attempt to distinguish between (1) different performance dimensions and (2) different ratees when making performance ratings. Module Three, which introduced and tested subjects on the definitions

and differences between the performance dimensions; Module Four, which discussed common rating errors; and Module Six, which involved practice rating sessions for subjects, were devoted to conveying this point to subjects. The current study assessed the extent to which this occurred by employing two previously used measures of performance rating effectiveness as indicators of the rating effects in subjects' ratings. The first indicator was a measure of halo, which represents the amount of between-performance dimension variability a rater demonstrates in his or her ratings. The second indicator was a measure of range restriction, which represents the amount of variability a rater demonstrates in his or her ratings between rated team members.

Halo is defined as the extent to which a rater gives similar ratings on each different performance dimension for a single ratee (cf., Bernardin & Beatty, 1984). Consistent with previous research (Bernardin, 1977; Borman, 1975), this indicator was assessed in terms of the standard deviation of a rater's ratings across performance dimensions - within ratee. Specifically, for each rated team member, performance dimension mean scores were calculated by averaging the items within each performance dimension, and the standard deviation of the mean scores across the six performance dimensions was calculated. This process was repeated for each rated team member. This resulted in anywhere from three to five separate standard deviation scores for each subject, depending upon the number of team members rated by any given subject. These scores were then averaged across the rated team members to arrive at an overall halo score for each study subject. This score represented the overall amount of variability in a subject's ratings between the performance dimensions.

Range restriction is defined as the extent to which a rater's ratings discriminate between different ratees (cf., Bernardin & Beatty, 1984). Similar to other studies (Bernardin, 1977; Motowidlo & Borman, 1977; Tsui & Barry, 1986), this indicator was operationalized in the current study in terms of the standard deviation of a rater's ratings across ratees - within each performance dimension. More specifically, for each performance dimension (e.g., Effort and Participation), the standard deviation of the mean scores (obtained by averaging the items within each performance dimension) across all rated team members was calculated. This resulted in six standard deviation scores for each subject, representing the six performance dimensions. These six standard deviation scores were then averaged to arrive at an overall range restriction score for each subject. This score represented the overall amount of variability in a subject's ratings between the rated team members.

For both indices, higher scores (i.e., standard deviations) are indicative of less range restriction and halo, thus representing greater training transfer. While halo and range restriction are conceptually distinct rating effects, in the current study the zero-order correlation between these two indicators was .67 ($p < .01$), indicating that subjects who tended to show more halo in their ratings also demonstrated more range restriction. While this trend may not be apparent in other research, in the current study, because of the high correlation between the two indicators, it was decided to have both indicators load on a single latent construct labeled Rating Effects.

Statistical Analysis

The present research employed a latent variable model approach to examine the hypothesized relationships among the constructs. The analyses were conducted with the LISREL VII computer program (Jöreskog & Sörbom, 1989a). The data analysis proceeded through two stages: confirmatory factor analysis (CFA) and structural equations modeling (Lance, Cornwell, & Mulaik, 1988). First, because the scales employed in the present study were based on scales used in previous research or were created specifically for this study, it was important to determine whether these scales adequately measured the constructs for which they were designed. To do this, the "fit" of the overall hypothesized measurement model to the actual data was assessed with CFA. To assess the fit of the measurement model, four goodness-of-fit indices were computed. Two of these are calculated by the LISREL VII computer program: the chi-square test and the root-mean-square-residual (RMSR). Two additional indices were computed when testing the measurement model: the comparative-fit index (CFI: Bentler, 1990) and the Tucker-Lewis index (TLI: Tucker & Lewis, 1973). Both indices are comparative in nature in that they compare the fit of the hypothesized measurement model to the fit of a null measurement model representing the worst fit attainable. The TLI was chosen because previous research has demonstrated that this index is not susceptible to small sample size bias, as is the case with other common fit indices such as the goodness-of-fit index (Anderson & Gerbing, 1984; Marsh, Balla, & McDonald, 1988). The CFI was chosen for the current study because it has been demonstrated to be a more stable estimator of model fit than the TLI (Bentler, 1990).

The second phase of the analysis involved a test of the proposed relationships in the structural model using limited information maximum likelihood parameter estimation (Lance et al., 1988). In addition to the four indices noted above, the relative-normed-fit index (RNFI: Mulaik, James, Van Alstine, Bennett, Lind, & Stilwell, 1989) was computed in order to compare the study's structural model to the best fit attainable. A benefit of the RNFI, compared to the other fit indices, is that it is not biased by the fit of the measurement model, and thus it may provide a clearer view into the fit of the structural model. Overall, good fit is indicated by CFI, TLI, and RNFI values that approach unity, chi-square statistics which are nonsignificant, and RMSR values that approach zero.

The learning measure employed in the current study was treated slightly differently than the other variables with regard to the LISREL analyses. Specifically, the scale score for this measure (i.e., sum of subjects' correct answers, ranging from 0 to 20) was used in the LISREL analyses as the sole indicator of the latent construct labeled Knowledge. To include an adjustment for measurement error in the LISREL analyses, the error variance for this measure was specified as the product of the variance of the scale multiplied by 1 minus the scale reliability. This approach, described by Jöreskog and Sörbom (1989b), has been used in previous research (e.g., Moorman, 1991).

CHAPTER IV

RESULTS

Preliminary Results

Before analyzing the data, an inspection of the item means and standard deviations was undertaken. All of the item kurtoses were within a generally acceptable range (highest kurtosis = 3.55), indicating that no items suffered from severe range restriction. However, a close examination of the experienced advisor support scale revealed several problems. Specifically, two of the scale's five items suffered from some range restriction (kurtosis of 3.50 and 2.78). In addition, 9.6% ($N = 13$) of the study sample failed to respond to the items comprising the scale, and 49.6% ($N = 61$) of those responding provided a rating of 3.00 ("Neutral" on the rating scale) on each of the scale's five items, indicating a general indifference to the items' content. Most important, however, was that 21 (15.4%) subjects, 12 of whom responded to the items, wrote notes on the questionnaire indicating that, at the time of the data collection, they had not addressed the topic of rater training with their advisor and thus were unable to respond to the items. Taken together, these observations led the researcher to question the meaningfulness of the data obtained with this variable. For this reason, it was decided to delete the experienced advisor support variable from further analyses.

Measurement Model

Before testing the a priori structural model, it was necessary to perform a confirmatory factor analysis (CFA) of the a priori measurement model in order to determine whether the latent constructs were

adequately measured by their representative items. The CFA was conducted using the correlation matrix of the study items as the input matrix. Each of the items were specified to load onto its respective latent factor, and all latent factors were allowed to intercorrelate. Computation of CFI and TLI required that a comparison model be estimated in addition to the a priori measurement model. This comparison model was a most-restrictive, "worst-fit" null model in which no factors were specified to represent the individual items.

Table 4.1 presents the results of these analyses for the a priori measurement model. As indicated by the fit indices, the a priori measurement model fit the data poorly. Specifically, although the chi-square-to-degrees of freedom ratio of 1.90 was within general standards for adequate fit, the other indices suggested low fit, as they were well below commonly accepted standards for good fit. Therefore, the a priori measurement model was revised in order to obtain a more adequate fit to the data. The revision process was conducted in two steps. In the first step, the modification indices for each item were inspected and those items which wanted to load on three or more factors were eliminated (cf., Fackeau et al., 1995). The modification index is a measure of the reduction in chi-square that would result if a single model parameter was freed and the model reestimated (Jöreskog & Sörbom, 1989b). As suggested (e.g., Jöreskog & Sörbom, 1989b), revisions to the model based on the modification indices were made only if the changes could be theoretically justified. For the current study, six items wanted to load on three or more factors, yet allowing these items to load on the factors could not be theoretically supported. Thus, they were deleted from the measurement model. These items included: items 2

Table 4.1. Overall results of confirmatory factor analysis.

<u>Model</u>	<u>Chi-Square</u>	<u>df</u>	<u>RMSR</u>	<u>CFI</u>	<u>TLI</u>
<u>A Priori Model</u>					
Null Model	12,053.05*	3,321	.223		
Measurement Model	6,009.08*	3,164	.079	.67	.66
<u>Revision 1 - Model</u>					
Null Model	10,661.83*	2,850	.225		
Measurement Model	4,894.84*	2,698	.074	.72	.70
<u>Revision 2 - Final Model</u>					
Null Model	8,907.77*	2,211	.237		
Measurement Model	3,361.73*	2,067	.066	.81	.79

Note. RMSR = Root Mean Square Residual; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index.

*p < .001

and 6 from the Career Planning scale; item 3 from the Self-efficacy scale; item 7 from the Expected Accountability scale; item 1 from the Self-Report Transfer scale; and item 1 from the Peer-Report Transfer scale. After eliminating these items, the revised measurement model was retested. The results of this analysis are also presented in Table 4.1 under the heading of "Revision 1 - Model." As indicated, the first phase of the revision process resulted in an improvement in fit of the measurement model. The chi-square-to-degrees of freedom ratio decreased to 1.81, the RMSR decreased to .074, and the CFI and TLI increased to .72 and .70, respectively. Nevertheless, further revision of the measurement model was necessary to achieve better fit.

To further revise the measurement model, the lambda values and theta delta statistics were examined in order to identify and remove those items that did not appear to be measuring their latent factors well. The lambda values represent the loading of each item onto its latent factor, whereas the theta delta statistics represent the amount of unique variation in each item not accounted for by the latent factor. Items with low lambda values (e.g., $< \approx .50$) and corresponding high theta delta values (e.g., $> \approx .750$) were deleted from further analysis. Based on this guideline, a total of nine additional items were deleted from the analyses, bringing the total number of items deleted to 15. Items that were deleted due to their low factor loadings included: items 1 ($\lambda = .501$, $\delta = .749$), 2 ($\lambda = .531$, $\delta = .718$), and 8 ($\lambda = .345$, $\delta = .881$) from the Expected Accountability scale; items 7 ($\lambda = .394$, $\delta = .844$) and 8 ($\lambda = .402$, $\delta = .838$) from the Experienced Accountability scale; item 4 ($\lambda = .504$, $\delta = .746$) from the Experienced Peer Support scale; and items 2 ($\lambda = .478$, $\delta = .772$), 3 ($\lambda = .477$, $\delta = .772$), and 6 ($\lambda = .482$, $\delta = .767$) from the Self-Report Transfer scale. The revised

model was subjected to another test, the results of which are presented in Table 4.1 under the heading of "Revision 2 - Final Model." As can be seen, the second revision resulted in a substantial improvement in fit over both the a priori and first-phase revised models. Specifically, compared to the a priori measurement model, the revised model's RMSR decreased by .013, the CFI increased by .14, and the TLI increased by .13. Further, the chi-square-to-degrees of freedom ratio decreased to 1.63, well within the rule-of-thumb of 2.00 indicating adequate fit (cf., Bollen, 1989). Also, as can be seen in Table 4.2, all of the lambda values for the items in the revised model were significant at a probability level of .05, and the median lambda value was .758. For these reasons, the measurement model that resulted from the second phase of the revision process was accepted and used as the foundation for examining the hypothesized structural model.

In sum, 15 of the original 82 items were deleted from the measurement model, leaving a total of 67 items measuring the 13 constructs. While the high number of items deleted does cause some concern, it is believed that the revised scales represent more accurate measures of their latent constructs. Further, an inspection of the remaining items' content reveals that they adequately represent the latent factor they were designed to measure. Nevertheless, it must be stressed that while there was an improvement in fit between the a priori and final revised measurement models, the CFI and TLI values of .81 and .79, respectively, are below commonly accepted standards of .90 for indicating good fit. As such, it can be concluded that the final revised measurement model provides reasonable, yet not ideal, fit to the data. While much better overall fit (as indicated by the CFI and TLI)

Table 4.2. Standardized lambda values, standard errors, and t-values for final study items.

Original Item Number ^a	Lambda Value ^b	Lambda Standard Error	Lambda T-value	Structural Item Number ^c
$\eta 1$: Rating Effects (0)				
1	.942	.107	8.839	1
2	.716	.099	7.206	2
$\eta 2$: Behavioral Specificity (0)				
1	.976	.064	15.245	3
2	.986	.063	15.573	4
3	.994	.063	15.814	5
4	.996	.063	15.873	6
$\eta 3$: Peer-Report Transfer (1)				
2	.824	.074	11.132	7
3	.768	.077	10.032	8
4	.858	.072	11.850	9
5	.752	.077	9.725	10
6	.760	.077	9.866	11
7	.692	.080	8.679	12
8	.711	.079	8.993	13
$\eta 4$: Self-Report Transfer (4)				
4	.678	.085	7.941	14
5	.626	.087	7.193	15
7	.623	.087	7.142	16
8	.683	.085	8.013	17
9	.695	.085	8.196	18

Table 4.2. Standardized lambda values, standard errors, and t-values for final study items (continued).

Original Item Number ^a	Lambda Value ^b	Lambda Standard Error	Lambda T-value	Structural Item Number ^c
$\eta 5$: Motivation to Transfer (0)				
1	.696	.079	8.864	19
2	.582	.082	7.061	20
3	.672	.079	8.462	21
4	.685	.079	8.663	22
5	.824	.073	11.282	23
6	.686	.079	8.685	24
7	.664	.080	8.317	25
8	.826	.073	11.311	26
9	.838	.072	11.576	27
10	.793	.075	10.638	28
11	.757	.076	9.954	29
12	.796	.074	10.694	30
$\xi 1$: Expected Accountability (4)				
3	.781	.079	9.919	31
4	.791	.078	10.109	32
5	.709	.082	8.700	33
6	.632	.084	7.493	34
$\xi 2$: Expected Peer Support (0)				
1	.786	.078	10.100	35
2	.854	.075	11.405	36
3	.739	.080	9.275	37
4	.659	.083	7.967	38
$\xi 3$: Expected Advisor Support (0)				
1	.789	.075	10.458	39
2	.824	.074	11.165	40
3	.867	.072	12.109	41
4	.831	.073	11.312	42
5	.869	.072	12.155	43
$\xi 4$: Career Planning (2)				
1	.822	.076	10.767	44
3	.757	.079	9.578	45
4	.738	.080	9.255	46
5	.837	.076	11.052	47

Table 4.2. Standardized lambda values, standard errors, and t-values for final study items (continued).

Original Item Number ^a	Lambda Value ^b	Lambda Standard Error	Lambda T-value	Structural Item Number ^c
ξ5: Self-efficacy (1)				
1	.739	.078	9.496	48
2	.724	.078	9.234	49
4	.564	.084	6.715	50
5	.569	.084	6.788	51
6	.564	.084	6.713	52
7	.726	.078	9.266	53
8	.805	.075	10.769	54
9	.822	.074	11.116	55
10	.753	.077	9.755	56
11	.680	.080	8.486	57
ξ6: Experienced Accountability (2)				
1	.758	.078	9.772	58
2	.691	.080	8.597	59
3	.759	.078	9.787	60
4	.825	.075	11.076	61
5	.765	.077	9.893	62
6	.685	.081	8.498	63
ξ7: Experienced Peer Support (1)				
1	.876	.074	11.765	64
2	.835	.076	10.977	65
3	.712	.081	8.824	66
ξ8: Knowledge (0)				
1	.814	.077	10.608	67

Note. Numbers in parentheses by each construct label refer to the number of items deleted from that scale in the revision process.

^a"Original Item Number" refers to the item number displayed in Figures 3.2 to 3.14.

^bNumbers represent lambda values that resulted from the standardized solution.

^c"Structural Item Number" refers to the item number displayed in Figure 4.1 depicting the a priori structural model.

would have been preferred, it was decided to use the results of the revised measurement due to the other favorable results (e.g., significant lambda values).

Descriptive Statistics

Descriptive statistics for all study variables in the revised measurement model are presented in Table 4.3. Overall, subjects' were very confident in their ability to use their ratings skills, as assessed by the self-efficacy variable. On average, subjects expected to receive some support from their advisors and peers, and they expected that they would be held accountable for using their training skills. However, the amount of peer support received and accountability experienced were slightly lower than their initial expectations. On average, subjects reported that they transferred their skills when making performance ratings, and, to a lesser degree, subjects' peers also reported moderately high levels of transfer. On the other hand, scores on the two behavioral measures of transfer were relatively lower than the self- and peer-reported measures. Specifically, the overall average for behavioral specificity was 1.95, indicating that as a group, subjects tended to provide comments that were mainly inferentially-based. Further, the overall average score (i.e., standard deviation of the performance rating scale) for the rating effects measure was .47. This value, which is less than half of difference between any two points of the performance rating scale, indicates that there was only moderate variance in subjects' performance ratings of their peers between performance dimensions and between ratees.

Intercorrelations

Intercorrelations among all revised study variables are

Table 4.3. Descriptive statistics for study variables.

Variable	Number of Items	M	SD	Observed Minimum	Observed Maximum	Possible Range of Values
$\eta 1$: Rating Effects ^{ab}	2	.47	.17	.11	1.12	0 - 2.25
$\eta 2$: Behavioral Specificity	4	1.95	.83	1.00	4.50	1 - 5
$\eta 3$: Peer-Report Transfer	7	3.44	.40	1.50	4.29	1 - 5
$\eta 4$: Self-Report Transfer	5	3.63	.62	1.00	4.80	1 - 5
$\eta 5$: Motivation to Transfer ^c	12	67.63	17.29	7.04	111.25	1 - 125
$\xi 1$: Expected Accountability	4	4.19	.56	1.75	5.00	1 - 5
$\xi 2$: Expected Peer Support	4	3.57	.64	2.00	5.00	1 - 5
$\xi 3$: Expected Advisor Support	5	3.77	.75	1.50	5.00	1 - 5
$\xi 4$: Career Planning	4	3.47	.80	1.00	5.00	1 - 5
$\xi 5$: Self-efficacy	10	8.08	.88	5.50	10.00	1 - 10
$\xi 6$: Experienced Accountability	6	3.92	.70	1.00	5.00	1 - 5
$\xi 7$: Experienced Peer Support	3	3.10	.78	1.00	5.00	1 - 5
$\xi 8$: Knowledge ^d	16	15.70	2.53	5.00	20.00	0 - 20

Note. Descriptive statistics presented in this table represent the study variables that resulted from the revision process conducted as part of the measurement model examination.

^aDescriptive statistics for the halo and range restriction indicators are presented in Appendix C (Table C.1).

^bDescriptive statistics, intercorrelations, and reliability estimates for the MBA Performance Appraisal skill dimensions, from which the halo and range restriction measures were calculated, are presented in Appendix C (Tables C.2 and C.3).

^cDescriptive statistics and intercorrelations for the expectancy, instrumentality, and valence subscales of the motivation to transfer measure are presented in Appendix C (Tables C.4 and C.5).

^dThe scale score for this variable was loaded as a single indicator for the latent construct in the LISREL analyses. Descriptive statistics for the four parts of the knowledge measure are presented in Appendix C (Table C.6).

presented in Table 4.4. As seen in the table, the reliability estimates indicate that most of the scales possess sufficient internal consistency. The K-R 20 reliability estimate for the Knowledge measure was slightly below the accepted standard of .70, but this may have been due to the low variance for several items in the measure. Specifically, for 12 of the 20 possible answers (measured via 16 items), a very high percentage of subjects obtained the correct answer, with means ranging from .82 to .99 and standard deviations ranging from .12 to .38. Also, the correlation between the two indicators of the Rating Effects measure (i.e., halo and range restriction) was slightly below .70. This should not be too surprising given that both indicators measured somewhat distinct rating effects. Nevertheless, the correlation was considered sufficient to retain the two measures as indicators of the same scale.

A perusal of the variable intercorrelations revealed several interesting findings. Subjects' self-efficacy and career planning were positively related to their motivation to transfer ($r = .56$ and $r = .19$, respectively). Further, all three expected work environment variables (e.g., accountability; peer support; advisor support) had significant positive intercorrelations with motivation to transfer. Motivation to transfer was significantly related to the transfer measures of behavioral specificity and self-reported transfer, but not related to rating effects or peer-reported transfer. Both experienced accountability and experienced peer support were significantly correlated with self-reported transfer. Interestingly, experienced peer support was negatively related to rating effects, suggesting that subjects' showed more halo and range restriction to the extent they received more support from their peers for using their skills.

Table 4.4. Intercorrelations and reliability estimates for all latent study variables.

Variable	1	2	3	4	5	6	7	8	9	11	12	13	
1. Rating Effects	(.67) ^c												
2. Behavioral Specificity	.07	(.99) ^a											
3. Peer-Report Transfer	.14	.03	(.91) ^a										
4. Self-Report Transfer	.08	.05	.04	(.80) ^a									
5. Motivation to Transfer	.13	.19*	.12	.29**	(.93) ^a								
6. Expected Accountability	.17	.27**	.12	.27**	.61**	(.82) ^a							
7. Expected Peer Support	-.01	.13	-.01	-.03	.48**	.54**	(.84) ^a						
8. Expected Advisor Support	.12	.13	.02	.06	.29**	.36**	.37**	(.92) ^a					
9. Career Planning	.12	.24**	.01	.07	.19*	.12	.14	.12	(.87) ^a				
10. Self-efficacy	.11	.15	.16	.20*	.56**	.50**	.38**	.28**	.19	(.90) ^a			
11. Experienced Accountability	.12	.06	.15	.65**	.38**	.42**	.10	.11	-.13	.32**	(.88) ^a		
12. Experienced Peer Support	-.30**	-.05	.18	.31**	.29**	.13	.33**	.11	-.08	.21*	.49**	(.85) ^a	
13. Knowledge	.16	.16	.41**	.07	.37**	.42**	-.05	.05	-.17	.29**	.13	.06	(.66) ^b

Note. Intercorrelations presented are between the final variables that resulted from the measurement model analyses.

Correlations were computed using latent variable statistics. Numbers in parentheses represent scale reliability estimates using raw-score intercorrelations.

^aValues represent internal reliability estimated with Cronbach's alpha.

^bValue represents Kuder-Richardson reliability estimate.

^cValue represents the zero-order correlation between the two items.

* $p < .05$ ** $p < .01$, two-tailed probability.

Surprisingly, the transfer measures were not intercorrelated, indicating that the measures were assessing different components of training transfer. Career planning was significantly related to the behavioral specificity of subjects' open-ended appraisal comments, while subjects' self-efficacy was significantly correlated with their self-reported transfer. As a control variable, subjects' knowledge of the training material was related to their motivation to transfer and to peer-reported transfer. Finally, subjects' expected accountability showed fairly high correlations with other variables, such as self-efficacy ($r = .50$) and expected peer support ($r = .54$), suggesting that there may be some overlap between these constructs.

Structural Model

The second phase of the analyses involved testing the hypothesized relationships between the latent constructs using structural equations modeling. Figure 4.1 presents the structural model that was tested in the current study. In this step, each of the endogenous variables was simultaneously regressed onto its causal antecedents. Each item's factor loading was fixed at its lambda value resulting from the measurement model analyses. Because the experienced advisor support variable was eliminated from the analyses prior to examining the measurement model, hypothesis 5 was not tested. The results of this analysis are presented in Table 4.5 and Figure 4.2.

As depicted in Figure 4.2, five of the seventeen relationships of interest (i.e., not including the control paths from Knowledge to five constructs) in the present study were significant at a probability level of .05, one relationship was marginally significant at a probability level of .10, and one relationship was significant, yet opposite to the

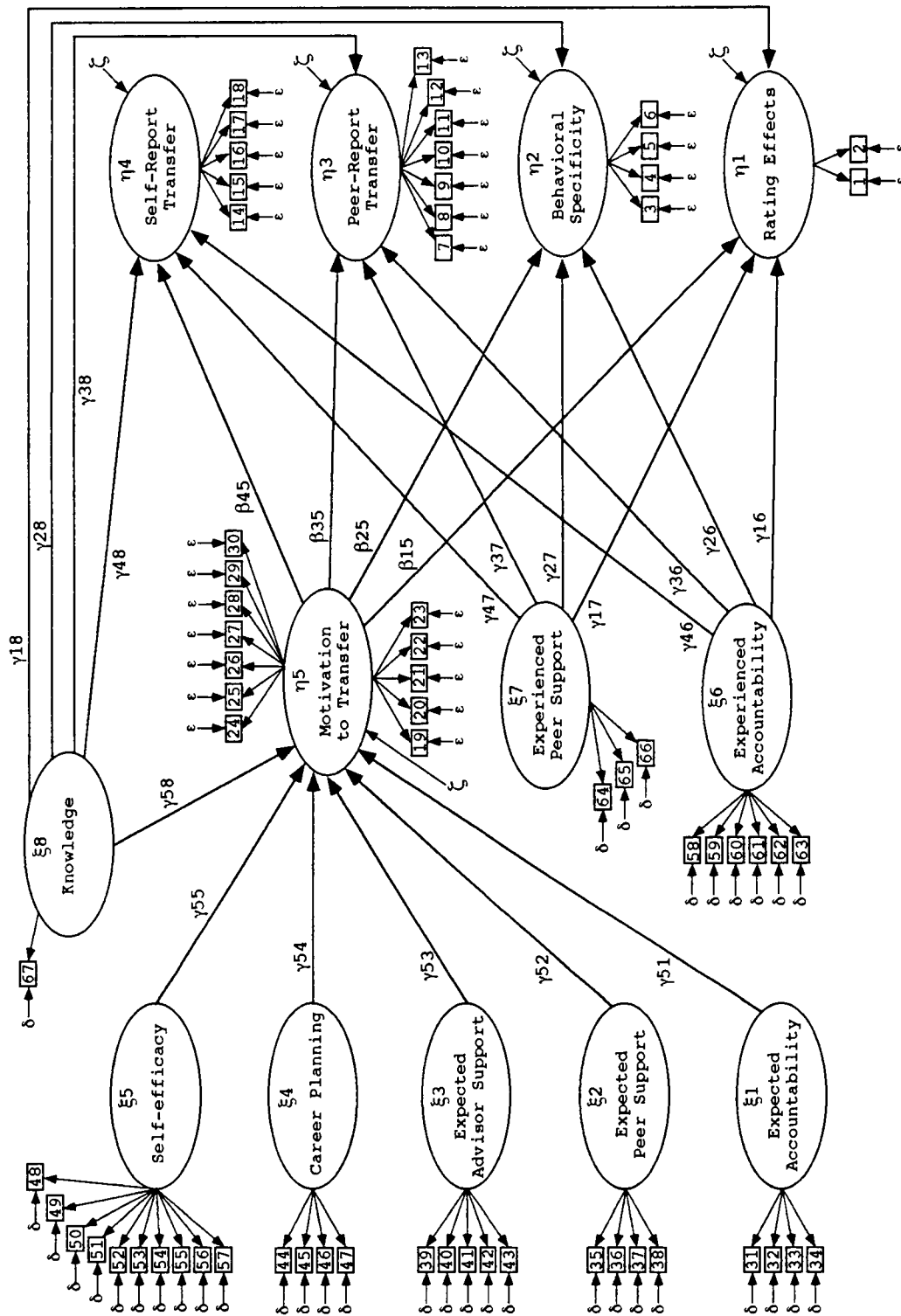


Figure 4.1. Structural model tested in the current study.

Note. Curved lines representing correlations among latent exogenous variables omitted.

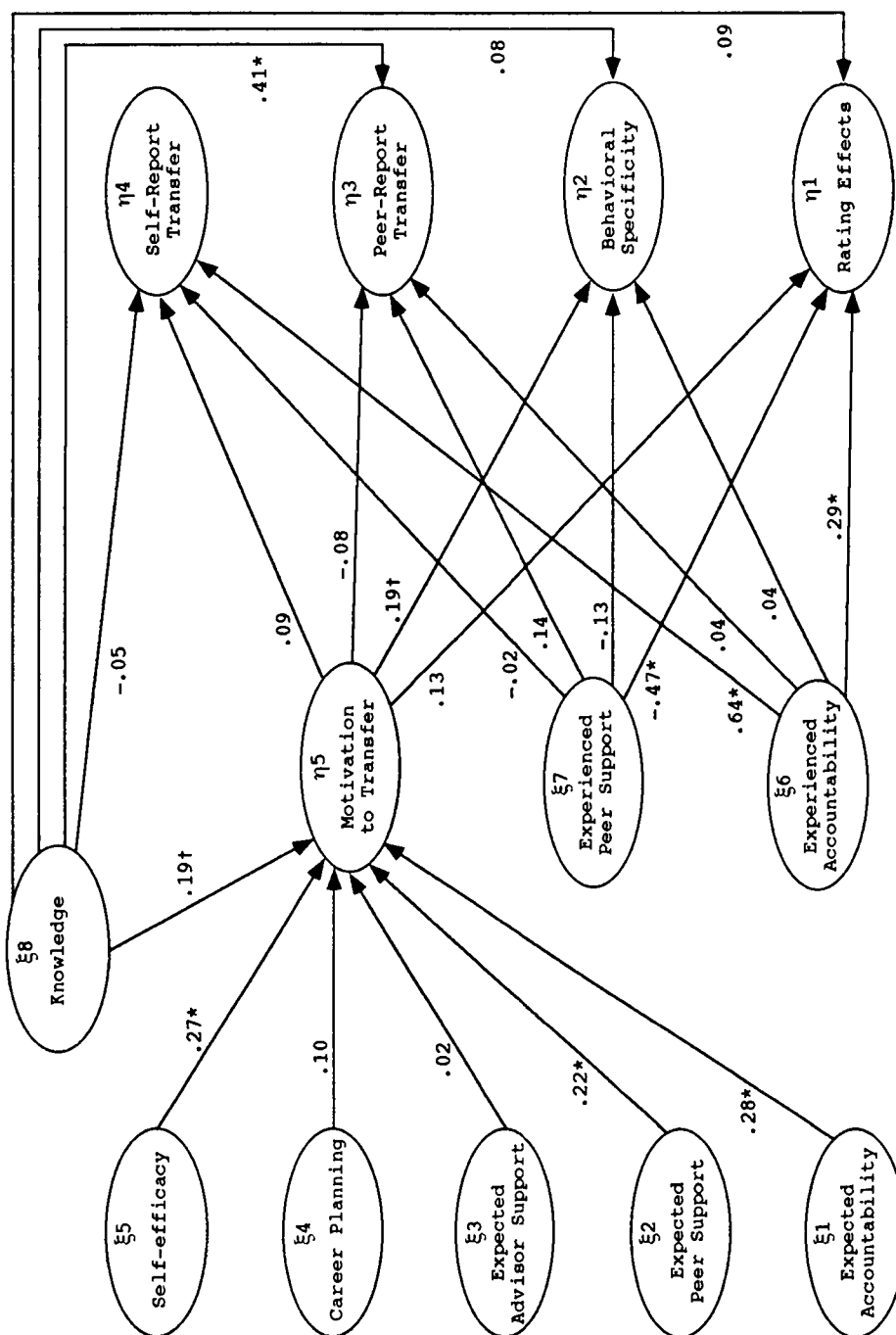


Figure 4.2. Results of the hypothesized relationships.

Table 4.5. Overall results of hypothesized structural model.

Model	Chi-Square	df	RMSR	CFI	TLI	RNFI
A Priori Structural Model	3,432.96*	2,157	.076	.81	.80	.99

Note. RMSR = Root Mean Square Residual; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RNFI = Relative Normed Fit Index.

*p < .001.

direction predicted. The fit indices presented in Table 4.5 indicate that, similar to the measurement model, the hypothesized structural model provided reasonable fit to the data. Specifically, the chi square-to-degrees of freedom ratio was 1.61, and the RNFI, which assesses the structural model fit independent of the fit of the measurement model, was very favorable at .99.

Factors Related to Motivation to Transfer

One of the purposes of the present study was to examine factors related to motivation to transfer. After controlling for the effects of knowledge on motivation to transfer, only one of the two individual factors was significantly related to motivation to transfer. In support of hypothesis 3, subjects who had higher self-efficacy reported higher levels of motivation to transfer their trained skills. Conversely, subjects' level of career planning had little effect on their motivation to transfer. Thus, hypothesis 2 was not supported.

Of the three expected work environment variables, subjects' expected accountability and expected peer support were significantly related to their motivation to transfer. In support of Hypothesis 6, subjects who expected to receive greater support from their peers for using their training skills also reported higher motivation to transfer those skills. As predicted in hypothesis 8, subjects who expected that they would have to use their trained skills (i.e., expected accountability) showed higher motivation to do so. Subjects' expected level of advisor support was not related to their motivation. Thus, hypothesis 4 was not supported.

Factors Related to Transfer of Training

Another purpose of the current study was to examine factors related to the transfer of training skills. Both experienced

environmental factors were related to some of the transfer measures. Experienced accountability was significantly related to self-reported transfer and rating effects. Subjects who encountered higher levels of accountability reported higher transfer of skills and demonstrated less halo and range restriction in their ratings. By contrast, experienced accountability was unrelated to peer-report transfer or behavioral specificity. Thus, hypothesis 9 was partially supported. Surprisingly, experienced peer support was negatively related to the rating effects in subjects' performance ratings. Specifically, subjects who received more peer support for using their trained skills showed more halo and range restriction in the performance ratings of their team members. Relationships between experienced peer support and the other three transfer measures were not significant. Therefore, hypothesis 7 was not supported.

Despite having positive, significant zero-order correlations with two of the four transfer measures, the structural equations analyses indicated that subjects' motivation to transfer was only marginally related to one measure of transfer. In the current study, subjects who were more motivated to transfer their skills showed somewhat higher behavioral specificity in the open-ended comments they provided to their team members. Overall, hypothesis 1 was minimally supported.

Supplemental Analyses

In order to partially determine whether the moderate fit of the measurement model used in the analyses influenced the relationships observed in the structural model, a set of additional exploratory analyses were conducted. In the first step of these analyses, the measurement model was further refined and modified based on the factor loadings that resulted from the final revised measurement model used to

test the hypothesized structural model (these factor loadings are presented in Table 4.2). The primary objective of this supplemental revision process was to raise the fit of the measurement model to commonly accepted standards for good fit (i.e., CFI and TLI above .90). In doing so, however, it was deemed necessary to retain each of the thirteen latent constructs during the revision process. That is, while deleting certain entire scales with relatively low item factor loadings (e.g., Self-Report Transfer) may have increased the fit, such revision was not considered. The reason for not deleting entire scales was to allow for a subsequent test of the complete structural model using a further-revised measurement model (i.e., the deletion of entire scales would have necessitated an undesired revision to the structural model). In lieu of this decision, the revision process focused on narrowing each of the scales down to the items that best measured each of the latent constructs (as indicated by higher factors loadings). The second step of these supplemental analyses then used the further-revised measurement model as the basis for re-estimating the proposed structural model.

The results of the first step revealed that in order to obtain good fit of the measurement model (i.e., CFI & TLI $\geq$.90), an additional 20 items had to be removed from the measurement model, leaving a total of 47 items measuring the 13 latent constructs. Revisions were made to seven of the 13 scales, resulting in each latent construct being measured by a range of three to five items. The sole exception to this pattern was the Knowledge construct, which, of course, was specified as a single item construct in the measurement model. The results of the revised measurement model indicated good fit to the data ($\chi^2 = 1,357.75$; $df = 957$; $RMSR = .056$; $CFI = .91$; $TLI = .90$). As before, the lambda

values resulting from the supplemental measurement model were used to fix the item loadings when testing the structural model.

The results of the structural model also indicated good fit ($\chi^2 = 1,432.59$; $df = 1,027$; $RMSR = .069$; $CFI = .91$; $TLI = .91$; $RNFI = .98$). The path estimates of the supplemental structural model are presented in Figure 4.3. While the fit indices showed some improvement over the original structural model, the path estimates of the supplemental structural model were very similar to the path estimates of the hypothesized structural model reported earlier. Specifically, of the 22 paths specified in the models (including the Knowledge variable), 18 changed in strength by an absolute value of only .02 or less between the hypothesized and supplemental models. Further, most of the relationships that reached statistical significance in the hypothesized model were the same relationships reaching significance in the supplemental model. There were three relationships, however, that were altered between the original and supplemental structural models. First, the path estimate of .22 ($p < .05$) from expected peer support to motivation to transfer decreased to a level of marginal significance ($\gamma = .20$, $p < .10$) in the supplemental model. Second, the path estimate from knowledge to motivation to transfer dropped from a marginally significant .19 to a non-significant estimate of .18. Finally, the path estimate from motivation to transfer to behavioral specificity decreased from a marginally significant .19 to a non-significant estimate of .16. Despite these changes, the fact that most relationships were not substantially altered between the original structural model and the supplemental structural model provides some evidence to suggest that the less than ideal fit of the original measurement model did not seriously

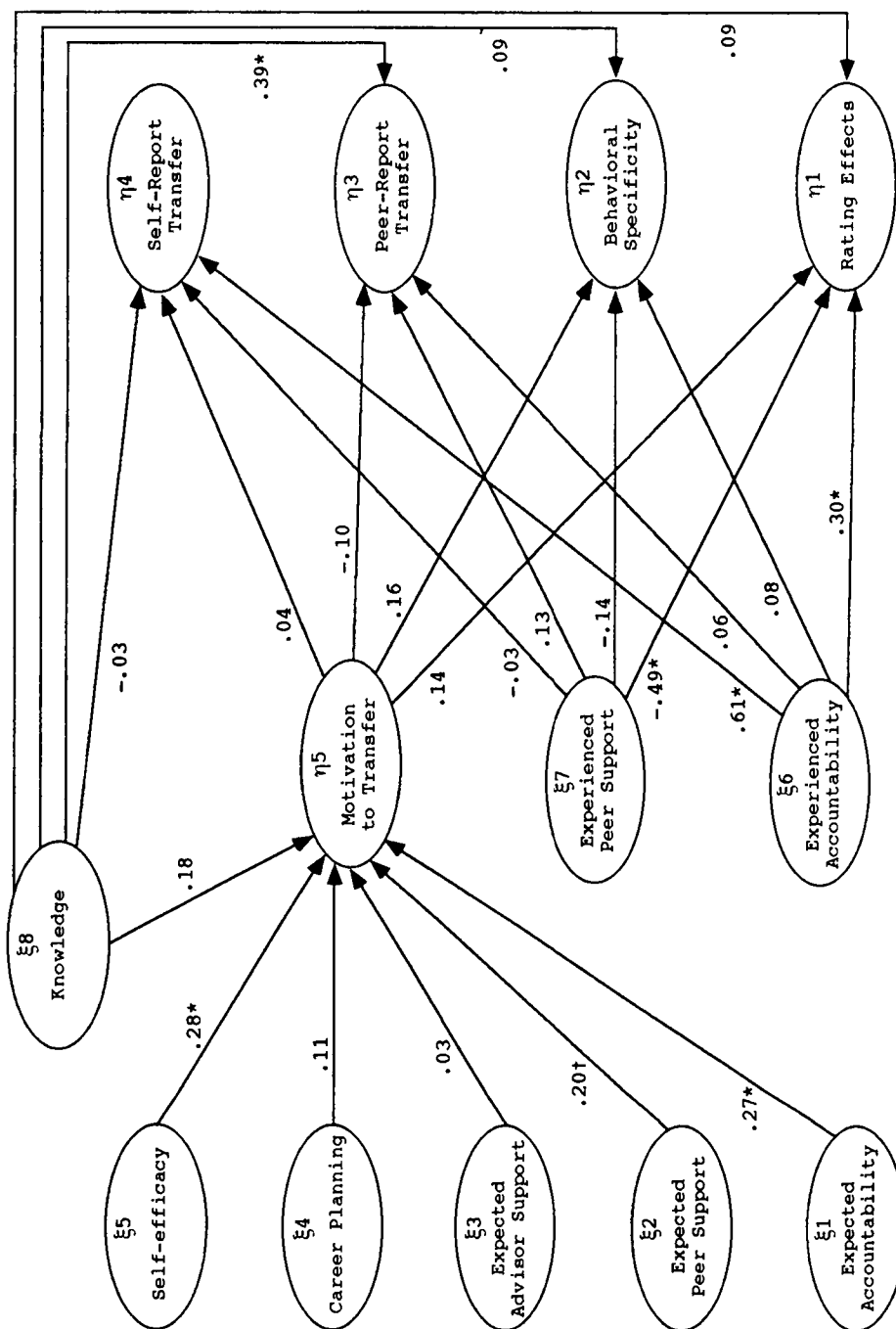


Figure 4.3. Results of the supplemental structural model after further revision of the measurement model.

Note. Correlations among latent exogenous variables omitted.

† $p < .10$ * $p < .05$, two-tailed probability.

affect the results of the structural model. Therefore, further discussion of the study's results will be based on the findings from the original, a priori structural model.

CHAPTER V

DISCUSSION

The present study attempted to add to a growing body of literature examining individual, environmental, and motivational influences on training transfer. Several studies have demonstrated that trainees' motivation to learn is related to subsequent learning of the material, yet relatively few studies have examined the impact of motivation to transfer on actual transfer of training skills. Those studies that have been conducted have shown mixed results. One purpose of the present study was to examine the impact of subjects' motivation to transfer in the training transfer process. Additionally, this was the first study to employ a theoretically-based measure of motivation to transfer and relate this measure to multiple behavioral transfer variables.

Another purpose of the study was investigate the impact of individual and environmental variables in the training transfer process. To accomplish this goal, several individual and environmental factors, based on the framework offered by Baldwin and Ford (1988), were tested as antecedents of subjects' motivation to transfer and subsequent transfer of training skills. This chapter will discuss the results of the hypotheses proposed in the study. The discussion will be separated into two major sections corresponding to the factors that are related to motivation to transfer and the factors that are related to actual transfer of training. Following this, the limitations of the study will be addressed, as well as the practical and theoretical implications of the study. Future research suggestions will also be offered.

Motivation to Transfer

One of the overall objectives of the study was to examine subjects' motivation to transfer and the factors that may be related to it. In the present study, subjects' motivation to transfer scores could range from 1 to 125, with higher scores indicating greater motivation to transfer. The overall average score observed in the study was 67.63 with a standard deviation of 17.29. This figure is just slightly above the scale mid-point of 62.5, indicating that overall, subjects were only moderately motivated to transfer their skills.

Individual Factors Related to Motivation to Transfer

Hypothesis 2 predicted that subjects' level of career planning would be positively associated with their motivation to transfer. It was reasoned that subjects who have clear career objectives and strategies in place for achieving those objectives would be more motivated to transfer training skills that could be instrumental for helping them progress toward their career goals. This relationship was not supported in the current study. While the path estimate from career planning to motivation was positive, it failed to reach statistical significance. The most direct explanation for the failure to find a significant relationship between career planning and motivation to transfer may be that subjects failed to consider the use of their ratings skills as critical to the attainment of the career objectives. On the other hand, it is also possible that subjects may have felt that the rater training was important for achieving career goals, yet it was relatively less important compared to other activities (e.g., completing class projects; obtaining high grades). Given limited amounts of time to accomplish all of their activities, subjects may have been less motivated to transfer their rating skills compared to their motivation

to complete the other activities. This speculation in providing a possible explanation for the failure to find a significant relationship in the current study, needs to be tested in further research. For example, research similar to the current study could gather a comprehensive listing of each subjects' job responsibilities and ask the subjects to estimate the relative importance of the training skills compared to the other job responsibilities with regard to achieving their career goals. This measure could then be analyzed to determine whether the relative importance of training compared to other job responsibilities affects the relationship between career planning and motivation to transfer. In addition to measuring the training's relative importance compared to other job responsibilities, future research should gather subjects' absolute judgments regarding the training's usefulness for achieving career goals to determine whether these perceptions affect the relationship between career planning and motivation to transfer.

By contrast, hypothesis 3 predicted that subjects' self-efficacy for using their ratings skills would be positively related to their motivation to transfer those skills. This hypothesis was supported in the current study, as the path coefficient between the two variables was significant ($\gamma = .27$, $t = 2.95$, $p < .05$). By definition, subjects who have high levels of self-efficacy believe that they possess the cognitive and physical capabilities to perform a specific task. When subjects are confident that they can perform a task, they often possess a greater desire to perform that task. As elaborated below, this suggests that organizations desiring to increase trainees' motivation to transfer could do so by attempting to improve trainees' perceptions of self-efficacy.

The results of this study regarding self-efficacy correspond with past research that has demonstrated that self-efficacy is an important component in the transfer of training process. However, while most previous studies have examined the direct influence of self-efficacy on task performance, the current study differed in that it proposed that individuals' self-efficacy affects transfer via its direct influence on motivation to transfer. While support was demonstrated for the impact of self-efficacy on motivation to transfer, the complete mediator effect was not confirmed as motivation to transfer was not related to most measures of transfer. This implies that subjects' self-efficacy may affect their task performance independent of its affect on their motivation.

Work Environment Factors Related to Motivation to Transfer

Hypothesis 4 predicted that subjects' expectations regarding the support they would receive from their advisor for using their skills would be positively related to their motivation to transfer. This hypothesis was not supported in the present study. While subjects expected moderate amounts of transfer-related support from their advisors ($M = 3.77$), the expected support did not affect their motivation to transfer. Specifically, expected advisor support was not related to subjects' motivation to transfer ($\gamma = .02$, $t = .26$, n.s.).

It may be that despite the support that was expected, subjects' felt that their advisors could not exert an influence in the transfer process. For example, subjects may have felt that the outcomes associated with using their skills could not be affected by or were not in the control of their advisor. Hence, the advisor may have been perceived by subjects as having minimal actual ability to reward subjects for using their training skills. Related to this, subjects may

have perceived that whatever efforts advisor make to facilitate their transfer of training skills would have little overall impact. In either scenario, subjects' motivation to transfer would probably have been unaffected. When combined with the fact that the experienced advisor support variable was dropped from the analyses due to reasons described earlier (i.e., lack of contact with advisor regarding the training), these results suggest that advisor support for using the trained skills did not play a role in the transfer process for the current study.

It was proposed in Hypothesis 6 that the expected amount of support from peers would also be positively associated with motivation to transfer. This hypothesis was supported in the current study ($\gamma = .22$, $t = 2.06$, $p < .05$). When subjects perceived that they would receive more support and help from their peers when attempting to use their training skills, subjects were more motivated to transfer those skills to work context. This finding is consistent with previous research that has demonstrated the importance of peer support for trainee-related motivation (e.g., Fecteau et al., 1995). When an individual expects his or her peers to support efforts to transfer skills through such behaviors as providing encouragement, providing opportunities to use the skills, etc., he or she may be more apt to perceive that applying the skills would be less difficult, and hence, the individual may become more motivated. It may also be the case that subjects' perceive their peers can facilitate the attainment of valued outcomes that may result from the use of their training skills (e.g., gaining respect of team members; spending more time with team members in coaching and development; improving the performance of your team members). If this is the case, then to the degree that subjects expect their peers to support their transfer efforts, they may believe that

valued outcomes may be easier to obtain. Hence, they may become more motivated to transfer their skills.

Hypothesis 8 predicted that subjects' expected accountability would be positively related to their motivation to transfer. With a significant path estimate of .28 ($t = 2.24$, $p < .05$), this hypothesis was confirmed. In the current study, those individuals who had higher expectations regarding the accountability they would encounter for using their training skills showed higher motivation to transfer those skills. Several factors in the study context may have served to increase subjects' perceptions regarding their accountability for using the training skills. These factors may include: (1) information about the training program distributed to students prior to their attendance at the training; (2) the talk given by the faculty sponsor immediately prior to the training program regarding the importance of the training and the peer appraisal system; (3) subjects' knowledge that the training program would be evaluated to assess its effectiveness; and (4) subjects' perceptions that the resources committed to the training program and the peer appraisal system implied that it was an important and worthwhile endeavor. In short, any of these factors could have served to increase subjects' expectations regarding the accountability they would encounter. Previous research (e.g., Klimoski & Inks, 1990) has suggested that under conditions of accountability, individuals conform their behavior to meet the expectations or wishes of others. Applied to the current study, this suggests that subjects who perceived that they would be held accountable for using their skills may have adapted their intentions and motivation to meet the expectations set before them (i.e., to use their skills). In turn, this may have resulted in increased motivation to transfer.

Transfer of Training

The second overall goal of the study was to examine the factors that may be related to subjects' actual transfer of training. Four separate indicators of transfer were examined in the current study: self-report transfer, peer-report transfer, behavioral specificity, and rating effects. Overall, subjects reported that they transferred their skills to an above-average extent, with a mean of 3.63 ($SD = .62$). Similarly, peer-reported transfer was also above average ($M = 3.44$, $SD = .40$). On the other hand, the two remaining indicators of transfer (rating effects; behavioral specificity) were not as indicative of transfer (i.e., they indicated fairly low transfer). Interestingly, these latter two indicators were the more behaviorally-based measures of transfer. Overall, subjects tended to provide comments on their peers' performance appraisals that were mainly inferentially-based. That is, contrary to what was taught in training, their comments were mostly replete with judgments, conclusions, inferences, etc., rather than descriptive behaviors. Similarly, the overall average score (i.e., standard deviation of the performance rating scale) for the rating effects measure was .47. This value, which is less than half of difference between any two points of the performance rating scale, indicates that there was only moderate variance in subjects' performance ratings of their peers between performance dimensions and between ratees. Separated into its two indicators, the average score for halo was .43 ($SD = .14$), while the average score for range restriction was .51 ($SD = .22$). Taken together, the finding that the two more behaviorally-based measures of transfer conveyed very different results from the self- and peer-report measures has important implications for

previous training transfer-related research that has relied mainly on self- or others' ratings as measures of transfer of training. In short, findings based on self- or other-report may be somewhat tenuous; hence, further research should attempt to validate findings with multiple measures of transfer as done in the present study.

Motivation to Transfer

Hypothesis 1 posited that subjects' motivation to transfer would be positively related to their subsequent transfer. The results of the current study failed to support this hypothesis, as only one of the four relationships representing this hypothesis was marginally significant. This is somewhat surprising given the favorable findings of past research when using expectancy theory-based motivation scales to predict training learning. One of the reasons that subjects' motivation was not related to their transfer of training skills may be explained by the time period of the measurement of the motivation construct. Specifically, subjects' motivation was measured at one point in time: immediately following the training program. The transfer measures, by contrast, were gathered anywhere from four to six weeks following the training program. It may be that subjects' motivation decreased over time, leading to lower assessed transfer. Even those individuals who were highly motivated to transfer may have encountered factors such as high time demands and stress, which may have lowered their motivation to transfer the training skills. Consequently, they transferred fewer skills during the time interval between the measurements of motivation and actual transfer. This suggests that an individual's motivation level immediately prior to the demonstration a target behavior (i.e., transfer) may be a stronger predictor of the behavior than the individual's level of motivation several weeks prior. Because the

current study only measured motivation to transfer at one point in time, this explanation should be considered in future research. As discussed below, the measurement of motivation at only one point in time is a limitation of the current study and should be addressed in future research.

On the other hand, it may be that motivation did not strongly predict transfer simply because of other constraints in the work environment. That is, work environment factors such as increased time constraints, increased task demands, etc., may have hindered individuals from transferring their skills, irrespective of their motivation to transfer. Thus, even if an individual was highly motivated to transfer his or her skills and remained so throughout the time interval between the measurements of motivation and actual transfer, increased demands placed on the individual may have hindered his or her efforts to use the trained skills. Another possible explanation for the lack of findings centers around the performance appraisal rater training used in the current study, in that despite possessing the motivation to transfer their rating skills, subjects may not have done so out of fear of political or interpersonal repercussions of rating their teammates accurately (cf., Longenecker, Sims, & Gioia, 1987). Again, future research is needed to assess the degree to which various constraints affect training transfer above and beyond the effects of trainee motivation to transfer. In sum, despite the unfavorable findings in the present study, much more research is needed in order to thoroughly assess the relationship between motivation and transfer.

Work Environment Factors Related to Transfer of Training

It was hypothesized that the amount of peer support subjects' experienced would be related to subjects' transfer of training skills

(Hypothesis 5). The amount of "experienced" peer support was found to be negatively related to subjects' rating effects, contrary to the hypothesis. To gain more insight into this finding, post-hoc analyses were conducted by separating the halo and range restriction measures and reanalyzing the structural model with both measures loaded as single-item constructs. The results indicated that experienced peer support affected both measures similarly (range restriction: $\gamma = -.51$, $t = -4.95$, $p < .05$; halo: $\gamma = -.48$, $t = -4.69$, $p < .05$). Thus, subjects who experienced more support from their peers demonstrated more halo and range restriction in their performance ratings of those same peers. Possibly, this finding may be explained by an interaction of the peer appraisal system and the performance appraisal-related training content/transfer measures that were used in the current study. Specifically, much research evidence demonstrates that the practice of performance appraisal is often accompanied by motivational factors which tend to blur the accuracy of performance ratings (cf., Bernardin & Beatty, 1984). In particular, researchers have demonstrated that raters tend to show more rating errors and inflated ratings when rating individuals with whom they have positive interpersonal affect or liking (see Cardy & Dobbins, 1994, for a review). This is commonly referred to as liking bias in the performance appraisal literature. Applied to the current study, and in particular to the finding that experienced peer support resulted in more halo and range restriction, this line of speculation suggests that subjects who experienced more peer support may have had more positive interpersonal affect with their peers compared to subjects who received lower peer support. In this sense, the experienced peer support scale may have been acting as a surrogate measure for liking. This reasoning calls into question whether one's

peers actually showed more support, or whether one's peers were rated as having shown more support simply because of friendship perceptions. Regardless of the actual causal mechanism, however, the influence of liking on the relationship between experienced peer support and the rating effects measure is a potential concern.

Because subjects were potentially more friendly with the peers who showed support, they may have been more motivated to rate their peers on global impressions of performance, thus resulting in more halo and range restriction. To the extent that experienced peer support was a reflection of liking bias, then, based on previous research, one would also expect that experienced peer support would also result in higher performance ratings. Zero-order correlations between the experienced peer support measure and the six performance dimensions used in the peer rating system were computed to assess this possibility. Indeed, as can be seen in Table C.7 in Appendix C, experienced peer support was positively and significantly related to every performance dimension, indicating that subjects who experienced greater support from their peers provided higher ratings for those peers on each of the six performance dimensions ($r = .36$). This is further evidence that a liking bias may have affected the relationship in question. However, it is very important to note that while the post-hoc analyses do indicate the potential for liking bias, because liking was not directly measured, definitive conclusions regarding the effect liking bias on the observed relationship in question cannot be reached.

On the other hand, it is also a possibility that those peers who showed support may have received higher overall ratings and more halo simply because they were better performers. This point is related to the controversy over whether rating effects such as halo and range

restriction represent "error," or in fact represent "truth" (discussed below). Indeed, it is fairly easy to see how a peer who showed support for using training skills by providing encouragement, using the skills him or herself, and providing reinforcement would receive higher performance ratings on such performance dimensions as Interpersonal Sensitivity, Teamwork, and Effort and Participation. By providing support, peers are in some respects performing better with regard to these performance dimensions. Thus, there may be some aspect of "truth" in the rating effects observed in the current study.

To resolve these issues, future research should incorporate a measure of liking in addition to peer support to determine whether the measures are in fact tapping nomologically-similar constructs. Including a measure of liking would also help better determine whether effects such as those observed in the present study represent rating errors or true performance-related effects. Moreover, researchers may wish to consider measuring the amount of support demonstrated separately for each peer, rather than for peers "as a whole," as was done in the current study (e.g., "My team members reinforced me for using the new skills I learned in training."). By assessing peer support at the individual level, researchers would be able to relate the peer support measure to measures of halo and inflation separately for each individual, allowing for a more precise assessment of the peer support to halo and leniency relationship.

Hypothesis 9 predicted that the extent to which subjects experienced accountability for using their skills would be positively associated with their transfer of those skills. This hypothesis was partially confirmed, as experienced accountability was related to two of the transfer measures: self-report transfer ($\gamma = .64$, $t = 5.90$, $p <$

.05), and rating effects ($\gamma = .29$, $t = 2.60$, $p < .05$). To provide further insight into the latter finding, the separate relationships between experienced accountability and range restriction, and experienced accountability and halo, were examined from the results of the structural model analyses described above where halo and range restriction were loaded as single-item constructs. The results indicated that experienced accountability affected subjects' range restriction ($\gamma = .33$, $t = 3.15$, $p < .05$) to a higher degree than it did their halo ($\gamma = .21$, $t = 2.04$, $p < .05$). As outlined earlier, there were several factors in the study context which may have served to induce subjects' accountability perceptions. Throughout the time interval between the administration of the training program and the gathering of the transfer measures, additional factors, such as continued communication regarding the importance of the peer appraisal system and discussion with fellow students (not necessarily in the same team) could have furthered perceptions of accountability for using their rating skills. Those subjects who experienced more accountability also reported that they transferred their skills to a greater extent and also showed fewer rating effects in their performance ratings. As described earlier, subjects experiencing higher accountability may have transferred their skills in order to match their behavior with other's expectations (cf., Klimoski & Inks, 1990).

On the other hand, it is also possible that subjects' experienced accountability affected transfer of training indirectly via its direct effect on their subsequent motivation to transfer immediately prior to making their performance ratings. More specifically, subjects who experienced more accountability throughout the rating period (i.e., time

between the training program and point at which subjects' made their performance ratings) may have become more motivated to use their skills, which then may have resulted in greater transfer. As discussed below, motivation to transfer was assessed at only one point in time in the current study, and thus the possibility that subjects' motivation could change throughout the rating period was not taken into account. Therefore, this potential explanation for the effect of experienced accountability on transfer is purely speculative in nature. Nevertheless, given that expected accountability affected subjects' initial motivation to transfer, it is also possible that experienced accountability affected subjects' motivation to transfer immediately prior to making their performance ratings. Future research should examine this possibility.

Summary

In summary, subjects in the current study displayed moderate levels of motivation to transfer. Further, of the two individual and three work environment factors proposed to affect motivation to transfer, subjects' self-efficacy, expected accountability, and expected peer support were significantly related to motivation to transfer. As a group, subjects reported that they had transferred their skills to a moderately high extent, as did their peers. However, the behaviorally-based measures of transfer (i.e., behavioral specificity and rating effects) indicated that subjects showed only marginal transfer of their training skills. Subjects' motivation to transfer was minimally related to their subsequent transfer of training. Experienced accountability was positively related to two indicators of training transfer (rating effects and self-report), whereas experienced peer support was negatively related to rating effects.

Study Limitations

There are several limitations to the current study that need to be addressed. These limitations involve the validity of the self-efficacy construct, the operationalization of the expectancy theory-based motivation to transfer measure, the conceptualization of training transfer, the measurement of transfer, the static and indirect nature of the motivation to transfer measure, the measurement of rating effects, potential construct overlap, the context of the training program, the revisions made to the measurement model, the participation rate of the study sample, and the generalizability of the findings. Each of these are briefly discussed below.

Validity of Self-efficacy Construct

Self-efficacy refers to an individual's belief in his or her ability to successfully complete a task (Bandura, 1977, 1982; Gist, 1987). Researchers have suggested that an individual's perceptions of self-efficacy regarding a task are most accurate when they are based upon past experience with the task (Gist & Mitchell, 1992). Conversely, when individuals have had minimal experience with a task, their responses to self-efficacy items may reflect a more general construct, such as generalized self-efficacy or self-esteem. In the current study, 63 subjects (46.7%) indicated that they had rated someone's performance in a work setting, whereas 72 (53.3%) had no such experience (1 subject failed to respond to the item). This suggests that the 63 individual who had prior performance rating experience may have been able to accurately judge their performance rating self-efficacy, whereas those individuals with no rating experience may have been allowing their self-esteem or generalized self-efficacy to influence their responses to the performance rating self-efficacy items. To the extent this is the case,

then the self-efficacy variable used in the current study may have been tapping different constructs depending on the prior rating experience of the subjects.

To provide some investigation into this potential confound, post-hoc analyses were conducted to determine whether prior rating experience affected the relationship between self-efficacy and motivation to transfer. In the first analysis, a t-test was conducted on the mean self-efficacy scores for the two groups (i.e., with and without rating experience) to determine whether the average level of self-efficacy varied as a function of whether subjects had prior performance rating experience. The second analysis used hierarchical multiple regression (Cohen & Cohen, 1983) to test whether prior rating experience (dummy-coded 0 = "Yes"; 1 = "No") moderated the relationship between self-efficacy and motivation to transfer. For both analyses, the results were not significant. Specifically, regarding the t-test, the mean self-efficacy score for the individuals with prior rating experience was very similar to the average self-efficacy score for the individuals without prior rating experience ($\bar{M} = 8.05$ and $\bar{M} = 8.11$, respectively; 1 = "No Confidence" to 10 = "Total Confidence"). Regarding the regression analysis, the interaction term composed of the product of subjects' self-efficacy score multiplied by the dummy-coded prior rating experience variable failed to account for unique variation in the prediction of motivation to transfer ($\Delta R = .00$, $p = .79$). Thus, prior rating experience showed no moderating effect between self-efficacy and motivation to transfer. Taken together, the post-hoc analyses suggest that subjects' prior rating experience had little effect on the observed levels of self-efficacy or on the self-efficacy and motivation to transfer relationship. Nonetheless, despite these favorable results,

the limitation involving the self-efficacy variable is really a question of construct validity, and as such, cannot be fully addressed by this lone study. Even though the observed self-efficacy scores were similar for those with and those without prior rating experience, it is still entirely possible that subjects from the two groups differed in their conceptualization the self-efficacy variable. Further research is needed to determine whether the self-efficacy construct varies as a function of previous task experience.

Operationalization of Expectancy Theory-based Motivation Measure

As stated earlier, the decision to use the expectancy theory framework to measure motivation to transfer in the current study was based on both theoretical issues and favorable past research using similar scales in training effectiveness research. The operationalization of the expectancy theory-based motivation measure does, however, present some limitations and concerns that should be considered when interpreting the results of the current study. Limitations of the current study involving the motivation measure correspond to several concerns articulated by Mitchell (1974), who reviewed the operationalization of expectancy theory measures and concluded that several discrepancies exist between the measurement of expectancy theory and the original tenets of expectancy theory. These discrepancies, as they apply to the current study, are briefly reviewed below.

First, Mitchell (1974) outlined that expectancy theory was originally formulated to make within person rather than between person predictions. Specifically, expectancy theory states that people, when deciding whether to act out a behavior, choose from among several alternative behaviors the one with the strongest motivating force.

Applied to the current study, this would suggest that whether subjects choose to use their ratings skills in the manner stressed by the rater training program depends on whether this potential behavior received the highest force among other alternative behaviors (e.g., not using skills; using skills to retaliate). Mitchell argued that to provide a theoretically-accurate test of the theory, researchers should employ a within-subjects design. However, the current study used a between-subjects design to test whether a given level of motivation resulted in a corresponding level of training transfer. Thus, the expectancy theory-based measure of motivation used in the current study does not totally represent the original tenets of expectancy theory. Nevertheless, some research evidence exists to suggest that expectancy theory still has predictive power when extrapolated to between-subjects designs (Mathieu et al., 1992; Pritchard & Sanders, 1973; Tannenbaum et al., 1991). Thus, the degree to which this discrepancy between the theory and its operationalization attenuates relationships between motivation and performance may not be serious.

A second concern outlined by Mitchell (1974) involves the generation of potential outcomes measures used to assess expectancy theory-based motivation. As originally articulated by Vroom (1964), expectancy theory suggests that outcomes should be generated separately by each individual. However, much research, including the current study, has used lists of outcomes generated primarily by the experimenter. The current study attempted to partially address this issue by having the faculty supervisor of the MBA peer performance appraisal system review the potential outcomes to ensure their applicability to the MBA student sample. Nevertheless, the use of experimenter-generated outcome lists increases the chance that some

important outcomes may not be included. Thus, this practice should be considered a limitation to the accurate measurement of motivation in the current study. However, Mitchell pointed out that using standard outcomes across subjects is more empirically practical in that it allows for generalization and aggregation across subjects in addition to saving time and decreasing the complexity of assessing motivation. Future studies might consider using subject matter experts to generate initial lists of outcomes which can be pilot-tested with sample target populations to arrive at overall standard lists of outcomes for further empirical research. Additionally, future research is needed to determine the effects that experimenter-generated outcomes rather than subject-generated outcomes has on the motivation to performance relationship.

A third concern relevant to the current study involves the measurement of expectancy theory components. Specifically, the original theory states that perceived instrumentalities and valences should range from positive to negative values. However, the current study, along with many others, measured these variables with Likert-type scales contained all positive numerical points (e.g., responses ranging from 1 to 5). This should be viewed as a potential limitation to the current study, in that the use of different scales may result in different motivation scores in extreme cases. Future research is needed to determine whether the different scaling methods produce different validity coefficients between motivation and performance.

Finally, consistent with expectancy theory procedures, the scales used to measure motivation to transfer were multiplied in the current study to form overall motivation scores. However, Mitchell (1974) pointed out that multiplying the component terms of expectancy theory

assumes that the scales used to measure these components are ratio in nature. This is rarely, if ever, the case in the measurement of psychological constructs. As a result, multiplying scales that are not ratio in nature may not provide a precise estimate of an individual's motivation. Despite Hackman and Porter's (1968) claim that multiplying scales can still be useful for determining the relationships between motivation and variables of interest, it is recognized that multiplying the expectancy theory-based scales may present a limitation to the accuracy of the motivation measure.

Conceptualization of Transfer

Another limitation to the current study centers around the conceptualization of training transfer. As articulated by Baldwin and Ford (1988), training transfer is a function of both generalization and maintenance of training content. That is, positive transfer of training occurs when learned skills, knowledge, or attitudes are generalized to the job and maintained over time. In this study, transfer was measured at one point in time, thus assessing only the generalization of trained material to the work context. Consequently, the extent to which the trained skills are maintained over time is unknown. Future research should, whenever possible, gather outcome measures over multiple time periods in order to assess transfer of training. It may be that the factors which affect the generalization of skills are not the same factors that affect the maintenance of those skills. For example, changing technology, new rules and regulations, and work role adjustments could affect whether or not trained skills that were initially generalized are maintained over time. Thus, both components of transfer need to be collected in order to gain a more accurate and comprehensive view of the training transfer process.

Measurement of Transfer

The current study attempted to include a broad range of measures of skill transfer, including behaviorally-based (i.e., behavioral specificity; rating effects) and percept-based measures (self-report; peer-report). This was done in an attempt to adequately assess the types of skills that were taught in the rater training program. Nonetheless, it is likely that other important measures of transfer were not gathered. While it may not have been feasible to collect these measures in the current study given time and resource constraints, it is important to recognize that some important variables may have been overlooked. Such variables could include (1) the amount of time each subject spent documenting performance, making ratings, and providing feedback; (2) the frequency with which the individual documented behaviors; and (3) the number of times the subject engaged in verbal feedback. It is possible that by not fully capturing the broad spectrum of transfer, some important relationships were omitted. Therefore, future research efforts should make every attempt to gather transfer measures that adequately represent the entire domain of the training content.

Further, because a relatively large number skills were taught in the training program, it is possible that some of the transfer measures used in the study did not fully capture the entire realm of skills that could potentially be transferred. For example, the rating effects measure at best only captured a small portion of what subjects were expected to transfer. For this reason, the self-report and peer-report measures were constructed to capture the broad range of skills that could be transferred. However, by attempting to measuring the complete set of training skills in only a limited number of items, it is likely

that (1) some important skills were unmeasured, and (2) certain individual items from these scales were actually measuring multiple aspects of training transfer. This may limit the validity of these scales, and as such the results should be viewed tenuously as further refinement of the scales may be needed in future research.

Static and Indirect Nature of the Motivation to Transfer Construct

It was noted earlier that the time interval between the measurement of subjects' motivation and subsequent transfer may have affected the results of the observed relationships between these variables. This points to a limitation regarding the measurement of motivation in the current study (aside from those limitations dealing specifically with the expectancy theory operationalization described earlier). Individual motivation is a dynamic phenomenon, in that it adapts and changes according to an individual's experiences. New experiences and information can be incorporated into a person's beliefs and attitudes, and these in turn can affect the individual's expectancies and motivation. Thus, an individual's motivation can change over time. However, the current study assessed motivation at only one point in time, and by doing so ignored the possibility that subjects' motivation may have changed from the time it was measured until the time that transfer measures were collected. Subjects' changing motivation, and the factors that altered it, may have had an impact on the transfer measures collected. It is important that future research view motivation as a dynamic variable and measure it at multiple time periods to investigate the factors that tend to affect changes in subjects' motivation (e.g., refresher training sessions; negative experiences with using trained skills). Further, as mentioned earlier, future research should assess subjects' motivation closer in

temporal proximity to the intended behavior to be demonstrated, as this may result in more valid estimates of the motivation and transfer relationship (cf., Mitchell, 1974).

It should also be mentioned that the measurement of motivation via expectancy theory represents an indirect assessment of an individual's desire to perform a task or behavior. Expectancy theory posits that by measuring an individual's (1) valence toward several outcomes; (2) instrumentality of performance for achieving those outcomes; and (3) expectancy that effort will lead to performance, one can arrive at an overall score for the individual's motivating force. This measurement method is indirect in that an individual is never directly asked about his or her motivation to perform a behavior. Therefore, the extent to which the expectancy theory-based motivation scales actually measure an individual's motivation may be an issue. In fact, it may be the case that higher relationships will occur between motivation and behavior if more direct measures of motivation are used (e.g., willingness to perform a behavior; intention to perform; willingness to overcome obstacles). While the initial research evidence suggests that this may not be the case (Baldwin & Karl, 1987), much more research is needed to determine the construct validity of the expectancy theory measures and the predictive validity of the expectancy theory scales beyond that of more direct measures of motivation.

Measurement of Rating Effects

Measures of halo and range restriction in subjects' performance ratings were gathered as indicators of training transfer in the current study. While these types of measures have been gathered in previous research (e.g., Tsui & Barry, 1986), there exists in the performance appraisal literature some concern over whether these rating effects

represent "error," or whether in fact these rating effects contain some accuracy or "truth" (see Murphy & Cleveland, 1991, for a review). Consider, for example, a ratee who receives the same scores for all six performance dimensions. Since there is no variation between the performance dimensions, it would be concluded that the rater of this individual was demonstrating very high halo, based on the operationalization of the measure in the current study. However, whether or not the observed halo represents "truth" or "error" depends on the ratee's actual level of performance. If the ratee performs at the exact same level on all six dimensions, then the fact that he or she received the same ratings across the dimensions is an indication that the observed halo is true, i.e., it represents true performance. On the other hand, if the individual's performance varies across the performance dimensions, then it can be concluded that the observed halo may contain some error. The same logic can be easily applied to the effect of range restriction.

Thus, it cannot be concluded whether or not the range restriction and halo observed in the current study represents true error or true performance. The ramifications of this can be seen in the explanation of the effects of experienced peer support on range restriction and halo observed in the current study. Specifically, whether or not the observed rating effects are considered error or truth leads to drastically different interpretations of the effect. By interpreting the presence of halo or range restriction as an indication of low transfer, the current study implicitly takes the position that halo and range restriction represent some degree of error. While this is somewhat problematic, it was considered more important to provide an empirical view into whether or not the skills that were taught in

training (to discriminate between performance dimensions; to not generalize based on inferences or impressions; to discriminate between ratees) were demonstrated in subjects' ratings of performance. However, it is recognized that these effects may in fact represent true performance levels, and as such, the rating effects measure should be viewed somewhat cautiously.

Potential Construct Overlap

Some of the constructs in the present study were conceptually similar, and the measurement of these constructs may present some difficulty when interpreting the results of the current study. For example, some of the original items from the expected and experienced accountability scales (items 7 and 8 from both scales) may have overlapped with items from the expected and experienced peer support scale. While these two particular items were deleted during the measurement model revision process, it is still possible that subjects' responded to both scales' items with the same frame of reference. That is, the two items in question on the accountability scale may have cued subjects into considering their expected peer support when responding to these and the other accountability items. Self-efficacy and the expectancy subscale of the expectancy theory-based motivation to transfer are also similar constructs. While there are important differences between the two constructs (i.e., self-efficacy refers to an individual's overall belief that he or she can control or perform a behavior, whereas expectancy refers to whether an individual believes performing a task will lead to increased performance), a perusal of the items leads one to question whether subjects cognitively separated the meaning of the two variables, or whether the same framework, impression, or belief influenced responses to both scales. To the extent this

occurred with these and other variables, the overall results and independent relationships observed in the present study must be viewed cautiously.

Context of the Training Program

As pointed out earlier, the type of training and transfer measures used in the current study may have had an undesired effect on the relationships observed in the current study. Specifically, several researchers have demonstrated that the practice of performance appraisal often influences rater motivational factors, such as trust in the appraisal process and liking bias (e.g., Bernardin & Beatty, 1984; Cardy & Dobbins, 1994). As such, participating in the appraisal process and making accurate ratings may not only be a function of whether one has the skills or motivation to do so. Rather, it may depend on a wide variety of factors not directly related to subjects' motivation to use their skills. Therefore, in the current study, transfer of training may have been more directly influenced by factors other than subjects' motivation to transfer or environmental factors (e.g., low trust in the appraisal process; liking bias; desire to retaliate). To the extent this is the case, then the context of the rater training program and the peer appraisal system may not have allowed for a true test of the role of individual, environmental, and motivational factors in the training transfer process. Therefore, future research examining these relationships should attempt to employ training programs whereby transfer of skills is not as susceptible to extraneous influences as may be the case for performance appraisal rater training. This suggestion is not to imply that assessing transfer of rater training is futile. Quite the contrary, future training transfer research should continue to utilize such complex organizational training programs. However, it is

recommended that future research using performance appraisal rater training gather measures of extraneous motivational biases (e.g., liking between rater and ratee; trust in the appraisal process) in order to partial out their effects on outcomes measures of interest.

Revisions to the Measurement Model

The initial measurement model did not fit the data well, and revisions involving the deletion of several items were required to improve the fit of the model to reasonable levels. This was done to enable a more accurate assessment of the path estimates between the observed variables. However, it is possible that by deleting certain items, the meaning behind the scales may have changed or the scales may have been measured less adequately. While care was taken to avoid these undesired effects, the potential for this to occur still remains. If the measurement of the latent constructs was jeopardized by deleting items, then the path estimates observed in the structural model may be biased in that they reflect relationships among arguably inadequately-measured constructs. Thus, further research is needed to validate the relationships observed in the current study.

Participation Rate

Another limitation to the current study involves the potential differences between those subjects who provided their consent to participate in the study and those subjects who did not provide their consent. As stated earlier, a total of 158 students participated in the rater training program and peer appraisal system. However, only 136 of these students provided their permission to participate as subjects in the current study. There is the possibility that there are some aspects or characteristics of the students who chose not to participate that may have influenced the relationships observed in the current study. For

example, students not providing their consent may have had more negative or more highly varied affective reactions toward the peer performance appraisal system or may have viewed the peer appraisal system as irrelevant. In either case these perceptions may have likely led to lower transfer and motivation. To the extent this occurred, then the relationships observed in the current study should be viewed somewhat cautiously.

Generalizability

As outlined in Chapter III, the sample used in the current research investigation possessed characteristics similar to those found in organizational settings. For example, the work that subjects completed as part of their academic program is similar to work done in organizations. Additionally, the peer performance appraisal system employed in this study shared some of the same requirements associated with performance appraisal systems in organizations (e.g., rater has continued contact with ratee; rater rating multiple ratees). Taken together, these similarities should increase the generalizability of the findings. Nevertheless, the fact remains that graduate students in an academic environment were used as subjects, and as such, generalizability of the findings may be limited to similar samples. Further research should therefore examine the extent to which these findings generalize to training programs in organizational settings.

Theoretical Implications

The current study was one of only a handful to examine how subjects' motivation to transfer training affects their subsequent transfer of training. The study adds to a relatively new, yet growing body of literature that is taking a more process-oriented look at assessing training effectiveness. Studies from this genre have recently

demonstrated that subjects' motivation to learn affects their learning of training material (e.g., Mathieu et al., 1992). While the current research effort demonstrated that motivation to transfer was only marginally related to one of the four measures of transfer, it may be too soon to conclude that this relationship does not exist. Future research is needed before firm conclusions can be reached.

Nevertheless, the finding that motivation to transfer was only marginally related to transfer may point to an important implication for the area of training transfer as an indicator of overall training effectiveness. Unlike past studies that have fairly consistently demonstrated that trainee motivation is related to subsequent learning of training material, the results of the current study suggest that the relationship between trainee motivation and transfer of training may not be as clear or as straightforward. Typically, the environment experienced by a trainee while he or she attends a training program is relatively controlled in that extraneous factors such as other task demands, time pressures, and social support, may not have a large impact on the trainee's performance while he or she attends the program. As such, whether the trainee learns the training material may be more a function of his or her ability and motivation. Conversely, the work environment experienced by a trainee once he or she returns to the job is much more complex than the relatively-controlled training environment. Many factors, such as those just mentioned, could influence the trainee's performance in the work environment. As such, whether the trainee transfers his or her training skills to the job may depend less on his or her ability and motivation and more on environmental factors impacting performance. Taken together, this line of reasoning suggests that the training transfer process is more complex

than the training learning process. This implies that future research on transfer needs to include measures of several environmental variables which could impact transfer to accurately assess the role of trainee motivation on subsequent transfer of training.

The current study also contributed to training effectiveness research that examines the role of work environment influences on motivation to transfer and transfer of training measures. Past research has investigated several individual components of the work environment (e.g., Fecteau et al., 1995), as well as the overall training transfer climate (e.g., Tracey et al., 1995). As was the case in the Fecteau et al. (1995) study, peer support was related to subjects' motivation to transfer. In addition to measures of advisor support and peer support, the current study examined the effects of subjects' perceived accountability and found that it significantly predicted both motivation to transfer and subsequent transfer of training. People who expected and experienced higher levels of accountability demonstrated greater motivation to transfer and higher subsequent transfer on two of the outcome measures. Given that this study and others have shown that work environment factors can be important in the training transfer process, continued research toward understanding and addressing these factors is recommended.

Related to this point, it is also suggested that future research on the environmental factors which affect transfer examine these factors from a multi-dimensional perspective, as opposed to an aggregate perspective (e.g., overall transfer climate). In the current study, only one of the three environmental variables affected the outcome variables of interest in the predicted manner. The implication of this finding is that different environmental factors may have differential

effects on transfer of training. To the extent that these factors are aggregated into overall climate variables, some difficulties may arise. Specifically, collapsing the individual environmental components (e.g., supervisor support) into overall factors, either statistically or conceptually, may mask any observed relationships between these components and the outcome measures of interest. This would then reduce the ability of researchers to diagnose and remedy the specific environmental factors that contribute to or hinder transfer of training. It is recommended that future research examine the extent to which findings differ as a result of the use of individual versus overall measures of training climate or work environmental factors.

This research investigation was one of a few to examine the simultaneous effect of individual, environmental, and motivation factors on transfer of training by using several behavioral measures of transfer. Only one study to date (Martineau, 1996) has examined the impact of motivation to transfer and situational influences on behavioral transfer. It is recognized that having subjects self-report their use of the training skills may continue to be a frequently used and an important outcome variable to consider. However, the current study demonstrated that self-report measures are not necessarily related to behavioral outcomes measures. As such, a technical/methodological implication arising from the current study is that transfer researchers should attempt to gather a broad range of transfer outcome measures in order to fully assess whether transfer has occurred. This is even more important to the extent that future transfer studies employ complex organizational training programs that teach multiple skills and behaviors. It is suggested that future transfer studies attempt to measure several outcome measures that fully represent the spectrum of

the training material. Failure to do so may limit the findings of transfer studies. Further, to the extent that future transfer research uses training programs with content that may be affected by personal opinions and biases (e.g., performance appraisal rater training; diversity training), researchers should gather subjects' opinions and attitudes regarding the training content to determine what impact they have on subjects' motivation and subsequent transfer of training.

Practical Implications

From a practical standpoint, in that both expected and experienced accountability affected subjects' motivation and subsequent transfer, organizations should take steps to increase employees' perceptions that they will be held accountable for using the skills they learn in training. For example, one method employed by DeMatteo et al. (1994) was to require that trainees report back to their managers on the content learned in training. This would seem to be a relatively simple technique for organizations to employ in order to increase transfer. Other techniques that can be used include requiring that managers meet with employees before training to discuss expectations regarding post-training performance, and having managers evaluate the employee's post-training performance on the specific skills learned in training. Applied to the performance appraisal training arena, requiring that individuals defend their ratings with behavioral information may help increase transfer of performance appraisal training. While research is needed to determine whether these factors do indeed result in greater perceived accountability, it is relatively straight-forward to assume that these factors may have a positive impact on the transfer of training process.

As indicated earlier, the finding that self-efficacy was positively related to motivation to transfer has implications for organizations. Specifically, research evidence exists to suggest that self-efficacy can be developed during a training program. For example, Gist (1989) demonstrated that cognitive modeling training combined with practice resulted in higher participant self-efficacy for innovative problem solving compared to training based on learning and practice alone. Further, Tannenbaum et al. (1991) demonstrated that positive training reactions, better performance in training, and training fulfillment all significantly predicted subjects' post-training self-efficacy. Combined with the results from the current study, this indicates that organizations wishing to improve trainee-related motivation should consider doing so by increasing trainees' self-efficacy for performing a desired task (via training techniques mentioned above). Organizations should use the results from the two studies just reviewed to identify additional methods for increasing self-efficacy, which should then result in higher motivation to transfer.

Future Research

In addition to the suggestions already offered, there are several avenues for future research in this area. First, there may be alternative ways of viewing the relationships between the variables utilized in the current study. For instance, using Ajzen's (1985, 1991) theory of planned behavior as a framework for the entire study may result in a different specification of the model. In Ajzen's terms, motivation to transfer, as measured in the current study, may be more reflective of a general attitude toward the transfer behaviors. The variables of self-efficacy and expected accountability are also very

similar to Ajzen's notion of perceived behavioral control and subjective norms, respectively. As such, they may be more directly related to behavioral transfer or willingness to transfer rather than to subjects' general attitudes toward the transfer behaviors (i.e., motivation to transfer as measured in the study). Similarly, using the results of previous research (e.g., Gist et al., 1991), one would expect a direct relationship between subjects' self-efficacy and their behavioral transfer. Future research should examine these and other potential relationships between the constructs gathered in the current study.

Second, future research should examine other training-related and environmental characteristics thought to play a role in the training transfer process. Regarding environmental variables, other types of social support (e.g., subordinate; supervisor) should be examined, as well as environmental constraints. Goldstein and Musicante (1986) outlined several training-related aspects that may affect training effectiveness measures, yet surprisingly, these have received relatively less attention in the research literature. Examples of these variables include the quality of the trainer, the length, amount, and type of training, and the nature of contact between the trainer and the trainee. Gist (1989) demonstrated that the type of training program had effects on the development of subjects' self-efficacy, and it may be the case that similar results would also occur for subjects' motivation to transfer. It is also plausible that the quality of the trainer may impact trainees' reactions, learning, and subsequent transfer of training. If trainers are not adequately skilled to properly facilitate a training session and convey important material, then understandably, trainees may have negative reactions and learn less than they would with higher quality trainers. As such, they would probably show lower levels

of motivation to transfer subsequent transfer. Future research should assess these and other potential relationships between training-related factors and transfer.

Longitudinal research is needed to investigate the factors that affect the maintenance of trained skills over time. As discussed earlier, the current study only assessed whether or not skills were generalized from training to the work context. However, Baldwin and Ford (1988) argued that the maintenance of trained skills is an important component of training transfer. It may be the case that different factors affect generalization versus maintenance of trained skills. For example, the current study demonstrated that experienced accountability was related to two of four measures of initial transfer. However, the extent to which these skills are maintained over time may depend on several other factors, such as experiences with the rating process, consequences received after using trained skills, changes in purpose of appraisals, etc. Other factors that may impact maintenance of other types of training skills include changing technology, changing work role demands, and new rules and regulations. For example, if an individual receives training on the operation of a DOS-based computer, yet 3 months later transfers to another organization that uses Macintosh computers, quite understandably, that individual will not be as likely to maintain his or her DOS-based computer skills on the new job.

Typical studies investigating training effectiveness involve the use of single samples at single settings; however, some recent research has begun to gather data from multiple organizations and samples (e.g., Clark, 1990). It is suggested that future research continue in this area. Research data that is gathered from multiple organizations should aid training effectiveness research in several ways. First, data from

multiple organizations should allow researchers to test the impact of difference organizational cultures and climates on transfer and other measures of training effectiveness. Further, to the extent that data from distinct organizations is gathered and used, this should improve the generalizability of findings from these studies. Finally, to the extent that validity coefficients and findings are similar across the organizations within a given study, then collapsing the data across organizations should help with low sample size problems occasionally encountered in training effectiveness research.

Finally, future research should also assess the extent to which the purpose and type of training affects the transfer of training process (e.g., Mathieu et al., 1992). For example, training programs that are focused on skill-building for commercial airline pilots may affect the transfer process differently than training programs focused on issues such as interpersonal skills training. In the former example, the costs of not using one's skills (e.g., airline accidents; human loss) may be so high that individuals are more motivated to transfer their skills and make greater efforts to do so, regardless of the effect of other individual or environmental variables. Research along these lines could gather measures of trainees' perceptions regarding the importance of the training, as well as measures of the consequences of failures to use the training skills, and use these measures to examine the influence of the type of training on the transfer process.

Overall Summary

In summary, the present study provided a further examination of the role of individual, environmental, and motivational factors in the transfer of training process. One overall purpose was to examine subjects' motivation to transfer and the factors that may be related to

their motivation. The results indicated that subjects' self-efficacy, expected accountability, and expected peer support were related to their motivation to transfer training skills. The second overall purpose was to examine the factors related to subsequent transfer of training skills. Motivation to transfer was marginally related to one measure of training transfer (behavioral specificity), whereas experienced accountability was related to self-reported training and subjects' rating effects. Continued research in this area should provide a better understanding of the transfer process, ultimately helping researchers and practitioners to increase the levels of training transfer that occur in organizations.

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APPENDICES

APPENDIX A

MBA PEER PERFORMANCE APPRAISAL RATING FORM

MBA Peer Rating Form

PART ONE: Performance Ratings

Directions: In the space provided below, please write the name of the individual whose performance you are rating. Then, referring to the definitions of the response alternatives on the attached page, please circle the alternative which most accurately represents that individual's performance. The response alternatives are provided below. After completing Part One, please proceed to Part II, where you will be asked to make open-ended comments about this individual.

<u>1</u> = Not at all Effective	<u>2</u> = Marginally Effective	<u>3</u> = Generally Effective
<u>4</u> = Very Effective	<u>5</u> = Extremely Effective	<u>?</u> = No Basis to Rate

Name of Individual Being Rated: _____

Rate the performance of this individual at:

Effort and Participation

- | | | | | | | |
|---|---|---|---|---|---|---|
| 1. Actively and enthusiastically participating in group activities..... | 1 | 2 | 3 | 4 | 5 | ? |
| 2. Completing assigned tasks..... | 1 | 2 | 3 | 4 | 5 | ? |
| 3. Rarely missing group meetings and work sessions..... | 1 | 2 | 3 | 4 | 5 | ? |
| 4. Devoting the effort necessary to meet group goals..... | 1 | 2 | 3 | 4 | 5 | ? |

Leading Task Accomplishments

- | | | | | | | |
|---|---|---|---|---|---|---|
| 5. Directing the group toward goal accomplishment..... | 1 | 2 | 3 | 4 | 5 | ? |
| 6. Defining problems and suggesting procedures for solving problem..... | 1 | 2 | 3 | 4 | 5 | ? |
| 7. Pulling together related ideas and offering conclusions for group to consider..... | 1 | 2 | 3 | 4 | 5 | ? |
| 8. Making an active attempt to keep group focused on task..... | 1 | 2 | 3 | 4 | 5 | ? |
| 9. Articulating a mission or "vision" for the group..... | 1 | 2 | 3 | 4 | 5 | ? |
| 10. Having large influence on group process and decisions..... | 1 | 2 | 3 | 4 | 5 | ? |

PART ONE: Performance Ratings (cont.)
--

Teamwork

- | | | | | | | |
|--|---|---|---|---|---|---|
| 11. Reconciling disagreements among group members..... | 1 | 2 | 3 | 4 | 5 | ? |
| 12. Holding group goals above individual goals..... | 1 | 2 | 3 | 4 | 5 | ? |
| 13. Working to develop positive relationships among group members..... | 1 | 2 | 3 | 4 | 5 | ? |
| 14. Encouraging participation from other group members..... | 1 | 2 | 3 | 4 | 5 | ? |

Interpersonal Sensitivity

- | | | | | | | |
|---|---|---|---|---|---|---|
| 15. Acknowledging valid points made by other group members..... | 1 | 2 | 3 | 4 | 5 | ? |
| 16. Showing empathy and concern for the needs and feelings of others..... | 1 | 2 | 3 | 4 | 5 | ? |
| 17. Actively listening to others and considering their ideas..... | 1 | 2 | 3 | 4 | 5 | ? |
| 18. Providing recognition for positive performance..... | 1 | 2 | 3 | 4 | 5 | ? |
| 19. Using a polite, congenial tone when speaking with others..... | 1 | 2 | 3 | 4 | 5 | ? |

Intellectual Contribution

- | | | | | | | |
|--|---|---|---|---|---|---|
| 20. Contributing intellectually sound thinking to the group..... | 1 | 2 | 3 | 4 | 5 | ? |
| 21. Integrating own and others' ideas into a logical framework..... | 1 | 2 | 3 | 4 | 5 | ? |
| 22. Offering creative solutions and ideas..... | 1 | 2 | 3 | 4 | 5 | ? |
| 23. Correctly identifying the basic issues and problems with group projects..... | 1 | 2 | 3 | 4 | 5 | ? |
| 24. Identifying key priorities and relationships within group tasks..... | 1 | 2 | 3 | 4 | 5 | ? |

Judgment/Decision Making

- | | | | | | | |
|--|---|---|---|---|---|---|
| 25. Providing reasoning behind decisions and suggestions..... | 1 | 2 | 3 | 4 | 5 | ? |
| 26. Considering and offering alternative courses of action..... | 1 | 2 | 3 | 4 | 5 | ? |
| 27. Considering the implications of proposed actions before reaching a conclusion..... | 1 | 2 | 3 | 4 | 5 | ? |
| 28. Making logical decisions and recommendations..... | 1 | 2 | 3 | 4 | 5 | ? |

PART TWO: Open-Ended Comments

Directions: Several open-ended questions are presented below. Please type in below any comments that you believe would substantiate your performance ratings, provide helpful developmental feedback for the individual, and/or help the faculty understand the true contribution made to the group by the individual.

Name of Individual Being Rated: _____

Please provide comments on this individual's:

Strengths

Areas for Improvement

Please provide any comments you would like to add concerning other areas of group performance or the individual's overall contribution to the group.

APPENDIX B
TRAINING LEARNING MEASURE

Training Evaluation

The following questions assess your grasp of the material presented in the training program. Please make sure that you respond to each item carefully, as your responses will be used to evaluate the effectiveness of the training program. Your responses will remain completely confidential; no one other than the trainer will see them.

Part One: Presented below are several statements similar to those you would expect to document in your performance diaries. Please read each statement and indicate whether you believe the statement represents a behavior or an inference by circling the appropriate response.

1. In today's team meeting, on three occasions Jack asked the group members if they "had any more questions or concerns" before the group moved on to a new topic..... **B** **I**
2. Vicki showed up to every team meeting with a poor attitude and a huge chip on her shoulder..... **B** **I**
3. Stan was never very sensitive to any of the group members. In fact, he was downright mean..... **B** **I**
4. When the group was unable to solve the problem, Hillary stood up and asked, "Are we sure we're looking at this the right way?" She then suggested three other ways that the group could approach the problem (e.g., "Let's look at it from the perspective of the customer")..... **B** **I**

Part Two: Please read each of the following behavioral scenarios and match each scenario with the most appropriate performance dimension. Respond by writing the performance dimension's abbreviation (enclosed in parentheses) in the space to the left of each scenario. Remember, although the scenario may match more than one dimension, choose the one performance dimension which BEST represents the scenario. The list of performance dimensions is presented below.

Effort and Participation (E&P)	Interpersonal Sensitivity (IS)
Leading Task Accomplishments (LTA)	Intellectual Contribution (IC)
Teamwork (TW)	Judgment/Decision Making (JDM)

- _____ 5. Daniel missed three out of five meetings his team held the previous week. In addition, he remained quiet throughout the two meetings. For example, he only spoke up twice during the last meeting.
- _____ 6. Toward the end of the meeting, Lee took all the ideas and combined them into three overall categories: customer concerns; production concerns, and employee concerns.
- _____ 7. Whenever anyone from the group made a comment, Gloria would tell that person they had a good idea. Further, when the group heard that their project received positive comments from the faculty, Gloria was the first to go around and congratulate the other group members.
- _____ 8. Edith provided the reasoning behind her suggestion that the group not try to solve all the problems in one meeting.
- _____ 9. When John and Tammy began discussing last Saturday's football game, Mick turned to them and stated, "Maybe we all can continue this conversation after the meeting, but right now we've got to finish this project."

Part Three: Please read each of the following descriptions and decide which of the errors and effects we discussed in the training program best matches the description. Please make your response by writing in your answer in the space provided.

Central Tendency Severity Leniency Halo Similarity Contrast Primacy Recency

_____ 10. This is the rating effect where a rater overweights performance information which occurred at the beginning of the rating period.

_____ 11. This is the rating effect where an individual rates others in comparison to him or herself.

_____ 12.

Dimension A:

"True" Performance

1	2	(3)	4	5
1	2	3	(4)	5
1	(2)	3	4	5
1	(2)	3	4	5

Observed Ratings

1	2	(3)	4	5
1	2	(3)	4	5
1	2	(3)	4	5
1	2	(3)	4	5

Dimension B:

"True" Performance

1	(2)	3	4	5
1	2	3	(4)	5
1	2	(3)	4	5
1	2	(3)	4	5

Observed Ratings

1	2	(3)	4	5
1	2	(3)	4	5
1	2	(3)	4	5
1	2	(3)	4	5

_____ 13.

Dimension A:

"True" Performance

1	2	(3)	4	5
1	2	3	(4)	5
1	2	3	(4)	5
1	2	(3)	4	5

Observed Ratings

(1)	2	3	4	5
1	(2)	3	4	5
1	(2)	3	4	5
(1)	2	3	4	5

Dimension B:

"True" Performance

1	2	(3)	4	5
1	2	(3)	4	5
1	2	3	(4)	5
1	2	3	(4)	5

Observed Ratings

(1)	2	3	4	5
(1)	2	3	4	5
1	(2)	3	4	5
1	(2)	3	4	5

Part Four: Please read each of the following questions and write in your answers in the space provided.

List three of the five techniques we discussed for "Communicating a feedback message" (Not necessarily the content of the message - the delivery).

List two reasons why behaviors should be emphasized rather than inferences when providing performance evaluations and verbal feedback.

List two tips or techniques for insuring the accurate documentation of observable behaviors.

APPENDIX C

ADDITIONAL DESCRIPTIVE AND CORRELATIONAL ANALYSES

Table C.1. Descriptive statistics for halo and range restriction.

Variable	Number of Items	M	SD	Observed Minimum	Observed Maximum	Possible Range of Values
1. Halo	1	.43	.14	.00	.86	0 - 2.19
2. Range Restriction	1	.51	.22	.12	1.37	0 - 2.31

Table C.2. Descriptive statistics for the MBA Performance Appraisal skill dimensions.

Skill Dimension	Number of Items	Mean Sum	SD	Observed Minimum	Observed Maximum	Possible Range of Values
Effort and Participation	4	4.09	.49	2.81	5.00	1 - 5
Leading Task Accomplishments	6	3.62	.48	2.50	4.75	1 - 5
Teamwork	4	3.59	.50	2.19	4.85	1 - 5
Interpersonal Sensitivity	5	3.86	.47	2.45	4.90	1 - 5
Intellectual Contribution	5	3.81	.48	2.15	4.85	1 - 5
Judgment and Decision Making	4	3.80	.51	2.13	4.95	1 - 5

Table C.3. Zero-order correlations and reliability estimates for the MBA Performance Appraisal skill dimensions.

Skill Dimension	1	2	3	4	5	6
Effort and Participation	(.93)					
Leading Task Accomplishments	.75	(.93)				
Teamwork	.76	.81	(.89)			
Interpersonal Sensitivity	.72	.71	.83	(.91)		
Intellectual Contribution	.78	.88	.77	.77	(.94)	
Judgment and Decision Making	.73	.85	.76	.78	.89	(.93)

Note. All correlations significant at $p < .01$. Values in parentheses represent reliability estimates using Cronbach's alpha.

Table C.4. Descriptive statistics for the expectancy, instrumentality, and valence subscales of the motivation to transfer measure.

Variable	Number of Items	M	SD	Observed Minimum	Observed Maximum	Possible Range of Values
1. Expectancy	6	4.03	.58	1.50	5.00	1 - 5
2. Instrumentality	12	3.77	.45	1.75	4.75	1 - 5
3. Valence	12	4.35	.40	1.75	5.00	1 - 5

Table C.5. Zero-order correlations among the expectancy, instrumentality, and valence subscales of the motivation to transfer measure.

Variable	1	2	3
1. Expectancy	—		
2. Instrumentality	.35	—	
3. Valence	.49	.50	—

Note. All correlations significant at $p < .01$.

Table C.6. Descriptive statistics for the four subscales of the knowledge measure.

Variable	Number of Items	Mean Sum	SD	Observed Minimum	Observed Maximum	Possible Range of Values
Part I: Behaviors vs. Inferences	4	3.91	.41	0.00	4.00	0 - 4
Part II: Performance Dimensions	5	3.91	1.07	0.00	5.00	0 - 5
Part III: Rating Effects	4	3.60	.83	0.00	4.00	0 - 4
Part IV: Open-ended	3	4.27	1.58	0.00	7.00	0 - 7

Table C.7. Zero-order correlations between experienced peer support and the MBA performance dimensions.

Performance Dimension	Experienced Peer Support
Effort and Participation	.30
Leading Task Accomplishments	.37
Teamwork	.41
Interpersonal Sensitivity	.36
Intellectual Contribution	.36
Judgment and Decision Making	.33

Note. All correlations significant at $p < .01$.

VITA

Mark L. Poteet was born in Portsmouth, Virginia, on December 23, 1967, at the Portsmouth Naval Hospital. He lived his first 18 years in Suffolk, Virginia, where he attended public school. He graduated from Suffolk High School in 1986, where he lettered in several sports, was nominated for the McDonald's High School All-American Band, and was a horribly ineffective Junior Class President.

Mark moved to Knoxville, TN, in August, 1986, and entered the University of Tennessee as an undergraduate with dreams of being an Electrical Engineer. Those dreams soon faded, however, after one quarter of low grades and low motivation. He transferred to the College of Liberal Arts and pursued a degree in Psychology, a subject which he found immensely more enjoyable. During his undergraduate career he worked on a research project with Dr. Greg Dobbins, who provided him with his first introduction into the world of Industrial/Organizational Psychology. He graduated Phi Beta Kappa with a Bachelor's degree in Psychology in 1990, and upon the persuasion of Dr. Dobbins, entered the Industrial/Organizational Psychology doctoral program at the University of Tennessee in the Fall of 1990.

While a doctoral student he worked on various research and applied projects with the Tennessee State Government, Tennessee Valley Authority, Tennessee Assessment Center, University of Tennessee Management Development Center, and University of Tennessee Master of Business Administration program. He also worked full-time with the Human Resources Research and Development Staff at the Tennessee Valley Authority for 1.75 years. Additionally, he has published and presented several research articles. He received his Ph.D. in

Industrial/Organizational Psychology from the University of Tennessee in August, 1996.

In March of 1996 he married Tammy D. Allen, also a Ph.D. in Industrial/Organizational Psychology, and inherited a wonderful stepson, Ethan Sitver. Together, they reside in the Tampa, Florida area, where Tammy is an Assistant Professor in the Industrial/Organizational Psychology program at the University of South Florida, and Mark is pursuing a consulting career that will offer him the opportunity to continue his research endeavors. Mark's non-work interests include golf, cycling, composing music, playing tennis with Tammy, and playing baseball and soccer with Ethan.