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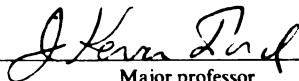
CREATING A PSYCHOLOGICAL STATES INTERVENTION

presented by

Daniel A. Weissbein

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Psychology


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**IMPROVING TRAINING EFFECTIVENESS THROUGH MOTIVATION:
CREATING A PSYCHOLOGICAL STATES INTERVENTION**

By

Daniel A. Weissbein

A DISSERTATION

**Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of**

DOCTOR OF PHILOSOPHY

Department of Psychology

2000

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ABSTRACT

IMPROVING TRAINING EFFECTIVENESS THROUGH MOTIVATION: CREATING A PSYCHOLOGICAL STATES INTERVENTION

By

Daniel A. Weissbein

This dissertation reviews the literature regarding influences on training motivation. It is concluded that the stable individual differences (traits) examined in the literature likely have state analogs that can be manipulated to improve training motivation and thus learning and transfer. A complex intervention that may be used before or after training was designed based on social, clinical and educational psychological literatures. A model of the intervention's influences and hypotheses were offered. The intervention and hypotheses were tested on 119 undergraduate participants in a negotiation training program. Regression and ANOVA analysis results indicated that the intervention was successful at influencing attributions over and above participant traits, particularly when used before training. These attributions and state performance orientation were related to training motivation. Motivation led to greater preparation, which related to better transfer performance. Implications and directions for future research are discussed.

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For Rose Seigel. In loving memory of Sarah, Si, Anna, Jack, Ellie, and Bill.

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When I was first introduced to him as his new Teacher's Assistant back August of 1994, Kevin Ford had this to say, "Oh, good, I have some work for you to do." He did indeed. Since that auspicious (if role-making) start, Kevin has become a mentor, friend, inspiration, teacher, boss, co-author, and basketball compatriot. In the world of academics, it is not every student who can say about their mentor that they not only admire them, they genuinely like them. I am, in that regard, one of the lucky ones. In my time here he has taught me a great deal both in and out of the classroom. In addition, he has provided me with endlessly patient encouragement and support -- both moral and financial. To say something trite like "I couldn't have done it without him" is not only obvious but insufficient. Thank you for all you have done, Kevin. I sincerely appreciate it. And thanks to Melanie and the rest of the Ford clan for always making me feel like a member of the extended family.

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Montclair, Murphy, Bun, Casper, Griz, and Gatsby. Sorry for all the time this took away from the attention you so richly deserve.

Finally, thanks to the New York Giants and MSU Spartan teams for providing me a diversion on weekends. It's nice to see that in my time here the Giants have remained consistent (if poor), but the Spartans have improved tremendously. Let's hope all of our futures hold big things.

DW

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INTRODUCTION

More than ever, effective training is being viewed as critical to organizational success. Changes in the workplace such as increases in technology, the arrival of the information age, and increased influence and competition from international markets has led organizations to rely increasingly on their ability to train employees on an ongoing basis to maintain the necessary levels of knowledge, skill, and performance (Goldstein & Gilliam, 1990). Indeed, many organizations now view training as a way to gain a competitive advantage (Rosow & Zager, 1988). Organizations are expecting individuals to learn and share their learning with others as part of creating a learning organization (Senge, 1990). With organizations in the United States spending an estimated \$50 - \$60 billion dollars on training, (ASTD, 1998) it is important that this training be successful both in the sense that trainees learn the necessary knowledge and skills, and that this learning be transferred to the job environment. However, estimates regarding the ultimate effectiveness of training efforts are rather bleak. Some suggest that not more than 10% of expenditures on training actually result in transfer to the job (Georgenson, 1982).

One of the ways in which training researchers have begun to understand and improve this situation is by taking a broader perspective on factors affecting training effectiveness. While initial training research tended to focus on training design as the way to improve training effectiveness (Baldwin & Ford, 1988), over the past 15 years, training researchers have begun to examine a number of other influences on training effectiveness. Some of this research focuses on the organizational context in which the training take place to better understand how to make training effective, such as pretraining context (Baldwin & Majguka, 1997; Quinones, 1997), situational constraints

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(Mathieu, Tannenbaum, & Salas, 1992), or opportunity to perform (Ford, Quinones, Sego, & Sorra, 1992).

Other research has focused on the trainee as an important factor in training effectiveness. Noe (1986) was one of the first to examine trainee attributes as important factors for training effectiveness. Noe highlights the importance of trainee motivation both before training (motivation to learn) and after training (motivation to transfer) as a determinant of training effectiveness and examines individual attributes which may impact training motivation. Since this initial work, a number of other researchers have identified and examined individual characteristics which may have an effect on the individual's level of training motivation, such as a trainee's ability, personality characteristics, and work related attitudes (Mathieu & Martineau, 1997).

To date, the literature has tended to view the learner as fairly static as they enter training with respect to motivation. That is, the types of variables that have been identified are individual differences such as personality characteristics, or broad work or career related attitudes, assumed to be relatively stable.

My dissertation views the trainee as a more dynamic entity. I suggest that while the pretraining literature has identified person variables important to training motivation, it is possible to view the learner as more open to influence on many of these variables. Although personality factors are generally considered stable traits, for many such characteristics, there exist malleable analogs, or psychological states (Chaplin, John, & Goldberg, 1988; Mischel, 1968). These states are by definition malleable, and susceptible to influence. It is possible, therefore, to use the types of individual difference variables identified as important for training motivation in the training literature to

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formulate an intervention. This intervention would be designed to influence the corresponding psychological states in order to improve trainees' motivation to learn and motivation to transfer.

The purpose of this study is to design and test an intervention to impact psychological states to improve pretraining and posttraining motivation, and subsequently training effectiveness. A model is derived suggesting how such an intervention can be used before training to impact motivation to learn, after training to influence motivation to transfer, or both, to improve training effectiveness. In the sections that follow, the literature on training motivation is reviewed. Next, literature on relevant psychological states and how they may be influenced through intervention is examined. Finally, the model and hypotheses regarding how such an intervention may affect training effectiveness is offered.

Training Motivation and Training Effectiveness

Training effectiveness is the result of the learning that takes place during training, and the transfer of this learning from the learning context to the novel job context. Initial attempts in the 1950s to improve transfer of training came from improvement in training design (Baldwin & Ford, 1988). Consistent with the zeitgeist and paradigms in place, early work on improving training effectiveness tended to take a behavioristic, stimulus response perspective. The idea was that if training design stimuli could be improved, increased learning would take place, and the assumption was that this would result in better transfer. Traditional concepts to improve transfer include using identical elements, conditions of practice, and overlearning (Baldwin & Ford, 1988; McGehee & Thayer, 1961). Although some benefits to training effectiveness came out of this work, it was

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fairly limited in viewing the learner as a passive recipient of knowledge and skills. With the recognition of the learner as more than a passive recipient of training, increased attention has been paid to the role of motivation in affecting training effectiveness (e.g. Noe, 1986; Baldwin & Ford, 1988; Kraiger, Ford, & Salas, 1993).

Instructional design researchers recognized that the learner's motivation is critical to training success. Instruction design researchers, therefore, have recognized and explicitly included motivation as an important part of instruction. For example, Gagne and colleagues (Gagne, Briggs, & Wager, 1992) have included gaining a learners attention as the first step in the sequence of instructional events. Techniques such as appealing to the interests of the learner are used to accomplish this. Gaining attention is viewed as critical to determining the extent and nature of the reception of incoming training stimuli. Informing the learner of the objectives is considered the second step in instructional design, which allows for executive control necessary to keep the learner on track and allow them to self-regulate around their goal to maintain what some have called "proximal" motivation (Kanfer & Ackerman, 1989).

Still, a focus solely on the instructional process is limited. Leifer and Newstrom (1980) noticed that most attempts to improve training effectiveness focused only on the period of skill acquisition within the training process. They proposed broadening this perspective to examine strategies that focus on the periods before and after training to facilitate transfer. Industrial and Organizational Psychologists, have adopted this conception of training as a process that includes the pretraining and posttraining events (Leifer & Newstrom, 1980; Goldstein, 1991).

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Considerable theory and research has indicated that the motivation of trainees entering training, and as they leave training, is important to training effectiveness in terms of learning and transfer. Noe (1986) was one of the first to offer a model that explicitly included motivation to learn and motivation to transfer as important training effects. Baldwin and Ford (1988) presented a model of the dimensions affecting training outputs such as learning and transfer (retention, generalization, and maintenance). Their review of the literature identified several pretraining and posttraining motivational factors that may influence training effectiveness, such as trainee confidence, motivation to succeed in training, job involvement, belief in the value of training, and trainee expectancies which have all been demonstrated to impact learning and transfer.

A number of empirical studies have confirmed that a trainee's motivation before training may be important to learning and transfer. For example, Ryman and Biersner (1975) have found that pretraining motivation predicted eventual graduation from a naval diving training program. Fecteau, Dobbins, Russell, Ladd, and Kirsch (1995) found that pretraining motivation predicted transfer for government employees in a managerial training course. Gist (1989) and Gist, Schwoerer, and Rosen (1989) examined samples of university and federal managers and found that trainees with higher self-efficacy before training (and at the midpoint) performed better on assessments at the completion of training than lower self-efficacy subjects. Mathieu, Martineau, and Tannenbaum (1993) found that self-efficacy significantly predicted training performance and reactions to training in a bowling course. Martaccio and Webster (1992) and Webster and Martaccio (1993) also found that posttraining test performance in a word-processing task was significantly predicted by pretraining motivation to learn. Warr and Bunce (1995) found

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that learning outcomes were related to motivation for the training and self-efficacy for junior managers in an open learning program. A recent meta-analysis by Colquitt, LePine, and Noe (1998) indicates that motivation to learn is positively related to declarative knowledge and skill acquisition, reactions to training, motivation to transfer, and transfer. Pretraining self-efficacy had moderate relationships with declarative knowledge, skill acquisition, transfer (based on one study), and performance, with a small positive relationship to reactions to training. Valence was moderately related to declarative knowledge acquisition, skill acquisition, and strongly related to reactions, and transfer (based on one study). Clearly, the training literature as represented by this meta-analytic review indicates that pretraining motivational variables are related to various indices of training effectiveness.

Research likewise confirms the potential importance of posttraining motivation for transfer. For example, Baumgartel, Reynolds, and Pathan (1984) found that success in transferring management development training was related to belief in the value of the training measured at the completion of the training. Huczynski and Lewis (1980) found that managers who attempted to transfer network analysis training were more likely to have believed the course was beneficial. Research by Gist and colleagues (Gist et al., 1990; Gist, Stevens & Bavetta, 1991; Stevens & Gist, 1993) has found relationships between post-training self-efficacy and level of performance of negotiation skills. The meta-analyses by Colquitt, et al. (1998) found that posttraining self-efficacy was significantly related to transfer indices. In addition, valence was related to the motivation to transfer and transfer (although the latter was based on a single study).

Nature and Assessment of Training Motivation

Conceptually, pretraining and posttraining motivation are distinct. Pretraining motivation is typically focused on impacting the acquisition of knowledge and skill, and posttraining motivation is concerned with application of the knowledge and skills to the job. It is certainly possible for variables to impact motivation at one time in the training process, but be less important at other times. For example, before training, the reputation of the training program is likely to impact pretraining motivation, but once through training, the reputation may have little impact on the desire to apply the training. Although they are conceptually distinct, the nature of the motivational process is the same.

Mathieu and Martineau's (1997) review of training effectiveness indicates that there have been three primary approaches used by researchers when conceptualizing and measuring training motivation. One method uses summative measures of "motivation to learn" and "motivation to transfer" which are based on the trainees' self-ratings. This approach has been used by Noe and Schmitt (1986). Although direct, Mathieu and Martineau suggest they may be susceptible to social desirability responding because they are somewhat transparent. The second approach is the self-efficacy approach which assesses people's judgments of their capabilities to learn and transfer training content by having them rate the extent to which they can master training related functions. This approach has been used by a number of training researchers (Gist, 1989; Gist, Schwoerer, & Rosen, 1989; Gist, Bavetta, & Stevens, 1990; Mathieu, Martineau, & Tannenbaum, 1993). Although more focused than summative measures and more likely to be predictive of specific outcomes, Mathieu and Martineau suggest this method does not

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capture the other important aspects of the training or organizational context such as the importance of the training to the individual. Finally, there is the valence-instrumentality-expectancy (VIE) approach that captures not only the person's beliefs about whether they can acquire a given skill (expectancy), but also their perceptions that acquiring the skill will lead to specific outcomes (instrumentality), and the relative desirability of those outcomes (valence). Thus, the VIE approach may be diagnostic because they capture perceptions of utility of the training in the organizational context in addition to judgments of capability. However, the Mathieu and Martineau point out that VIE approaches have been more successful at predicting a persons choices among options (i.e. where to place effort) rather than performance levels at a particular task. VIE approaches have been advocated by Baldwin and Ford (1988), and used in a number of studies in part or whole, such as Mathieu, Tannenbaum, and Salas (1992), and Clark, Dobbins, and Ladd (1993). Mathieu and Martineau (1997) indicate the need to choose a method based upon the criteria of interest and advocate using multiple approaches. They suggest that efficacy based approaches may be more related to pretraining motivation, and VIE based measures to posttraining choices that affect work outcomes.

It should be noted that these approaches, in theory and application, are often complimentary. For example, self-efficacy is considered similar to expectancies in VIE theory, but more encompassing (Gist, 1989). Noe (1986) suggests motivation to learn is the desire to learn the training content, but it is directly impacted by expectancies and self-efficacy in his conceptual model. Likewise, motivation to transfer is suggested to be comprised of confidence and perceptions of usefulness, which is consistent with self-efficacy and VIE notions. Indeed, in many cases, the constructs are highly interrelated.

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For example, the meta-analyses conducted by Colquitt, et al. (1998) found that motivation to learn and motivation to transfer were highly related, as was motivation to learn and valence. Pretraining self-efficacy and motivation to learn were moderately related. Valence and motivation to transfer were also highly related.

Given the similarity in the nature and assessment of training motivation, be it before or after training, one would expect that the types of influences that have been identified in theory and examined in research would be quite similar in the pretraining and posttraining literatures. In a general sense, there are similarities. Both, for example, recognize environmental variables are important such as climate for transfer. However, with respect to the trainee, there is divergent treatment of what factors impact pretraining and posttraining motivation. The pretraining and posttraining literatures have strengths and weaknesses that can be identified and used to inform one another. The sections that follow examine the pretraining and posttraining motivation literatures and the types of influences identified and examined in each.

Influences on Pretraining Motivation

Recently, there has been an increased interest in pretraining influences as a way to understand what determines training effectiveness, in terms of learning and transfer. A number of models have been offered which suggest that training effectiveness is in part determined by pretraining motivation. These models suggest that environmental and person variables influence pretraining motivation.

Noe (1986) offered one of the first models concerned with pretraining influences on training effectiveness. This model drew from Porter and Lawler's (1968) conception of performance and Wexley and Latham's (1981) conception of trainability to suggest

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that “trainability” was a function of the individual’s ability, motivation, and work environment perceptions, and thus a model should incorporate motivation and environmental factors. Noe (1986) describes a number of critical pretraining person factors that may influence pretraining motivation. The model suggests that the stable personality trait locus of control affects a person’s expectancies, self-efficacy, reaction to skill assessment feedback, and career/job attitudes. The model indicates that relative to those with an external locus of control, persons having an internal locus of control believe they have more personal control over whether they master the training material and thus ought to have greater expectancies and self-efficacy about training outcomes. Likewise internals will be more job involved, perform more career exploration, and act more upon feedback regarding their strengths and weaknesses, than externals as they seek to control their own fate. Positive expectancies, self-efficacy, reactions to feedback, and job attitudes all contribute to the individual’s motivation to learn. This motivation to learn is also influenced by situation factors, or environmental favorability. Favorability includes both social aspects such as reinforcement from peers or supervisors as well as task favorability, such as the absence of situational constraints (tools, information, etc.) Noe’s (1986) model offers an initial attempt to model how person and situation factors prior to training can influence training motivation which should impact training effectiveness. Later models examined similar themes.

Mathieu, Martineau, and Tannenbaum (1993) developed a model that focuses on self-efficacy developed during training as a critical mediator that links individual and situational antecedents to training outcomes such as reactions to training and performance. Although they look at self-efficacy as it develops during training, their

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model suggests influences that may impact pretraining self-efficacy. They contend that individual characteristics such as ability, initial self-efficacy, and achievement motivation (a stable characteristic indicating one's desire to overcome obstacles, exercise power, and strive to do something difficult as well and quickly as possible) would impact the development of self-efficacy. The development of self-efficacy was also expected to be affected by situational variables, such as choice in whether to participate, and situational constraints (at both the individual and aggregate level). Individual constraints include other obligations and pressures specific to the individual, whereas aggregate situational factors are those common to trainees such as instructors, equipment, facilities, and training methods.

The conceptual model presented by Mathieu and Martineau (1997) suggests that individual characteristics and situational characteristics jointly determine pretraining motivation which may be conceptualized and assessed as a summary measure, or indirectly as self-efficacy, or using a VIE approach. Pretraining motivation then determines training outcomes such as reactions, learning, and behavior, as well as work outcomes such as post-training motivation, job behavior, and utility. They suggest four categories of individual characteristics that may affect training motivation. The first category they suggest is demographics, such as age and sex. The second category includes knowledge, skills, abilities, or others (KSAOs) such as abilities, education, and work experiences. The third category includes personality and needs which may affect motivation for training. They suggest manifest needs like achievement, affiliation, or dominance, personality constructs like the so-called "big five" (extroversion, emotional stability, agreeableness, conscientiousness, and openness to experience), and learning

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The types of situational factors affecting motivation the authors suggest are situational constraints, social psychological influences, and maintenance systems. Situational constraints involve the lack of necessary resources, tools, or information to accomplish the task. Social psychological influences -- variously referred to as climate, culture, and interpersonal relations in the literature -- which suggest that interactions with others in the workplace may affect their motivation for training. Maintenance systems refer to factors in the work environment targeted at enhancing transfer such as skill-based pay systems. Although aimed at transfer, the authors suggest that knowing such systems are in place may make people more motivated to learn entering training.

Baldwin and Magjuka (1997) also recently examined pretraining influences on trainee motivation. These authors suggest conceptualizing training as a socially constructed "episode" in order to draw attention to the idea that events and trainee cognitions that occur prior to the delivery of training influence the effectiveness and even the meaning of the training for the individual. Their model is focused on examining contextual influences on critical pretraining cognitions, which they identify as self-efficacy and outcome expectancies (belief that positive outcomes will result from training). Their model suggests three types of pretraining contextual factors that impact self-efficacy and outcome expectations.

The first factor is the training introduction, which they use in the broad sense to include whether training is mandatory or voluntary, whether trainees are able to participate in decisions made about the training, the goals and labels assigned to a

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training initiative, and organizational information such as the organization's purpose and how training contributes to the strategic objectives. The authors suggest complex effects for the different introduction methods. For instance, goals will be interpreted differently by employees at different levels, and that the source of the goal and type of goal will affect motivation. They further propose that mandatory training will typically have equal or better levels of motivation relative to voluntary training as the organization is sending messages about the importance of the topic. However, the expectancies for mandatory training will depend upon previous experiences with such training. They hypothesize that pretraining participation will not improve motivation per se, but improvement will be contingent upon the outcomes of participation and information gain.

The second pretraining contextual factor in the model is the training cohort. The authors suggest that group composition and cooperative group norms affect training motivation. The authors suggest that training group composition affect self-efficacy and outcome expectancies, although motivation and learning depends upon program objectives. They propose that cooperative learning contexts result in higher motivation to learn than individual conditions, but only result in more learning if group rewards and individual accountability are present. Cooperative learning with group goals is expected to enhance the learning of the lowest performing member, and the positive effects of such contexts will be maximized when trainees are given a choice to work cooperatively.

The third type of pretraining contextual factor is transfer climate. Baldwin and Magjuka suggest that although it is typically considered a posttraining consideration, the climate provides pretraining contextual cues that can affect expectancies. In particular, the authors suggest management support and organizational support as key factors (i.e.

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supportive influences determined by events or people external to the immediate supervisor such as peers or evaluation/reward systems). They propose that transfer climate will vary within and across organizations and relate to trainee self-efficacy and outcome expectancies. Explicit supervisor expectations and presence, and linking training performance to organizational reward are expected to increase training motivation. Peer reports about training are also expected to be related to trainee self-efficacy and expectancies. Mere pronouncements of training's importance are expected to be less influential than behavioral supervisory support. Perceptions of situational constraints are expected to negatively impact trainee motivation.

Tests of the Models

As demonstrated above, there are a number of models that have been derived from the literature which have motivation as important elements, and suggest influences on pretraining motivation. However, many of these models cannot, or have not been, tested. For instance, Baldwin and Majguka (1997) and Mathieu and Martineau (1997) are primarily heuristic models derived from literature reviews. Although they are useful guides for developing more specific, testable models, in their current form they cannot be tested. However, there have been attempts to test other models.

Mathieu et al. (1993) used structural equation modeling to test their model with 215 students enrolled in bowling classes. Recall that the model indicated initial performance (ability), initial self-efficacy, achievement motivation, choice, and individual as well as aggregate constraints as determinants of self-efficacy and reactions, which in turn lead to performance. They found support for the model in that initial performance, initial self-efficacy, achievement motivation, and choice in participation

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(whether they wanted to take physical education courses or did so only because they were required) were significant antecedents of self-efficacy. However, aggregate and individual situational constraints, were not significant antecedents of self-efficacy. Instead, constraints were related to reactions to training. Self-efficacy was significantly related to performance and reactions to training.

This study provided substantial support for the model, particularly the effects of person variables such as initial performance (an ability measure), initial self-efficacy, and achievement motivation on subsequent self-efficacy and performance. It should be noted that pretraining self-efficacy was an antecedent, not a dependent variable in this study. However, the study does indicate that pretraining motivational variables impacted midtraining motivation. Choice was supported as a motivational variable. The other situational impacts such as individual and aggregate constraints appeared to be less critical to self-efficacy or improvement, but more an influence on how much students liked the course.

Several studies have tested Noe's (1986) model as a whole or in large part. Recall that this model suggests that the trait locus of control affects self-efficacy and expectancies, as well as attitudes such as job involvement, reactions to feedback, and exploratory behavior. These judgments and attitudes then impact motivation to learn, along with environmental favorability. Motivation to learn impacts training outcomes such as learning and performance. Noe and Schmitt (1986) tested a substantial portion of the model using data from 44 educators below the level of school principal. Self-efficacy and expectancies were not included, however, career planning was added as a mediator between locus of control and pretraining motivation. (Some variables such as

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environmental favorability and motivation to transfer were dropped for measurement reasons.) Path analyses indicated that the initial model did not provide very good fit, as only one path coefficient was significant, a link between behavior change and performance improvement. Several of the attitudes expected to mediate the locus of control to motivation for training were related to one another, and directly to outcomes. A revised model suggests that job involvement (exogenous) was related to career planning and learning. Career planning appeared to be positively related to behavior. Reactions to skill assessment were related to reactions to training. The individual difference locus of control showed near zero path coefficients to most proposed mediators, such as reaction to skill assessment and job involvement, but internal locus of control was positively related to exploratory behavior. Motivation to learn was not related to learning.

A larger sample examination of a substantial portion of the Noe (1986) model was undertaken by Fecteau and colleagues (Fecteau, Dobbins, Russell, Ladd & Kudisch, 1992; Fecteau, Dobbins, Russell, Ladd, & Kudisch, 1995). These authors used structural equations modeling to examine survey results from a sample of 967 managers and supervisors employed in state government who had completed at least one managerial training course. Their model followed Noe (1986) in suggesting that attitudinal and cognitive factors of the individual and environmental favorability are related to pretraining motivation, which is related to transfer. Consistent with Noe (1986), the model tested by Fecteau et al. (1992; 1995) included as antecedents to pretraining motivation job/career attitudes such as career planning and career exploration with organizational commitment added. In addition, perceptions of incentives were included. These incentives parallel the expectancies included in Noe (1986). The incentives

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considered were intrinsic (degree to which the training met internal needs or provided growth opportunities), and extrinsic (promotions, pay raises) which would be likely interpreted as performance to outcome expectancies in that learning and transfer ought to bring rewards or meet needs. In addition, training reputation was included. Positive reputations for training would lead to positive expectancies. The authors added compliance as an incentive (whether training was mandated by the organization) which was expected to be negatively related to motivation. As Noe (1986) suggested, task constraints, and social favorability were included as determinants of pretraining motivation. However, social favorability was broken into subordinate, peer, supervisor, and top management support to determine if they are differentially related to motivation and transfer.

Results showed that the only career attitude related to pretraining motivation was organizational commitment. Training reputation and intrinsic incentives were also related to pretraining motivation, as were social support variables such as support from supervisors, top management, and subordinates (although suppresser effects reversed the direction of the latter two effects, which had positive zero order correlations). Compliance was negatively related to motivation as expected. Pretraining motivation and social support (peer, subordinate and supervisor) were related to transfer. These results are consistent in many respects with Noe and Schmitt (1986) in that they found few career attitudes to relate to pretraining motivation. Only organizational commitment, which they added, was significant, though modest. On the other hand, several relationships did support Noe's (1986) model. For example, training reputation and incentives (intrinsic) did influence training motivation, which is consistent with the

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expectancies suggested by Noe. Social support also was related to motivation and transfer. And, unlike Noe and Schmitt (1986), pretraining motivation was related to training outcomes. (Although, the transfer criterion was self-report the scale was designed to minimize inflation, and models including method factors did not greatly improve fit suggesting the method bias was not a major problem.) Overall, the larger sample examined by Fecteau et al. (1992;1995) suggests that expectancies and social support were antecedents to pretraining motivation. This motivation is related to training outcomes. Career attitudes, task constraints, and external rewards had little effect for this sample.

The studies discussed above have examined the relationships proposed by Noe's (1986) model, however, they are limited in that they have examined the model within single samples with only some of the variables in the model represented. Recently, a more encompassing examination of the model was undertaken by Colquitt et al. (1998) to examine the various relationships across many samples in the myriad studies that have examined one or more of the proposed relationships.

In Colquitt et al.'s (1998) forthcoming paper, they used meta-analysis and structural equation modeling to examine an extended version of the model from Noe (1986). Meta-analyses were performed to examine many of the links in their revised model, which extends the scope of the trainee characteristics, environmental variables, and outcome measures included in the original model. The revised model is presented in Figure 1. Several of the findings from the meta-analyses examining this model are relevant to the influences on pretraining motivation.

Although Noe (1986) proposed that the primary stable characteristic influencing

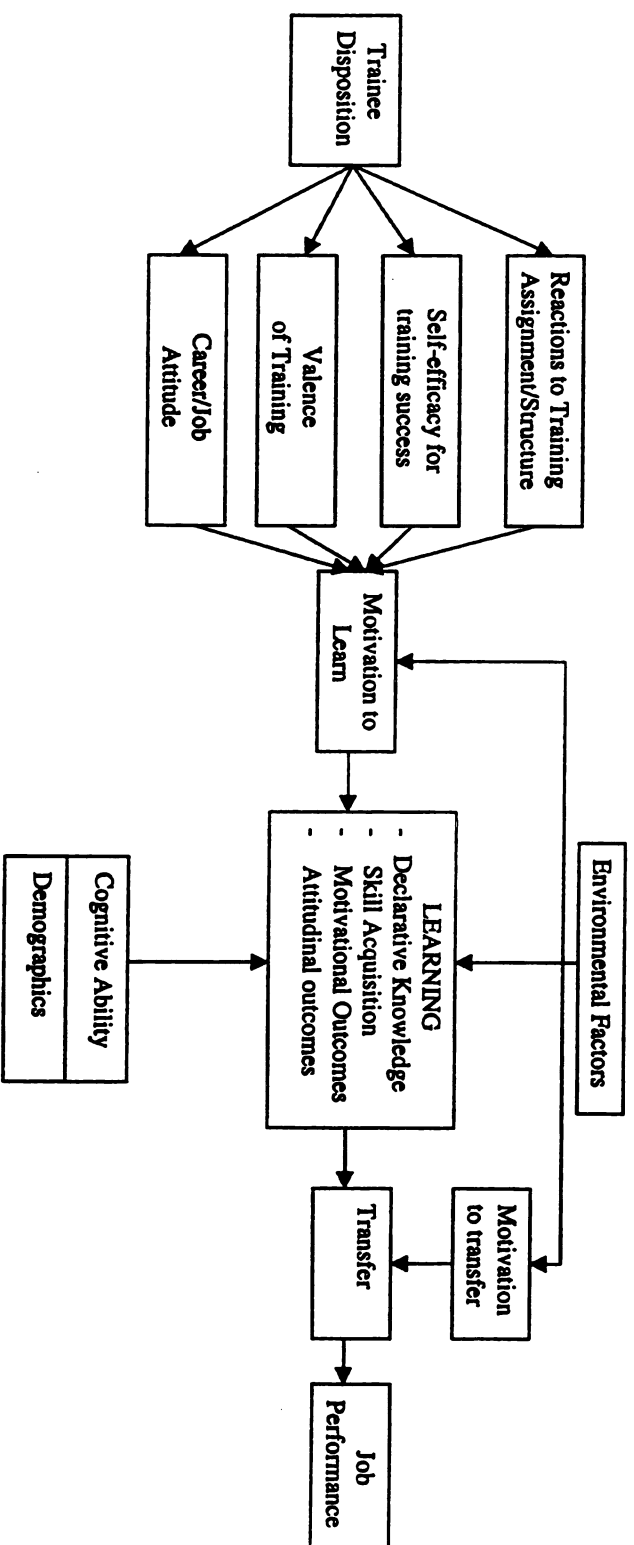


FIGURE 1: Revised model from Colquitt et al. (1998)

pretraining motivation was locus of control, the meta-analysis included achievement motivation, anxiety, conscientiousness, and self-esteem, as well as the demographics age and gender. Based on the results of the meta-analyses, the authors concluded that dispositional variables have a moderate to strong relationship with motivation to learn. Corrected correlations indicated that internal locus of control, higher achievement motivation, higher conscientiousness, higher self-efficacy, and lower anxiety were all related to higher motivation to learn. Achievement motivation, conscientiousness, and lower anxiety were all related to pretraining self-efficacy whereas locus of control was not. Single studies found that self-esteem was slightly related to pretraining self-efficacy, and moderately related to motivation to learn. Overall, the authors note that of the dispositional variables, anxiety had the strongest relationships with motivation to learn, self-efficacy, and training outcomes.

Career and job attitudes were also found to have significant relationships with motivation to learn, and the authors added organizational commitment to Noe's original model. Meta-analyses suggested that organizational commitment, career planning, career exploration, and job involvement were each related to motivation to learn.

The authors' revised model also included valence of training in addition to self-efficacy as motivational constructs that may influence motivation to learn. Both were found to have strong relationships with motivation to learn.

Noe's original model suggested several environmental influences on motivation to learn, such as task and social favorability. Environmental influences included in the meta-analyses included supervisor/manager support, peer support, and transfer climate.

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All three showed moderate relationships with motivation to learn, and strong to moderate relationships with training outcomes.

Critique of Pretraining Motivation Literature

The pretraining literature offers a number of models that suggest influences on pretraining motivation. These influences are basically of two types: environmental or person variables. Unfortunately, these models offer very little in the way of guidance for trainers interested in improving training motivation. The kinds of influences suggested tend to be either beyond their control (e.g. a trainer cannot impact one's job involvement) or treated as stable influences (e.g. locus of control).

The models suggest a number of situational variables that might affect motivation for training, such as choice regarding attendance, supervisory support, peer support, opportunity to perform, climate for transfer, reward systems, goals, or setting up group composition regarding the aptitude of the participants. Most of these, however, are contextual or external to the training program. Certainly, organizations would be advised to consider these situational variables when instituting a training program, but for the most part, many of these issues are predetermined. The trainer has little control over such factors as whether a trainee chose or was ordered to attend, the climate for training or transfer on the job, the presence of peer support, the organizational information the trainee has, or whether trainees had input into training ahead of time. Moreover, even if the trainer could impact these situational influences, many of these influences appear to be rather complex with respect to how they are expected to affect the trainee. As Baldwin and Magjuka (1997) point out, research is mixed as to how many contextual factors can be expected to impact the perceptions of the individuals, and it is these perceptions that

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are critical to how they will affect training motivation. For example, some research has found trainee motivation to be enhanced by voluntary participation (Cohen, 1990; Hicks & Klimoski, 1987), whereas others suggest that volunteers are more likely people trying to get out of work (Kanter, 1986) and that the mandatory status provides a signal of the training's organizational importance (Baldwin & Magjuka, 1991). This leads to a dilemma as to whether or not it would be best to make training mandatory.

With respect to the trainee, the theory on pretraining motivation also offers very little guidance for the trainer. Upon examination, the models suggest three types of person variables that may affect training motivation and learning outcomes: personality traits, career/job attitudes, and demographics. All three are assumed to be relatively stable.

The personality traits suggested by the pretraining models such as locus of control, conscientiousness, achievement motivation, and anxiety, are assumed by the models to be enduring, relatively stable traits. These traits predetermine the degree to which individuals are inclined to believe they have control over their performance, be driven to overcome obstacles and succeed, exert effort to achieve, or be hindered by anxiety. Similarly, the career/job attitudinal variables such as organizational commitment, job involvement, exploration, are presumed at the entry of training to be relatively stable attitudes regarding their organization, job, or career (in part determined by individual differences) with which a person enters training. And, of course, demographic variables are assumed to be essentially stable as one cannot make the individual younger or more female to enhance motivation.

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Therefore, selection for training appears to be the only recourse for trainers who wish to use the current theory regarding person variables as a guide to enhance pretraining motivation. As Colquitt et al. (1998) suggest, "it is possible to profile trainees who are motivated, react well, and learn more. Specifically, the highest motivation levels would be expected from younger individuals with internal locus of control and less anxiety because such individuals are likely to have high efficacy and valence levels" (p. 30). If a trainer can select young, low anxiety, internals, then all else being equal the class should be very motivated, and hence learn and transfer more! Such stable characteristics are excellent for selection as people enter organizations. Unfortunately, trainers are typically expected to enhance the knowledge and skills of people already selected into the organization. Questions remain as to what ought to be done with older, anxious, external locus of control employees. Because the models assume these characteristics are relatively stable traits, the pretraining literature offers little guidance for trainers regarding how they might improve motivation for such individuals.

Influences on Posttraining Motivation

Unlike the pretraining literature, there have been few attempts to create models of influence on posttraining motivation. Noe (1986) was one of the first researchers to explicitly address motivation to transfer. Noe presented a model that included motivation to transfer as a variable impacting training effectiveness. Motivation to transfer was defined as the trainee's desire to use the knowledge and skills mastered in the training program on the job. By indicating that motivation to transfer may mediate the relationship between learning and behavior change on the job, the model indicates that

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even effective learning will not result in behavior change on the job if motivation to transfer is low. Trainees are expected to be motivated when they are confident in using the skills, aware of when skill use is appropriate, perceive that improvements are likely a result of application, and believe the learned skills are helpful in solving work related problems. Trainees' perceptions of confidence and perceptions of applicability are noted as important for assessing motivation to transfer.

The only factors indicated in Noe (1986) which would be expected to impact motivation to transfer are environmental variables, social and task favorability. Noe suggests that even if trainees acquire new skills, they may lack the motivation to use these skills on the job if they perceive that the work environment is perceived as socially unsupportive of the application of these skills, or if they perceive task constraints that inhibit the application of their skills. Colquitt et al. (1998) in their update of the initial Noe (1986) model suggest a direct impact of motivation to transfer on transfer (rather than a moderator role), but still only suggest environmental factors as influences on this motivation to transfer.

Research examining this model has provided mixed results. Noe and Schmitt (1986) ended up combining environmental favorability items with motivation to transfer and some motivation to learn items to form a posttraining motivation scale. They did not find evidence to support posttraining motivation as moderator of the learning to behavior change link as suggested in the initial model. Meta-analyses by Colquitt et al. (1998) did find that motivation to transfer was related to a positive climate for transfer, as well as reactions to training, and performance. Little research existed to study specific types of

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Although Mathieu and Martineau (1997) deals primarily with pretraining motivation, the authors do discuss posttraining motivation to some extent. Posttraining motivation is treated in their model as a work outcome rather than a training outcome. Their model suggests that training outcomes (reactions, learning, behavior) may lead to work outcomes (posttraining motivation, job behavior, utility), and that individual and situational characteristics (described earlier) may moderate the relationship between training outcomes and work outcomes. Explicit propositions are offered that suggest that situational characteristics like supportive work environments and situational constraints are expected to moderate the extent to which what is learned in training will be applied on the job. Similarly, trainees are expected to want to apply training if doing so is consistent with the organization's reward system. Few specific suggestions are made regarding how person factors may moderate the relationship between training outcomes and posttraining motivation. However, it is suggested that certain needs such as achievement or training attitudes may predispose people to use what they learn in training, depending on the nature of the training itself.

Although there are few theoretical models directly examining the nature of posttraining motivation, there have been a number of attempts to develop posttraining interventions. These interventions are primarily intended to impact transfer through motivational means. Examining the underpinnings of these manipulations provides further insight into potential influences on posttraining motivation. Gist et al. (1990)

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contend that two posttraining approaches for facilitating transfer have emerged: goal setting and self-management/relapse prevention.

Goal Setting. Researchers have attempted goal setting interventions which follow training with the idea of impacting transfer of training to the work setting. This research has focused on aspects of goals such as self-set or assigned, or compared supplemental goal setting instruction to other sorts of supplemental instruction. The goal setting interventions are intended to be direct influences on arousal, direction, and maintenance of effort.

Wexley and Nemeroff (1975) used an assigned goal setting approach to facilitate skill application in a management development course for hospital supervisors. Following training, trainees received behaviors checklists based upon the learning points of the training and were instructed to complete the checklists three times per week to record progress in achieving the program's behavioral goals. The treatment group using this assigned goal setting approach were significantly better at applying their skills than a control group.

Wexley and Baldwin (1986) contrasted a self-management approach to transfer with goal setting approaches (assigned and participative). Undergraduate students in a time management workshop received either assigned goals using a behavioral checklist, or met with trainers to determine a goal together. Self-reports of behavior change indicated that both goal setting conditions were superior to self-management at encouraging maintenance, observer ratings did not reveal differences.

Gist, Bavetta, and Stevens (1990) argued that since goal setting operates by increasing arousal, increasing persistence, and directing effort (Locke & Latham, 1990),

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goal setting should be most beneficial for tasks which are primarily a function of directed effort and persistence, but as complexity increases goals should have a weaker effect on performance (Wood, Mento, & Locke, 1987). Goals may hinder performance in complex or heuristic tasks (Earley et al. 1989), or for novel complex tasks (Kanfer & Ackerman, 1989). Gist et al. (1990) contend that goals may be helpful for simple effort or persistence based aspects of transfer. However to the degree that transfer is complex, it also depends upon the trainees' level of content skills and the capacity to orchestrate the application of these skill to the training environment. Orchestration might depend upon individual abilities (e.g. intelligence) which enable the trainee to synthesize the material in a manner that enables application in a novel context, or the capacity to managing affect such as anxiety which may inhibit performance.

In a series of studies, Gist and colleagues have examined the effects of posttraining goal setting instruction. This instruction followed content training in negotiation and described goals, their importance, the characteristics of effective goals, and different aspects of transfer about which goals can be set. (This instruction was typically compared to supplemental self-management training discussed in detail below). Consistent with the notion that goal setting impacts effort based transfer, Gist et al. (1990) found that trainees who received supplemental goal setting training tended to rely on a repetition based strategy for transfer suggesting an effort based approach. This strategy, though, relied on shallower mastery of content. Gist, et al. (1991) used a similar paradigm to examine the effects of the supplemental training and self-efficacy on negotiation skill maintenance. Goal setting did not improve maintenance, and interacted with self-efficacy to accentuate the differences between high and low self-efficacy

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trainees. Low and moderate self-efficacy trainees given goal setting training did worse, whereas those with high self-efficacy did better with goal setting training. Stevens, Bavetta, and Gist (1993) found that gender differences in negotiation were explained by lower self-set goals. Goal setting training improved negotiated salaries for men and women, but the gender difference remained, and goal setting training actually reduced women's perceptions of control over negotiations.

Overall, these results suggest that goal setting manipulations as a posttraining intervention has mixed results. Although effort is apparently improved for initially high self-efficacy individuals, low self-efficacy individuals may get no benefit or be harmed. Goals may lead to a tendency to rely on shallower, effort based strategies.

The intervention with which goal setting is primarily compared, however, has had more positive results. The development of the relapse prevention/self-management approach, and the results at affecting person variables will be discussed below.

Relapse Prevention. Early work on relapse prevention was performed in the clinical literature. F. Kanfer (1970), building on the learning theory developed a three stage model of self-monitoring. The first stage involves self-observation, which is deliberately attending to one's own behavior. Typically, one has an expectation, or goal one is attempting to accomplish be it to refrain from smoking or drive to work. Therefore, the next step involves comparing one's behavior with the relevant criteria, or self-evaluation. The final step is self-reinforcement, a motivational process which involves rewarding or punishing oneself contingent upon the degree to which behavior diverges from the performance standards (F. Kanfer, 1975). Using this self-regulation model, F. Kanfer has devised therapeutic self-management interventions to help people change unwanted

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behavior. In general, these programs involve assessing the problem, setting goals, monitoring the way the environment helps or hinders goal progress, and then identifying and administering reinforcers or punishments (Frayne & Latham, 1987). F. Kanfer (1975) suggests numerous specific interventions to alter behavior based on this model such as a) contracts stipulating the behavior, criteria, and rewards/punishments; b) self-monitoring by recording and charting behavior; c) modifying the environment to avoid stimuli that lead to undesirable behavior; and d) changing self-generated behavioral consequences so that previously rewarded behavior is associated with some non-rewarding or punishing outcome. F. Kanfer suggests both cognitive and behavioral methods from imaging, and rational restructuring to reward and punishment.

Marlatt and Gordon (1980) expanded work by Kanfer and developed a relapse prevention model based upon their work with patients on cessation of addictive behaviors such as drugs, alcohol, and smoking. These authors noted that once the initial stoppage had occurred, initial slips had implications for further relapse. These slips were often triggered by internal emotional states such as anxiety, depression, and high risk situations. They suggested that teaching people about the relapse process (including differentiating between a slip and full relapse), anticipating and understanding the situations in which slips occur, treating slips as data for improving, and providing coping skills for the feelings and situations that will lead to relapse can prevent relapse from occurring. Thus, while similar to F. Kanfer's self-monitoring model, this model goes further in suggesting additional coping skills, and modeling the effect of these skills (or lack of them) on self-efficacy and attribution, focusing on the internal processes through which slips lead to full relapse.

Marx (1982) applied Marlatt and Gordon's model to managerial training. Marx (1982) points out that just as a high percentage of those who stop using drugs relapse, so it is that after initial learning and enthusiasm for new behavior, very little that was learned in training is transferred or maintained. Therefore Marx suggests that the relapse model fits very well for maintenance of skills after training. Furthermore, although spared the physiological components of relapse, the same sorts of psychological or environmental influences may serve as triggers leading to slips and then relapse into old modes of managerial behavior. Marx's model suggests a number of ways that the relapse prevention model applied after a training program can impact the person's states and motivation to maintain the skills that have been learned. Internal states such as stress or anxiety, or external circumstances such as social pressure may be high risk situations for relapse. Based closely upon Marlatt and Gordon (1980), Marx (1982) indicates that upon encountering a high risk situation such as time pressure shortly after training, a person who has learned coping responses (such as monitoring high risk situations, time and stress management, and awareness of the relapse process) will have higher self-efficacy which will be further increased if they are used effectively. This self-efficacy leads to decreased chances of relapse and increases in new behavior transferring to the job. On the other hand, the absence of such coping strategies during a high-risk situation leads to reliance on "willpower," anxiety, and an unawareness of the high risk situation. This will decrease self-efficacy for the new behavior, and reinforce positive expectancies for the old behavior. Once a slip occurs the Abstinence Violation Effect results which involves guilt and confusion over having violated training concepts, negative attribution patterns about lack of self-control, and dissonance leading to denial of training effectiveness

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result. Ultimately, full relapse occurs in which the person gives up attempting to transfer the new learning on the job.

Marx (1986) provides seven steps to developing a relapse prevention to be used following training to increase motivation to transfer and maintain trained skills. The intervention includes choosing a skill to retain, setting a retention goal, making a commitment to retain the skill, learning relapse prevention strategies, predicting circumstances of a first lapse, practicing coping skills, and monitoring the target behavior following training. Relapse prevention strategies include understanding the relapse process, recognizing differences between the training setting and the work setting, identifying high risk situations, recognizing the effects of seemingly unimportant choices, avoiding self-blame and confidence loss upon slipping, diagnosing necessary support skills, examining lifestyle patterns that may interfere, scheduling activities, and creating rewards and punishments.

It is important to note that relapse prevention is expected to work in large part by impacting motivational variables. Self-efficacy is increased by having (and especially executing) coping skills. Expectancies for the old behavior are reduced, or at least expectancies for the new behavior increased.

The literature testing relapse prevention has demonstrated that it can effectively improve transfer. Some research suggests relapse prevention has its effects by impacting motivation directly. For example, Noe, Sears, and Fullenkamp (1990) found that filling out a relapse prevention worksheet improved trainee's expectancies regarding successful transfer. Frayne and Latham, (1987) and Latham and Frayne (1989) a self-monitoring training intervention was used to attempt to decrease absenteeism in an organization.

Their intervention involved describing the problem, identifying coping skills, goal setting (proximal and distal), self-monitoring attendance with charting and diaries, and identifying reinforcers and punishers. Results indicated that the self-management program increased self-efficacy, and decreased absenteeism relative to a control group. No effect was obtained for expectancies, which the authors note were uniformly high in both groups (Frayne & Latham, 1987). However, other studies have not found effects for self-management training on self-efficacy (e.g. Gist et al., 1991; Steven & Gist, 1997). It should be noted, however, that unlike the studies mentioned above which used true control group, these studies compared two interventions, both of which may have improved self-efficacy (e.g. Gist et al., 1993 shows mean increases in self-efficacy after the content training but after the intervention. As there were no between group differences, this suggests that both groups increased self-efficacy as a result of the interventions). Research by Gist and colleagues has, however, suggested particular person variables that may have influenced posttraining motivation. For example, Stevens, Bavetta, and Gist (1993) found that self-management training improved perceptions of control for women, which allowed self-management training to improve performance. This suggests that a person's attributions may impact posttraining motivation.

Another potential person variable impacting posttraining motivation is anxiety. Gist et al. (1990) found that self-management led to greater generalization of trained skills than goal setting. The authors report common obstacles to success cited by trainees in the self-management condition. Included in common examples were stress, uncertainty, and excessive anxiety. It is possible that the self-management training aided by helping trainees deal with this anxiety. This would be consistent with Marx's (1982)

theory, and with the concept of “orchestration” for goal setting in complex tasks. This was not directly tested, however.

Recent work by Stevens and Gist (1997) also suggests that learning orientation may be important. This work combined self-management and mastery orientation manipulations and compared them to goal setting and performance orientation manipulations. The authors suggested that self-management training was consistent with a mastery orientation, and goal setting training was consistent with a performance orientation. However, additional instructions to direct these orientations were also included. As they had found in previous work, the self-management/mastery group performed well regardless of self-efficacy before the posttraining manipulation. Low self-efficacy people with goal setting/performance orientation manipulations performed poorly relative to the other subjects. The authors found that cognitive withdrawal mediated this relationship. In addition, self-management/mastery subjects also intended to put forth more effort and had more positive affect.

Critique of Posttraining Motivational Influence Literature

The literature on posttraining motivation tends to be somewhat lacking in theoretical models that indicate influences on this motivation. Few theoretical models exist that explicitly examine posttraining motivation as more than just an outcome of success in training.

Those models that have examined posttraining motivation tend to focus primarily, if not exclusively, on environmental factors such as climate for transfer, social support, or situational constraints. As discussed earlier, although important, such factors are typically beyond the control of the trainer or trainee.

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Interestingly, although this area lacks theoretical development, and the models that exist focus on environmental factors, the work on interventions identifies potentially important person factors. Work on relapse prevention in particular points to a number of person variables which may be influenced and improve motivation. Anxiety, perceptions of control, and learning orientation are person factors which have been part of the interventions, or potentially influenced by them which may have had impact on posttraining motivation. However, there has been little attempt to ascertain directly whether these variables are critical to posttraining motivation and improving transfer.

Integrating Research on Pretraining and Posttraining Motivation

A number of important points can now be made regarding pretraining and posttraining literatures. As discussed above, although pretraining motivation is focused on learning and posttraining motivation is focused on performance, the nature of motivation remains the same. Hence, whether before or after training, motivational variables and processes involve arousal, direction, and maintenance of effort. Thus, similar motivational variables have been assessed in the literature before and after training: self-efficacy, expectancy, instrumentality, and valence (Mathieu & Martineau, 1997). These concepts are also included or closely tied to Noe's (1986) conceptions of the more general motivation to learn and motivation to transfer.

The pretraining literature has developed more theoretical models that suggest person variables as important influences on this motivation. Unfortunately, they are considered as somewhat static. Perhaps because of this static view of the trainee, few attempts have been made to develop interventions aimed at influencing the trainee to

improve pretraining motivation. This is particularly unfortunate, because it is exactly at this point, prior to training, that influencing a person's motivation might be most beneficial. If, as research has suggested, motivation prior to training influences learning and transfer, then trainers ought to be particularly interested in finding ways to improve motivation to learn. The earlier in the process one can have impact, the better the results may eventually be.

On the other hand, the posttraining literature has little in the way of theory suggesting that person variables are important influences on posttraining motivation. Instead, this literature is focused almost exclusively on environmental influences on motivation following training. Yet, several interventions have been designed that appear to function, at least in substantial part, by influencing motivational processes through person variables such as attributions (perceptions of control), learning orientation, or anxiety. This suggests a more flexible and dynamic view of the person than is typically taken in the pretraining motivation literature.

There is recent evidence that indicates that person variables may be more important throughout training than previously expected. Colquitt et al. (1998) used meta-analytic structural equation modeling to compare their model to Naylor, Pritchett, and Ilgen's (1980) model. The two differ in their theoretical underpinnings in that the Colquitt et al. (1989) model suggests that dispositional influences cast a distal influence on learning through mediators such as self-efficacy or job attitudes, the dispositional influences therefore primarily influence choice. The Naylor et al. (1980) model, on the other hand, suggests that in addition to choice, individual differences operate at all stages of the training process. The results of the meta-analytic structural equations modeling

indicated that the Naylor et al. (1980) model was a better fit, suggesting that person variables may be more important at all stages of training than the training literature has considered previously. These findings suggest that attempts to manipulate person variables after training may also be beneficial to posttraining motivation.

The strengths of the pretraining and posttraining literatures can be used to complement the other. The pretraining literature has specifically identified a number of individual variables which may be critical to motivation in training, but has treated these variables as stable individual differences. The posttraining literature has viewed people as more dynamic, more flexible, and has thus take a more interventionist perspective.

What is needed is a model which integrates the clear identification of person variables that is the strength in the pretraining motivation literature with the more dynamic view of the trainee which is a strength from the posttraining literature. Because the motivational processes are the same before and after training, although they types of environmental influences before and after training may vary, the types of person variables that influence motivation ought to be similar. Therefore, the types of person variables identified as important to pretraining motivation ought to be important for posttraining motivation as well. Likewise, there is evidence, albeit sparse, that person variables similar to the type identified by the pretraining literature can be influenced by interventions that follow training. If such variables, call them malleable analogs of stable individual differences, can be influenced after training, it is likely that similar manipulations can be used before training. Indeed the greater theoretical specification given to the types of person variables important for pretraining motivation may make such interventions more focused and thus more capable of creating positive change.

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In the sections that follow, first, evidence is presented that malleable analogs exist for the kinds of variables suggested as important by the pretraining motivation literature, such as locus of control, anxiety, and learning orientation. Next, evidence drawn from the various literatures regarding the influence of these variables on motivation is reviewed to suggest that, as the stable versions of these states may influence training motivation, so too may the state counterparts. Furthermore, the types of variables that have been found to influence pretraining motivation may be the same types that impact posttraining motivation: attributions, anxiety, and learning orientation. Next, literature suggesting how these states have been influenced is reviewed in order to determine how manipulations may be created that impact these psychological states. Finally, a model and hypotheses are presented regarding how a manipulation may impact psychological states to benefit pretraining and posttraining motivation to the benefit of learning and ultimately transfer.

The Dynamic Learner

The pretraining literature identifies a number of factors that have been examined as stable person variables or dispositions that may influence pretraining motivation. The model that follows builds upon literature suggesting that many of these variables can be treated as malleable, and thus, we can create manipulations designed to influence them in ways beneficial to training effectiveness. Thus, some literature from Personality and Social Psychology will be discussed in this section. This literature suggests that variables such as Anxiety, Locus of Control, and Learning Orientation may be treated as traits as the pretraining literature tends to, or as malleable states or judgments open to influence.

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If we view individuals as more dynamic as they enter the training episode (Baldwin & Madjuka, 1997), we can offer trainers more theory regarding in how to improve training motivation. The current theory and research on pretraining influences provide a useful and important guide regarding the types of variables that will lead to better motivation before and after training. Yet, if we know that people who typically think, feel, and behave in particular ways are more motivated, learn better, and transfer better, is it not possible to get more people to think, feel, or behave in these ways as they enter training? As Mischel (1969) asks, “what would happen conceptually if we treated the organism as truly active and dynamic rather than as the carrier of a stable dispositional reservoir of motives and traits? Might one then more easily think of changes...as genuinely new strategies in which many of the person’s old plans are discarded and replaced by more appropriate ones...”(p. 1017)? There is ample literature in Social and Personality Psychology which suggests that on many characteristics, such as the ones identified as important pretraining influences, people can be quite dynamic.

States Versus Trait.

Personality researchers have examined the state/trait distinction for many years. In fact, this distinction has been recognized by observers of human behavior as far back as Cicero in 45 B.C., as well as the earliest scientific personality researchers such as Allport and Odbert (1936). Trait theory suggests that individuals vary on a set of relatively stable and enduring dispositions, or traits which cause individuals to differ in their patterns of behavior over time and situations (Mischel, 1968). States, on the other hand, are temporary psychological conditions generally caused by (or in response to) external stimuli or situations. Unlike traits, which are expected to be stable over time and

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situations, states lead people to act in different ways according to the situation. Although some have suggested that the distinction is arbitrary, (Allen & Potkay, 1981), Chaplin, et al. (1988) have attempted to address these labeling concerns by suggesting that states and traits are not necessarily discrete, but have fuzzy boundaries. Their research on prototypical characteristics of states and traits indicated that college students used a number of factors in determining if a personality descriptor was a state or a trait. The students used factors such as: a) the temporal stability or the degree of stability in the behavior over time; b) causal origin, or whether the person or situation is the cause of behavior; c) duration, which is the length of time relevant behaviors last; d) situational scope which is the occurrence across situations of behavior; and, e) frequency of occurrence of the behavior. The prototypic trait is determined by stable, internal, long lasting behaviors that occur across situations and with frequency. The prototypic state is unstable, externally caused, fleeting, occurs in a particular situation, and occurs infrequently. So, depending on where behaviors fit along these dimensions they may describe a trait or state.

Some have gone as far as to doubt the merit of traits in general. Mischel (1968; 1969) criticized trait theory and argued that traits are an illusion caused by our minds' attempt to deal with a glut of information. Mischel suggested that personal theories or construction systems are developed based on little information which are very difficult to disconfirm, even though much of human behavior is not consistent. Instead Mischel argued for the importance of situational factors on behavior, saying "what people do in any situation may be altered radically even by seemingly minor variations in prior

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This more radical point of view was probably overstated. Kenrick and Funder (1988) examined the literature concluding that traits are not illusions, artifacts, or by products of situational consistencies, nor are their relationships with behavior trivial. Instead of a pure trait or situation perspective most researchers now agree either is overly simplistic (Olweus, 1977), an interactionist perspective has become more accepted.

Consistent with the interactionist approach, Chaplin, et al. (1988) point out that many personality variables can be adequately classified as both traits and states. In fact, for some personality concepts, researchers have made explicit attempts to understand both. Several examples of variables which have been treated as both traits and states that are relevant to the training field are available and will be examined below, including anxiety, learning orientation, and locus of control or attributions.

Anxiety. Spielberger (1966) differentiated between state and trait anxiety. Anxiety can be defined as an acquired or learned fear, with intense anxiety involving the feeling of fear, physical arousal, and a disruption in effective cognitive control (Maher, 1966; Mischel, 1976). It is the emotion which has received the most attention from personality researchers (Mischel, 1976). State anxiety is conceptualized as a person’s momentary or situational anxiety which varies in intensity over time and across settings. Trait anxiety, in contrasts, refers to a more stable, characteristic overall level of anxiety. Spielberger (1977) describes research in which anxiety is manipulated, by a balloon that is popped near the subjects’ face. After the manipulation, a state level of anxiety was higher for those enduring this manipulation than for controls. The trait measure of anxiety did not

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show differences in anxiety. Those subjects who had a higher level of trait anxiety showed greater increases in state anxiety, leading Spielberger (1977) to conclude that the anxiety trait predisposes a susceptibility to situational influence. These results are consistent with studies of self-reported reactions to a number of described situations ranging in threat level. The person by situation interaction best accounted for the test responses.

Clearly, personality research that has recognized that individual characteristics like anxiety are not simply static influences that affect behavior in predetermined ways. Instead, personality research has recognized the dynamic, adaptive nature of people to react to their situation, and for the psychological situation to influence the exhibition of one's characteristics (Mischel & Shoda, 1995).

Learning Orientation. Another example of a construct being examined as both a state and a trait relevant to the training literature is learning orientation (also called goal orientation). Learning orientation deals with an individual's approach to learning situations. Researchers distinguish between two orientations, a mastery orientation and a performance orientation (Dweck, 1986). Mastery oriented people have primarily focus on improving competence and gaining mastery over the material. They also may see ability as more malleable (Nicholls, 1984). Performance oriented individuals primarily want to attain positive judgments of their ability and avoid negative judgments of competence (Dweck, 1986). Performance oriented people may believe ability is fixed and inversely related to effort (Nicholls, 1984). Recent work by Fisher (1998) has examined learning orientation from an interactionist perspective as both a state and a trait, noting that the literature on learning orientation has taken both approaches. Fisher examined the effects

of state and trait learning orientation on self-set goals and the reaction to goal-feedback discrepancy. Although trait mastery and performance orientations were related to state orientations (across three time periods) they only accounted for between four and 16 percent of variance in the state levels of learning orientation, with the impact of the trait decreasing over time. Both state and trait orientations affected subjects learning goals, with the impact of state orientation being over and above the effects of trait orientation.

Attribution. The individual characteristic locus of control developed by Rotter (1966) is well represented in the pretraining influence literature (e.g. Noe, 1986; Colquitt et al. 1998). Locus of control represents a stable generalized expectancy that our behavior can have an impact on our environment and that we are capable of controlling outcomes through our own behavior. Those who believe their behavior does control outcomes and that the environment is responsive to their behavior have an internal locus of control, those who believe outcomes are more determined by other factors beyond their control are considered to have an external locus of control. Locus of control, therefore, suggests a general attributional tendency that may affect performance. However, there is research to suggest that attribution is greatly, if not primarily, influenced by non-individual difference factors.

For example, Weiner (1974; 1980) categorized various causes of performance along the dimensions of locus (internal/external), stability (stable/unstable), and controllability (controllable/uncontrollable). Weiner (1983) examined attribution research and indicated that in this research, a number of relatively minor manipulations can influence subjects' perceptions of causality dimensions in achievement settings, or those in which learning or performance is expected to take place (as opposed to attribution of

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causes of social behavior like helping). He indicates the importance of capturing the phenomenology of the subjects in the experimental setting to avoid inaccurate nominal classifications of manipulations on causal dimensions. Often researchers have attempted to manipulate task difficulty, which was generally considered to be an external factor. However, research has shown that subjects often view task difficulty as an interaction between difficulty and ability. They indicate that a task is too difficult for them, or perceive that their high ability and high effort decreases the difficulty of the task (e.g. Porac, 1981). Such statements imply both internal and external elements. Weiner notes that this internal element of the attribution can be removed fairly easily by providing some consensus information or other external criteria, such as allowing subjects to observe other subjects' success or failure. The consensus information anchors the difficulty as external in locus.

Similar observations have been made for other dimensions of attribution such as perceived stability of various causes of performance, a dimension which has been shown to be important for determining changes in expectancies. This is particularly true in learning situations. Weiner (1983) indicated that in the attribution research reviewed, causes generally characterized as stable may actually be viewed by subjects as unstable based on small changes in the task or questions asked. Task difficulty may be perceived as unstable if the situation changes, ability may be perceived as unstable if it connotes skill or knowledge and learning is expected to occur, or ability may be perceived as unstable if different abilities are being tapped over time.

Some studies have even demonstrated that it is possible to affect not just the attributes of perceived causes, but the attribution of causes themselves. For example

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Anderson and Jennings (1980) and Anderson (1983) demonstrated that it is possible to lead subjects to attribute failures to effort or strategies rather than ability. Subjects led to believe failures on a blood-donation solicitation task were due to strategy or effort showed greater persistence and more constructive behavior than those led to believe ability was the cause of their failure.

It is clear that although the individual difference in locus of control may have impact on one's motivation as they enter learning, the attribution literature suggests that attributions are subject to change. Because attributions are essentially cognitive judgments about causality, it is not surprising that it can be influenced by cue in the environment. All things being equal, the literature suggests that one's individual differences in locus of control will be the primary influence over motivation. However, if locus of control (or other attributional dimensions) is important to learning, the literature suggests that trainers ought to be able to take advantage of the attributional malleability to enhance motivation to learn through attributions about the causes of learning and performance for the material at hand.

Psychological States and Their Influence on Motivation

Clearly, the types of variables examined in the pretraining literature as stable influences on pretraining motivation have malleable analogs that will here be referred to as psychological states to emphasize their malleability. (Note that attributions are more judgments than "states" as the term state is often used to refer to an affective condition or orientation. However the term is being used as a label to emphasize the difference between the stable locus of control which is more generalized, and the specific

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attributions regarding a particular situation which may be more prone to influence.) As with the traits examined in the pretraining literature, the psychological states too are related to motivation, and even the types of motivational variables examined in the training literature.

Attributions and Motivation

There is considerable theory and research that suggests that attributions impact motivational variables important to training motivation. Weiner (1974; 1985) suggests that attributions regarding performance lead to changes in expectancy. Initial estimates of expectancy are determined by perceived ability, anticipated effort, perceived task difficulty, and anticipated luck. Changes in expectancy over time are primarily a function of the degree to which attributions are made to stable or unstable factors. If conditions are expected to remain the same, then the outcomes in the past should recur. Success attributed to stable factors should produce relatively large increments in anticipated future success, and failure would strengthen the belief that there will be future failures. However, if conditions are likely to change, then the present outcome may not be expected to repeat itself. Success should not lead to stronger beliefs in future success, nor failure stronger beliefs that there will be future failure.

Theory regarding self-efficacy formation also suggest similar attribution-efficacy relationships. Schunk (1984) suggests that students gain information about their level of self-efficacy from the sources Bandura (1982) suggested (performance, vicarious experience, verbal persuasion, physiological indices), plus attribution related perceptions such as ability, task difficulty, and effort expenditure. Gist and Mitchell (1992) suggest that the effects of the four factors suggested by Bandura on self-efficacy are partially

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mediated by judgments or attributions about why a particular performance level occurred taking into account experience, modeling, and/or persuasion as information for these attributions. These analyses indicate the necessary ability and effort requirements for success, and combine with task and resource/constraint assessments to determine overall self-efficacy. The authors also suggest that for novel tasks or situations, these analyses are likely more in-depth than for routine tasks or situations.

Regarding learning situations in particular, Diener and Dweck (1978) drew from learned helplessness theory to suggest that students who attribute failure unstable, controllable will demonstrate more persistence and effort than those who believe that failure is due to stable, uncontrollable causes, particularly in the face of difficulty. Dweck (1986) suggested that those with an entity theory of ability (consistent with stable and uncontrollable attributions) will avoid challenge and be low in persistence. Those who have an “incremental” theory of ability (unstable, controllable attributions) will be higher in persistence and seek challenge.

Empirical work has supported the relationship between attribution and motivational variables. For example, Weiner, Heckhausen, Meyer, and Cook (1972) found that after inducing failure on a digit replacement task, subjects who attributed failure to stable causes (task, ability) decreased expectancies more than subjects who attributed failure to unstable causes (effort, or luck). Onifade, Harrison, and Cafferty (1997) put students in the role of project supervisors for poorly performing projects, and provided different attributions for the performance problems. Expectancies were lower when the explanations for poor performance were for stable factors than for unstable

factors, internal factors for poor performance also were negatively related to expectancy but less so.

Silver, Mitchell, and Gist (1995) suggested a cyclical relationship between self-efficacy and attributions regarding performance. Their research on undergraduates found results consistent with Weiner (1985). In study two, the authors asked undergraduates to complete six practice GMAT items and provided feedback and recorded their self-efficacy. Then they gave 10 test problems and recorded attributions for test performance and self-efficacy. One relevant finding was that that post task self-efficacy was related to internal, stable attributions for successful performance and unstable attributions for failure.

Research on students in actual school settings also supports the link between attributions and efficacy. Mone and Baker (1992) collected data on self-efficacy, grade goal, and causal attributions from undergraduates before and after two midterm tests and before the final examination. Their research indicated that when stable causes were attributed, goal attainment related to higher levels of self-efficacy and failure related to lower levels of self-efficacy. Unstable causes led to moderate, or even lower levels of self-efficacy following goal attainment, while lower performance may have bolstered self-efficacy. The authors suggested that failures that could be attributed to unstable causes might enable ego-protection and little lowering of self-efficacy as subjects simply decide they will try harder or just had bad luck. However, success attributed to unstable factors prevents increases in self-efficacy which accompany success attributed to stable factors, and uncertainty about success may even lower self-efficacy slightly. These findings were substantially replicated by Thomas and Mathieu (1994).

Diener and Dweck (1978) found that students who tended to attribute performance to effort responded to difficulty with more positive affect, less search for blame, less task irrelevant thought, and gave self-instructions and verbalizations suggesting need for more effort. Children who tended to make attributions to stable uncontrollable factors such as ability spent less time searching for ways to overcome their difficulties. Similarly, Licht and Dweck (1984) found that students who made effort attributions for failure were better able to overcome initially confusing material than those making ability attributions. Since these children learned equal amounts when the initial material was not confusing, the authors suggest motivational factors. Martocchio (1994) found that trainees told computer training was an acquirable skill showed an increase in computer efficacy between pre and posttraining assessments, whereas those told that computer skills were an unacquireable ability (entity condition) had a significant decrease in computer efficacy beliefs.

Evidence on attributional change provides important evidence for the impact of attributions on motivation. Much of the research linking attributions to motivational variables has examined attributions following a performance episode to examine the effects of attributions for success or failure on efficacy or expectancy. Although this demonstrates the importance of attributions on subsequent motivation in general, it does not speak as well to pretraining motivation which essentially comes before any particular performance/training event. As individuals approach a training program, they must draw on past achievement on similar tasks, experience with training in their organization, and the training content. Their attributions regarding what has led to their previous success or failure likely determine, in part, their self-efficacy and expectancies. Attempts to change

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these attributions when they are detrimental to motivation (i.e. failure attributed to low ability) can have positive motivational effects.

Curtis (1992) noted that physical therapists who expressed a high likelihood for leaving the job ascribed the outcomes from important interactions with physicians to external, unstable, uncontrollable factors (i.e. physician receptivity or mood) for both success and failure. Therefore, a training program to change attributions was developed. An experimental group trained to make strategy and effort attributions (internal, controllable, unstable) demonstrated higher expectancies for future outcomes demonstrating that changing attributions can change expectancies for future success.

Similarly, other attribution change programs have demonstrated positive effects on expectancies and self-efficacy. Anderson (1983) found that subjects who believed task outcomes were determined by variable causes such as effort and strategy had higher initial expectancies and less decrease in expectancies following failure than those with stable attributions for performance. Wilson and Linville (1985) likewise found that subjects receiving attributional information leading toward effort attributions expected better GPAs in the long run than controls.

Also relevant to motivation was the fact that attribution training toward effort and strategy attributions led to increased persistence. Fosterling's (1985) review of attribution retraining indicates that following such training, researchers have found increased persistence in terms of dropout rate, sentence reading, problem solving, time spent on perceptual reasoning (Andrews & Debus, 1978; Chapin & Dyck, 1976; Fowler & Peterson, 1981; Medway & Venino, 1982).

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Overall, this evidence suggests that attributions affect motivation. Much of this research has taken a within subject approach, however the findings suggest that those who believe that they can improve and thus are likely motivated for training attribute performance to internal, unstable, controllable factors like effort or strategies. Those who believe that performance is ultimately due to stable, uncontrollable, or external factors are likely less motivated for training. Similar relationships are likely to exist in the posttraining environment. Recall, for example, that Stevens et al. (1993) found that improving perceptions of control with a posttraining manipulation led to better performance after two weeks for some subjects.

Learning Orientation and Motivation

Recently, several authors have suggested that trait mastery orientations lead to greater motivation and learning in training (Colquitt et al., 1998; Ford et al., 1997; Mathieu & Martineau, 1997). However, some researchers have suggested that learning orientation can be examined as both a trait and state (Button, Mathieu, & Zajac, 1996; Dweck & Leggett, 1988; Fisher, 1997). Although there has not been a great deal of research examining state learning orientation and motivation to learn, there is some theory and evidence drawn from trait learning orientation and attempts to manipulate learning orientation that suggests that having a mastery orientation is related to greater motivation for training.

Dweck (1986) summarizes research on orientation and motivational patterns in students learning in both classroom and laboratory environments. Findings suggest that adaptive motivational patterns promote the establishment, maintenance, and attainment of personally challenging and valued goals. Maladaptive patterns are associated with failure

to establish such goals, to maintain effective striving toward them, or ultimately to reach them. Research has shown that despite equal ability, adaptive patterns are established by mastery oriented learners and characterized by challenge seeking and persistence in the face of obstacles. Children displaying this pattern appear to enjoy exerting effort in pursuit of mastery, and tend to use obstacles as cues to increase effort. On the other hand, performance oriented children tend to exhibit maladaptive motivational patterns in which they avoid challenge, are low in persistence, and display negative affect and cognition when they confront obstacles.

Kozlowski, Weissbein, Brown, Toney, and Mullins (1997) have incorporated orientation onto their theoretical model of a “Mastery Learning System.” The model examines training components which can be integrated into training manipulations impacting self-regulation to ultimately improve learning, performance, and adaptability. One of the three training components included in this model is orientation. Kozlowski et al. (1997) note that encouraging a mastery orientation may be useful for training contexts as mastery oriented individuals are more likely to adopt learning goals, and focus on improving skills and generally increasing competence.

Research suggests that mastery oriented learners are characterized by positive affect, increased motivation, constructive self-instruction, and active self-monitoring (Dweck & Leggett, 1988). Performance oriented people are more concerned with proving to others that they are smart or performing better than those around them. Performance orientations may suppress cognitive and metacognitive processes stimulated by adoption of mastery orientations (Schraw, Horn, Thorndike-Christ, & Bruning, 1995). Archer (1994) suggests that mastery oriented people are more motivated to learn than

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performance oriented people. Their desire to learn rather than to perform may make mastery oriented trainees more persistent in the face of difficulties or errors, they may view difficulties more as a challenge and opportunity to learn rather than a demotivating performance failure that must be explained (Nordstrom, Wendland, & Williams, 1995). Farr, Hoffman, and Ringenbach (1993) suggested that mastery oriented learners may be more motivated to attend training, may engage in greater on the job learning, and self-initiate more development experiences.

Fisher and Ford (1998) had college students learn a multiple cue probability learning task involving predicting stock prices. They found that mastery oriented subjects put forth greater mental effort, and the used more complex learning strategies (which require more effort). Performance oriented subjects reported less on-task effort and used complex learning strategies less frequently.

Kozlowski et al. (1996) used sequenced learning goals and performance goals to manipulate orientation using a radar simulation task. Even after using trait orientation as a covariate, mastery goals led to enhance self-efficacy relative to performance goals. Performance goals enhanced practice performance but limited deeper learning and transfer. These results replicated Kozlowski, et al. (1995) also found that mastery oriented learners had higher self-efficacy which led to greater generalization of learned skills.

Research examining learning orientations typically take place in learning environments like training and classroom settings. However, transfer takes place outside of such a setting. Given that performance is valued in the transfer setting, one might expect that performance orientations to be more beneficial for motivation to transfer.

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However, there is reason to expect that this orientation may not be optimal for posttraining motivation.

Transfer involves the maintenance and generalization of learning in training to the transfer environment. Because mastery orientations are learning and skill centered, they may encourage the learners to focus on the attempt to transfer, not the outcome of these attempts encouraging people to try and apply what they have learned, and look at difficulties and learning opportunities rather than failure. This is similar to the idea in relapse prevention of suggesting to trainees that a slip is not failure, but an expected event and data for improvement. Stevens and Gist (1997) found that a self-management/mastery oriented posttraining manipulation decreased cognitive withdrawal for low self-efficacy people.

On the other hand, a performance orientation is more likely to interact with other motivational factors such as self-efficacy or instrumentality to determine if it is motivating or unmotivating. Because skills are new, trainees are likely less confident in them relative to older methods they have been using. Performance orientation, because it is focused on looking good and performing rather than trying skills, may only lead to motivation to transfer in certain conditions. An emphasis on performance may lead to worry that attempts to apply new skills will make them look bad or lead to decrements in performance. Therefore, they may be less confident and less motivated to try and transfer skills, or may only try them in certain instances where they feel they will definitely lead to performance.

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State Anxiety and Motivation

Colquitt et al. (1998) extended Noe's (1986) model by including anxiety as a person variable that impacts pretraining motivation. In fact, as noted earlier it was the person variable with some of the largest effects in the model. Their meta-analyses showed that dispositional anxiety had corrected correlations of $-.34$ with pretraining self-efficacy, and $-.57$ with motivation to learn, with neither confidence interval including zero.

It is reasonable to suggest that state anxiety may operate in a similar manner. Bandura (1982; 1977) contends that anxiety is negatively related to self-efficacy. Anxiety, is often considered to have cognitive, physiological, and behavioral components (Lang, 1978). Bandura's theory suggests that the physiological aspects of anxiety (heart rate, tension, arousal) provide information on efficacy. Bandura (1972) states, "People rely partly on information from their physiological state in judging their capabilities. They read their visceral arousal in stressful and taxing situations as an ominous sign ... people are more inclined to expect success when they are not beset by aversive arousal than if they are tense and viscerally agitated" (p. 127). This physiological information is then combined with other relevant information (past performance, persuasion, etc.) to determine efficacy, which then impacts behavior. Bandura (1977) theorizes that decreasing anxiety and its physiological affects may improve performance, but it will do so by raising self-efficacy.

A number of studies have demonstrated a negative relationship between anxiety and motivational variables in training research. Data prior to the start of a training Program was collected from 106 junior managers by Warr and Bunce (1995). They found

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significant negative relationships between a learning task anxiety and motivation for training in general, as well as motivation for the specific training. They also found a negative relationship between learning task anxiety and learning self-efficacy. Webster and Martoccio (1993) also report finding a strong negative relationship between computer anxiety and pretraining motivation to learn on a sample of clerical and administrative university employees. Feinberg and Halprin (1978) found a significant negative relationship between state anxiety and grade expectancy in measures taken midway through the first class period in an introductory statistics class. Both were related to course outcomes.

Pentz (1981) examined the relationship between state anxiety and self-efficacy before and after assertion training. Their research suggests that state anxiety was a significant predictor of pretraining self-efficacy, and regression analyses indicated that state anxiety assessed prior to training was one of the greatest contributors to variance in posttraining self-efficacy and behavioral outcomes. Saks (1994) investigated the relationship between self-efficacy, training method, and anxiety in entry level accountants. He found that self-efficacy was significantly, negative related to anxiety, and some evidence that self-efficacy moderated the relationship between training method and anxiety. This finding is consistent with Gist, et al. (1989) who examined alternative methods of computer training and their relationship with self-efficacy on managers and administrators. As part of this effort they examined affect during training such as anxiety. Their correlations suggest a negative relationship between anxiety and self-efficacy. Martoccio (1994) also reported a significant, negative correlation between pretraining computer anxiety and computer efficacy for administrative university employees, and an

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even stronger relationship between computer anxiety and efficacy after training. Jex and Gudanowski (1992) investigated the role of self-efficacy in the work stress process and found that self-efficacy was negatively related to frustration and anxiety.

Other research supporting the notion of a link between anxiety and motivation is the research that has examined interventions designed to decrease specific forms of state anxiety such as test anxiety. Several studies indicate that these interventions, which typically include coping skills to deal with the physiological and cognitive elements of anxiety (discussed in more detail below), also improve self-efficacy despite the fact that they are not intentionally efficacy building.

For example, Long (1984;1985) found that stress inoculation training or SIT (consisting of examining and replacing anxiety facilitating self-statements with incompatible self-statements through rehearsal using anxiety arousing stimuli) not only reduced anxiety but also improved general self-efficacy after 3 months and 15 months. Similarly, Jaremko (1980) found that SIT used to treat speech anxious subjects in a speech class reduced self-reported anxiety, and increased self-efficacy. Smith (1989) found that cognitive-behavioral copings skills training provided to test anxious college students improved specific self-efficacy regarding test anxiety management and academic performance.

It should be noted that the data regarding anxiety and motivation is correlational for the most part. Smith (1989) noted that although correlational data cannot make clear whether coping with anxiety increased self-efficacy or self-efficacy decreased anxiety, the relationship is likely a reciprocal one with coping skills contributing to and being positively influenced by increments in self-efficacy. Where there is no immediate

performance to base self-efficacy upon, but potential anxiety regarding a novel situation as would be the case with pretraining, or the anxiety of trying to apply new learning as in posttraining situations, it is reasonable to suggest that reducing anxiety regarding the training and training content should have positive effects on motivation prior to and following training.

Creating Psychological States

Thus far, the discussion has centered around examining psychological states and their relationship to motivation that may be useful for training motivation. States are, by definition, unstable and subject to influence. How they can be influenced in positive ways that may be beneficial to motivation has been examined in literatures outside of the training field.

Attribution

Social psychology research has examined attempts to change attributions to aid subsequent learning and performance. In general, the goal of these “attribution retraining” programs is to change unproductive attribution patterns such as attributing past failures to low ability (a stable, uncontrollable factor) which encourage helplessness and low self-efficacy. Instead, the retraining attempts to encourage in trainees constructive attributions such as effort or strategy (unstable, controllable) which promote efficacy, effort, and persistence. To do this, researchers have implicitly or explicitly drawn on the cues through which attributions are formed.

Kelley (1967; 1973) was one of the first to examine the cues individuals use to make attributions over repeated performance opportunities. Kelley suggests that when

individuals attempt to determine the causes of a person's behavior in the presence of an entity (e.g. person or situational factor), they examine covariation along three dimensions: consensus, distinctiveness, and consistency. Consensus examines whether others behave in a similar manner toward the entity. Distinctiveness examines whether the effect occurs when the entity is there and when it is not. Consistency is the consideration of whether an effect occurs each time the entity is present regardless of other factors. Kelley also suggests that people combine and synthesize information on these cues to determine patterns. The way these patterns emerge (i.e. the covariation of the entity and effects) determines the attributions made. High distinctiveness, consistency, and consensus will lead to entity attributions of causality. Low distinctiveness, low consensus, and high consistency leads to person attributions. Other patterns can lead to circumstance attributions, or joint ascriptions of causality. Kelley suggests that causal schemata may operate such that for some instances one cause may be perceived as sufficient to produce an effect, whereas in other instances single causes may be necessary but not sufficient. For example, some people may view success on a task as requiring either effort or ability, whereas others may view both as necessary but neither sufficient to yield success. Kelley suggests that for common events, people use a multiple sufficient cause schema indicating any of several factors are sufficient to be the cause. However, for more unusual or extreme events, we tend to use multiple necessary cause schemata. Kun and Weiner (1973) indeed found that descriptions of unusual events, e.g. a person's success at difficult tasks or failure at easy tasks, led subjects to indicate multiple causes were necessary to explain what happened (i.e. both ability and effort). The more

common failure on difficult tasks or success at easy tasks were ascribed to a single cause (i.e. either ability or effort) by subjects.

Weiner and colleagues (Frieze & Weiner, 1971; Weiner, 1974; Weiner & Kukla, 1972) have further examined the application of Kelley's principles to learning or performance situations (as opposed to social behaviors, like helping). They suggest a number of specific factors taken into account to determine the cause of performance. Specific cues such as past outcome history, social norms/consensus, maximum performance, pattern of performance, persistence of behavior, task characteristics, randomness of outcomes, changes in performance with incentive changes, and causal schemata may all be used by individuals in determining causes of performance. For example, if a person has shown a history of poor performance on a task, it will likely lead to ability attribution. However, if they have demonstrated high maximum performance (i.e. a peak in performance) this may lead to effort attributions as they have demonstrated the ability to do well. Likewise if performance increases with the incentive, effort attributions are more likely. Very random patterns of performance suggest luck attributions. Or, if consensus information indicates everyone does poorly, task attributions are likely.

Frieze and Weiner (1971) conducted an experiment in which they described an individual as having succeeded or failed, and gave subjects information on the distinctiveness, consensus, and generality (success or failure at similar tasks, like consistency) regarding performance and asked them to determine if the cause of success or failure was ability, effort, task difficulty, or luck. This research has produced patterns of attribution based on the cues such as: a) outcomes consistent with social consensus

tend to be ascribed to task characteristics; b) success tends to be ascribe to internal factors, failure to external; c) behaviors inconsistent with past performance are attributed to luck or effort; d) the greater success or failure in the past, the more likely are high or low ability ascriptions; e) ability attributions are primarily a function of past history. Frieze (1973) found that past history is the most dominant cue for determining ability judgments, although subsequent information is taken into account.

The research paradigm for this attribution work is to describe performance on a task, provide information about cues, and have subjects suggest what they perceive as the causes of performance. This means that people are typically rating the performance of others following a number of performance episodes. Attribution retraining, however, does not directly mirror this paradigm. Attribution retraining requires that individuals change their own potentially unproductive attributions about past performance to improve future performance. Research has implicitly or explicitly used the information regarding the attribution cues discussed above in order to produce this change.

Fosterling (1985) reviewed the literature on attribution retraining and points out the basic types of approaches that have been used. The most common approach was persuasion, in which an experimenter verbalized the desired attributions for failure such as lack of effort, prior to future performance (e.g. Anderson, 1983; Schunk, 1983). Often, no rationale was provided. The second most common method is modeling (e.g. Zoeller, Mahoney, & Weiner, 1983). These manipulations typically used videotaped stimuli of people (either “experts” or people similar to the subjects) attributing failure to effort/strategy and explaining that success was gained through persistence, effort, or strategy change. Some manipulations included models performing while a commentator

made attributions for the performance. A third approach was termed an “informational” approach (e.g. Wilson & Linville, 1982). This approach explicitly provided information on distinctiveness and consensus regarding task performance improvement through fake video interviews and provision of statistics on change.

Fosterling concludes that virtually all methods demonstrated good results, and have effects such as producing improved persistence, self-efficacy, increased expectancies, and performance across tasks such as college grades, visual discriminations tasks, and mathematics. Fosterling indicates that “highly generalized beliefs about causal attributions are not significantly influenced by the programs...[however,] attributions for success and failure at specific tasks that were similar to the training tasks were significantly changed” (p. 507). Thus, it appears that manipulating attributions in terms of “state-like” attributions is possible with well designed manipulations.

Anxiety Management

Like attribution retraining researchers, anxiety researchers have also attempted to examine ways in which state anxiety can be altered to allow for better learning and performance. Particularly for specific anxiety inducing tasks such as public speaking anxiety, mathematics anxiety, or social interaction anxiety.

Some literature has examined situational elements that can lead to anxiety, particularly in classroom or communication settings. A number of situational elements can cause anxiety, such as novelty, formality, subordinate status, conspicuousness, unfamiliarity, dissimilarity, degree of attention from others, degree of evaluation, and prior history can cause apprehension and anxiety regarding communication (Beatty, 1988; Buss, 1980; McCroskey, 1984). Being in a new situation or doing a new task such

as might be the case in training might make one feel anxious. The formality of the situation may induce anxiety when people perceive highly prescribed appropriate behaviors, whereas less formal situations have a broader range of acceptable behavior. Having a subordinate status, such as a student does in a classroom where a teacher creates the criteria for performance can create anxiety in a learning situation. This concept can be extended to a speaking situation in which the speaker feels the audience is more expert or superior even if the audience is other classmates. Standing out from others (conspicuousness) is suggested as a cause for anxiety for some, as is being unfamiliar with others in the class. Degree of attention, either too much (staring) or too little (being ignored) can cause a person to feel anxiety. The degree to which one is being evaluated may induce anxiety, as talking in public informally may be less anxiety producing than doing so for a grade. Finally, prior history of problems in an area can cause people to be apprehensive about their performance. Consistent with these factors, recent research has shown that high anxiety adult learners preferred informal classrooms and were peer oriented and non-authority oriented learners (Onwuegbuzie, 1997).

This suggests some initial steps trainers might use to decrease anxiety in the training setting. For example, increasing familiarity of participants with one another, creating a warm interpersonal climate with low formality, or attempting to make learners feel similar and equal in status with respect to the training topic. In addition, Schuh (1996) found that computer anxious learners felt less anxiety if the instructor had said or done something to alleviate their fears and apprehensions regarding working on a computer. Thus, trainers might be able to directly address anxiety about a topic by

discussing it. In addition, other research has examined more systematic anxiety reduction programs or techniques.

In their review of the anxiety control research, Barrios and Shigetomi (1979) point out that there are essentially five types of programs for anxiety management. Anxiety Management Training (Suinn & Richardson, 1971) consists of three primary phases: a) introduction of principles and training in relaxation; b) visualization of scenes associated with anxiety arousal with attention to feelings associated with anxiety and relaxation; and c) experience in anxiety induction and control. This technique focuses on having the person recognize when they are feeling anxious, and using it as a cue to calm themselves down. Detailed images of anxiety inducing and reducing situations are used to arouse and then reduce anxiety coupled with breathing and muscle relaxation techniques. The individual takes on increasing responsibility for starting the anxiety and reduction phases as training progresses.

Applied Relaxation (Goldfried and Trier, 1974) includes a number of specific programs involving recognition of tension, progressive relaxation training, and in vivo application. Although the specific programs vary in the use of anxiety hierarchies, imaging, or specific relaxation techniques (i.e. deepening, differential relaxation, etc.), they are centered on the idea of determining when tension arises, learning to relax the muscles in a purposeful way to reduce tension when it arises, and applying this relaxation in real situations.

Cue Controlled Relaxation (Russell & Sipich, 1973) is the third type of relaxation method. The aim is to achieve self-relaxation in response to a self-produced cue. The training involves two phases: a) training in deep muscle relaxation, b) repeated

association of the relaxed state with a self-produced cue such as the words “calm” or “control”. This method is an obvious outgrowth of conditioning in learning theory, although the person provides their own stimulus cue.

Self-Control Desensitization (Goldfried, 1971) is also an outgrowth of learning theory. Unlike normal systematic desensitization, subjects are explicitly told that the purpose is to actively learn methods to cope with anxiety. Clients are told they are going to learn how to relax, and use tension/anxiety as a cue to begin relaxation (i.e. they are responding to an internal propioperceptive cue, not an external cue). A hierarchy is constructed of varied situations eliciting increasing amounts of anxiety. Visualization is then used as subjects maintain the anxiety producing situation image in the mind despite the anxiety it arouses, and then relax away the tension. Increasingly anxiety arousing images are used as they get better.

Self-Statement Modification (SSM; Meichenbaum & Cameron, 1974) training is based on idea that anxieties depend on interpretations of situations. The goal is to change self-statements which elicit anxiety. Rational restructuring, cognitive restructuring, rational emotive therapy, and stress inoculation are types of SSM. The basic phases to SSM include: a) presenting idea that self-statements mediate anxiety; b) having clients become aware of self-statements during anxiety arousing situations; and c) teaching them to replace these with positive self-statements and behaviors through rehearsal with anxiety arousing stimuli. Training in relaxation is often included. Some versions of SSM include examination of the irrationality of beliefs that lead to negative emotions and accompanying self-statements, and others include coping techniques like getting information about feared object, physical relaxation, changing cognitive sets via

reappraisal and attribution, control of breathing and muscle tension and relaxation. It is clear that while the other methods focus primarily on coping through calming images and physical relaxation techniques, SSM includes the more cognitive examination and restructuring of irrational thoughts that may create or worsen anxiety.

Barrios and Shigetomi (1979) found some support for all methods as capable of reducing anxiety relative to control or placebo conditions using self-report and behavior measures of anxiety. The authors do suggest, however, that self-control desensitization had a literature marked with limitations such as lack of controls or mixed results more than the other techniques. The authors note that although the studies had flaws, “as a group, the studies generally support the effectiveness of coping-skills training for the treatment of anxiety. The majority of studies demonstrated substantial therapeutic effects in the form on increased behavioral performance and reduction of reported anxiety at both post-treatment and follow-up assessments” (p. 510). The authors note that evidence in support of generalized effects is less clear.

An important limitation of these studies is that they were conducted on clients who had been diagnosed to have anxiety issues ranging from general anxiety to specific anxieties such as test anxiety. Whether such training would help trainees faced with more mildly anxiety producing situations is unclear. Although the meta-analyses by Colquitt et al. (1998) found strong negative relationships between anxiety and motivation suggesting that techniques aimed at decreasing anxiety would benefit learners, it is unclear whether this finding is unique to trait anxiety, or whether the methods discussed above would benefit people not specifically diagnosed with a state anxiety problem such as test anxiety.

Learning Orientation Manipulations

A smaller literature in education and training has examined how to change learning orientation states. Unlike attribution and anxiety, specific well established and comprehensive programs have not yet been developed regarding how to change learning orientation. However, recall that the concepts differentiating mastery and performance orientations have led to the development of a number of specific manipulations intended to change the learner's orientation. Dweck (1989) notes that manipulating the salience and value of goals can change state orientations.

Researchers have used this idea to create manipulations aimed at changing orientation. Kozlowski et al. (1995) used instructions providing either specific performance goals in an attempt to change learning orientation. Performance goals were specific score values on a radar simulation task subjects were to attain, whereas learning goals were specific learning objectives they were expected to focus on. Since performance orientation is associated with a concern with demonstrating ability, Elliott and Dweck (1988) have used an observation manipulation to induce concern with performance and thus a performance orientation by filming subjects. Instructions have also been used to highlight the salience of learning or mastery situations. For example, in introducing a task, Dweck (1989) gave game instructions to mastery condition subjects, but test instructions to performance conditions subjects. Calling the task a game was used to induce a mastery orientation, whereas calling the task a test was expected to produce a performance orientation. Similarly, Stevens and Gist (1997) used instructions to manipulate learning orientation. They indicated to mastery condition subjects that they should use negotiation simulation episodes as an opportunity to practice skills.

Performance oriented conditions were instructed to use the simulations as an opportunity to achieve their best outcome.

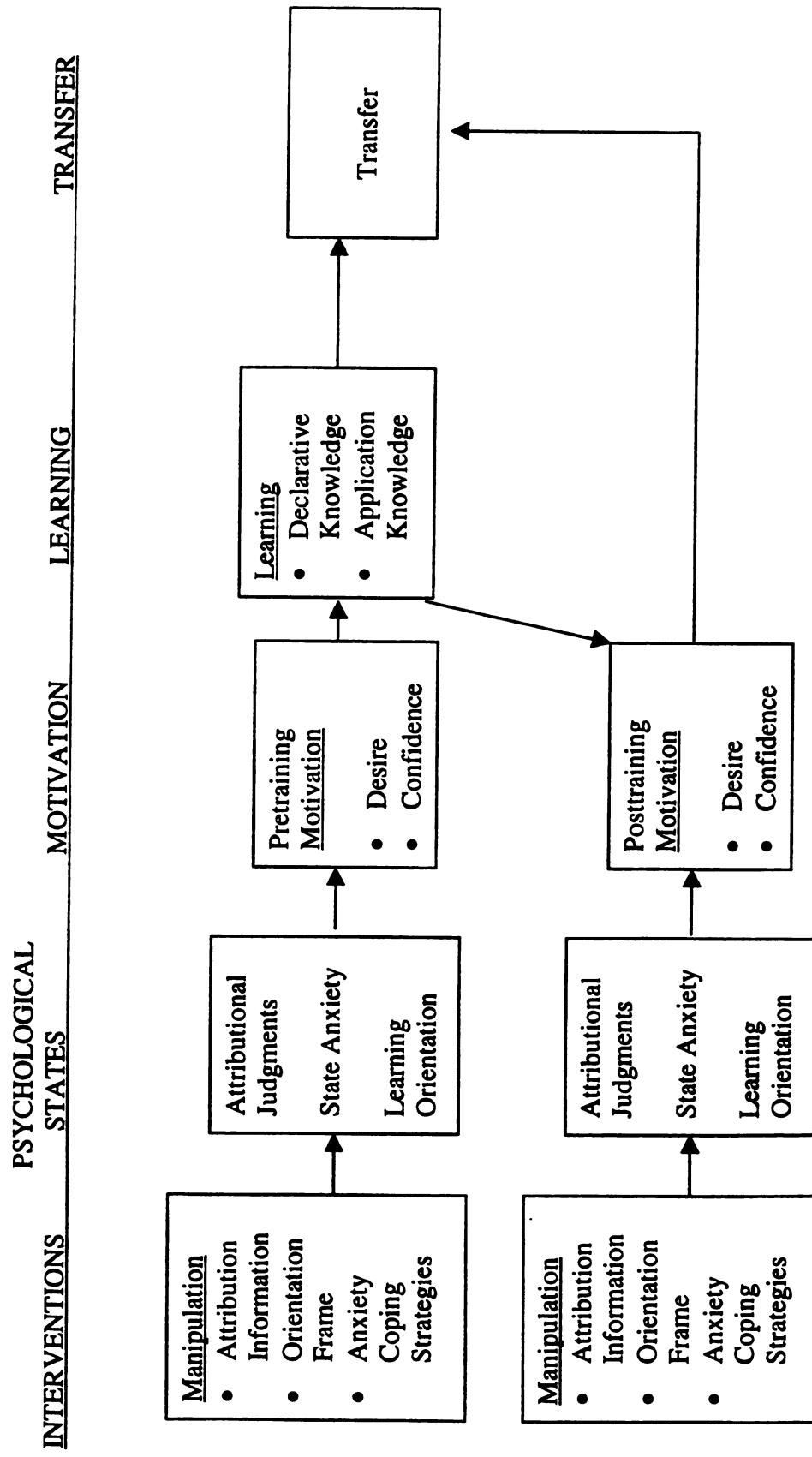
Ames and Archer (1988) suggest that teachers in classrooms can create mastery or performance oriented environments. Mastery environments have teachers that focus on whether students are improving, encourage students to try new things, and encourage hard work. Performance oriented classrooms encourage normative evaluation, discourage mistakes, and have competitive environments. These manipulations have led to expected patterns regarding perceptions of the importance of learning or performance, the impact of perceived ability and feedback on learning behavior (Elliott & Dweck, 1988), task preference, strategy use, attitudes, focus on ability (Ames & Archer, 1988), training performance, structural knowledge, strategy learning and performance (Kozlowski et al., 1995; 1996), maintenance activity, effort, affect, and attenuation of the efficacy-performance relationship (Stevens & Gist, 1997).

A Model of Psychological States, Training Motivation, and Outcomes

The model presented in Figure 2 is based upon several guiding assumptions. First, the model assumes that the learner is dynamic. That is, although trainees may come to training with particular predispositions and traits, they are also considerably dynamic, flexible, and open to influence based upon their perceptions of the particular situation and information they receive. A second guiding assumption is that motivation can be influenced. Rather than arriving at training with a given amount of motivation which will in part determine learning and transfer, or motivation to transfer. This model assumes that it is possible to use manipulations prior to and following training which can influence the

Figure 2

A Conceptual Model of Psychological States, Training Motivation, and Outcomes



degree to which a trainee is motivated. A third assumption is that pretraining and posttraining motivation are similar processes, and thus, similar person variables and manipulations of them may influence both pretraining and posttraining motivation. This assumption recognizes that the two are conceptually different and different environmental influences may occur at different times. However, the assumption is that they are sufficiently similar such that it is possible to identify person variables that influence motivation before or after training.

The model presented in Figure 1 will be described below (from back to front).

Transfer

Transfer of training involves the generalization and maintenance of what is learned in training to apply to a novel job context (Baldwin & Ford, 1988).

Generalization refers to applying what is learned to the new context, and maintenance refers to keeping up skills and their application over time. Generalization is similar to what Royer (1979) has called far transfer, which is distinguished from near transfer. Near transfer involves a stimulus set for the transfer event that is very similar to the learning event. Far transfer involves a stimulus set for the transfer event that is somewhat different from the stimulus set of the original learning. Similarly, generalization involves taking what is learned from the learning environment, and applying it in the transfer environment which is often dissimilar in important ways. For instance, the transfer task may be more complex, there may be less support, less guidance, less time, cues that are less clear about what learning to apply, etc.

Linking Learning and Transfer

Learning represents the acquisition of knowledge and skills during training.

Kraiger, Ford, and Salas (1993) advocate a multi-dimensional perspective on learning, and suggest that trainers and researchers be clear regarding the types of outcomes they are attempting to bring forth. One distinction put forth by Kraiger et al. (1993) is between cognitive and skill based outcomes. Cognitive outcomes refer to the quality and type of knowledge and the relationship among knowledge elements. Declarative knowledge is one type of cognitive outcome from training. Declarative knowledge is knowledge about facts or information (or knowledge about what; Anderson, 1982). Most theories of cognitive skill development indicate that declarative knowledge must precede higher order skill development. Therefore, declarative knowledge is one type of training outcome included in the model.

Kraiger et al. (1993) also distinguish declarative knowledge from skill based learning outcomes which involve the development of a skill. Gagne et al. (1992) likewise suggests that intellectual skills are learning outcomes, and differentiates them from motor skills. Learning an intellectual skill involves learning how to do something of an intellectual sort, from something as simple as identifying a rectangle to more complex such as identifying structural weaknesses in a bridge. What is learned in developing a cognitive skill is procedural knowledge (Anderson, 1985; Gagne et al., 1992). This involves learning the rules and if-then relationships that govern the task and being able to apply them. Therefore, skill acquisition represents the second component of learning included in the model.

Kirkpatrick's (1967) hierarchical model for training evaluation suggested that learning must occur before behavior change. Noe (1986) carried this notion forward in his model of training effectiveness. In their review and model of transfer, Baldwin and Ford (1988) likewise indicate that learning and retention is related to transfer. The better a person has learned information and skills, the more capable they are of applying them when needed in a new setting.

There are a number of reasons to expect that learning will lead to better transfer. As the maintenance aspect of transfer involves retaining what was learned in training over time in order to apply it as needed, one reason that learning should be related to transfer is simply that which was never learned cannot be maintained over time to be applied. If a person never learned an important skill in training, they will not be able to apply that information in the transfer environment. Likewise, the depth at which learners have processed information has been found to be related to their ability to recall the information (Craig & Tulving, 1979). Therefore, learners who have better learned knowledge and skills should be more likely to recall them when needed for transfer.

In addition to the need for good learning for maintenance, learning during training is important for generalization aspects of transfer. As mentioned, generalization requires trainees to exhibit trained behaviors in response to different settings, people, conditions, and situations than were present in training. The trainee must therefore demonstrate some capacity to adapt what has been learned to fit the new circumstances, or what has been called "adaptive expertise." Smith, Ford, and Kozlowski (1997) suggest that two learning processes are critical to the capability to adapt what has been learned. First, the trainee must develop a strong knowledge of the task domain that is effectively

organized in memory. The quality and content of the knowledge structure (variously termed scripts, schemas, mental models, or cognitive maps) that is developed during training determines the capability to adapt to novel circumstances. Expert novice research has shown that compared to novices, experts have knowledge structures that are broader and deeper, and contain links between problem types and problem solutions (Chi, Feltovich, & Glasser, 1981; Glaser & Chi, 1989). In addition, relative to those with poor knowledge structures, experts may be more aware of what to avoid doing in a situation and thus they are able to ignore irrelevant cues and access less irrelevant information (Patel & Groen, 1991). It is important for their ability to successfully adapt that trainees learn and develop good knowledge structures.

The second process important to adapting what has been learned according to Smith et al. (1997) is the developing of metacognitive skill. Metacognition is the awareness and control over one's cognitions (Flavell, 1979). Metacognition involves knowledge of aspects of the person, task, and strategy that allow for executive control, such as planning, resource allocation, strategy selection, and strategy evaluation (Kluwe, 1987). Metacognitive knowledge allows the trainee to know when there is a need to adapt, and to select effective strategies for the situation. As with knowledge structures, research shows that experts have better metacognitive capabilities than novices. Experts are more likely to discontinue ineffective problem solving strategies, have better understanding of the task, the ideal strategies, and their own performance strategies (Etelapelto, 1993; Larkin, 1983). Lack of metacognitive skill may lead to failures to use trained strategies (Day, 1986), or to identify when these strategies do not apply. It is important, then, that trainees learn enough to be able to successfully select and evaluate

their strategies in order to transfer their learning. These findings regarding expert's knowledge structures and metacognitive capabilities suggest that the depth and quality of learning will be important to the trainee's ability to generalize their learning to a novel situation.

Colquitt et al. (1998) found empirical support for the notion that learning is related to transfer. In keeping with the multidimensional perspective on learning advocated by Kraiger, et al. (1993), Colquitt and associates performed meta-analyses which examined both declarative knowledge and skill acquisition and their respective relationships to transfer as represented in the literature. The results of their meta-analyses indicated that declarative knowledge was moderately related to transfer (corrected correlation of .38) and skill acquisition was highly related to transfer (corrected correlation of .69), neither 95% confidence interval included zero. Therefore, the following hypothesis is offered:

HYPOTHESIS 1: Learning at the end of training, in terms of acquired declarative knowledge and demonstrated skill, will be positively related to transfer performance.

Training Motivation

Training motivation has been characterized in three essential ways: motivation to learn and transfer, self-efficacy, and VIE models (Mathieu & Martineau, 1997). While certainly useful methods, they have considerable overlap. For example, expectancies and self-efficacy are similar, although self-efficacy tends to be more encompassing in that it deals with confidence that one can exhibit behavior considering factors beyond effort (Gist, 1987). Similarly, some of the "motivation to learn" items used by Noe (1985)

reflect expectancy or efficacy such as “I will get more from this training than most people, while others capture instrumentality notions such as “the knowledge and experience I gain in this training may advance my career.” Valence notions in VIE conceptions (i.e. relative desirability of outcomes) also may be more relevant for choosing between training and other choices, or among training programs, rather than examining motivation for one particular program, they are more applicable for within subject studies.

It appears, however, that two common dimensions can be drawn from these ways of examining training motivation that are most critical for training effectiveness and particularly for the effects of person variables on motivation. The first is a “confidence” factor that captures the trainee’s belief that they are capable of learning and improving skills (or applying them and improving performance). This dimension is captured by the self-efficacy for learning or transfer concepts and effort to performance expectancy notions of the other models. Even if a person thought the skills were valuable, if they did not believe they could learn, improve, and apply them, the person may not see the point in devoting effort to attempting to learn or attempting to transfer. For example, many items drawn from Noe (1985) expectancy (one) and motivation to learn scales reflect the confidence element in pretraining motivation that they can learn and that effort will yield results. Trainees indicated the extent to which they believed that: skills can be improved in the training program, training will help improve skills, they could learn the material in the training program, they will get more from training than others, and if they did not understand something they would try harder.

The second basic dimension to training motivation for a training program is a desire element. This reflects that learning and transfer is something they desire. Often, such desire stems from what they can gain from it in terms of intrinsic or extrinsic outcomes, or some may value the information and skill in and of themselves. These concepts are captured in expectancy two (instrumentality) and valence concepts, or in the Noe's (1986) conceptions of motivation to learn as the desire to learn the contents of training. The extent to which a trainee desires learning and transfer (be it in and of themselves, or for outcomes they anticipate as a result), the more enthusiastic they may be, and more willing to put forth and sustain effort. Therefore, pretraining motivation is examined here as the confidence that one can improve during training, and the desire to learn in training. Posttraining motivation will be examined here as the confidence one can transfer the learning and the desire to transfer the learning.

Posttraining Motivation and Transfer

The extent to which the learner has a desire to transfer and is confident that they can transfer what they have learned to the training environment should lead the trainee to increased levels of transfer (Baldwin & Ford, 1988; Noe, 1986). Although some have suggested that posttraining motivation moderates the effect of learning and transfer, this proposition has not garnered much empirical support (e.g. Noe & Schmitt, 1986). Instead, this model suggests a direct effect of posttraining motivation on transfer. The desire to apply what is learned in the transfer environment either for intrinsic or extrinsic rewards, and the confidence that the effort invested to do so will get results, should lead to the willingness to investment of effort and persist until successful. Although there has not been a great deal of research examining the effects of posttraining motivation, there are

some findings which support the idea that posttraining motivation will lead to transfer (Baumgartel, et al., 1984; Huczynski & Lewis, 1980; Gist, et al., 1991; Stevens & Gist, 1993; Colquitt, et al., 1998).

HYPOTHESIS 2: Posttraining motivation will be positively related to transfer.

Those more confident that they can apply what was learned, or higher in their desire to apply what they learned will have higher transfer scores.

Learning and Posttraining Motivation

Successful acquisition of knowledge and skills in training may lead trainees to be more motivated to use this training. This is particularly true in terms of confidence that the trainee can transfer what he or she has learned. Bandura (1982) indicates that “enactive mastery” or successful performance is one way in which self-efficacy can be improved. Those who have come through training and successfully mastered the content of the training are more likely to feel confident that they can transfer the training than those who have not mastered the material. Feltz (1982) found that with increased experience, the effect on past performance diminished and recent performance became more important. In the posttraining environment, the trainee has their experiences in training which reflect the amount of knowledge and skill they have acquired to draw on to determine their level of confidence that they will be able to transfer their knowledge. In addition, it is possible that trainees who have invested the effort to learn during training will see more use in putting that training to use, and potentially allowing it to pay off. Colquitt et al. (1998) found that knowledge and skill were both positively related to

self-efficacy following training, however motivation to transfer per se was unrelated to knowledge outcomes and positively related to skill outcomes, but the 95% confidence interval included zero (variance unaccounted for suggested moderators). The following hypothesis is offered:

HYPOTHESIS 3: Learning will be positively related to posttraining motivation.

Those higher in declarative knowledge and skill acquisition will be higher in motivation to transfer.

Pretraining Motivation and Learning

Current theory and research also support the link between pretraining motivation and training outcomes in terms of learning. The more effort that is aroused and directed toward learning the better the learning should be, all else being equal. As Noe (1986) writes “trainees who are enthusiastic about attending the program and desire to learn the content of the training program are likely to acquire more knowledge and skills...than trainees not motivated to learn” (p. 743). People high in their confidence and desire to learn are likely to put forth more effort, maintain the effort in the face of difficulty, show less cognitive withdrawal, and set higher goals leading to better learning in training (Bandura, 1986; Noe, 1986; Stevens & Gist, 1997). Research has supported the contention that those higher in confidence that they can learn and improve (Colquitt, 1998; Gist, 1989; Gist, et al., 1989; Mathieu, et al., 1993; Martaccio & Webster, 1992; Warr & Bunce, 1995; Webster & Martaccio, 1993) or who desire training (Baldwin, Magjuka, & Loher, 1991; Warr & Bunce, 1995) will demonstrate better learning outcomes. Therefore, the following hypothesis is offered:

HYPOTHESIS 4: Pretraining motivation will be positively related to learning.

Those who desire to learn the training content and are confident that they can will demonstrate better learning than those lower in pretraining motivation.

Psychological States and Training Motivation

The present model suggests that psychological states are related to training motivation. Although the focus on motivation before training may be on learning, and posttraining the focus is primarily on transfer, the nature of this motivation remains essentially the same. One's confidence and desire are considered critical in the literature both before and after training. This is particularly true as the motivation is related to person factors that may influence them. Whether before or after training, the same relationships are likely to hold between the psychological state and the motivation for learning or transfer. Therefore, the relationships between psychological states and pretraining and posttraining motivation are considered together.

A number of individual difference factors which have been treated as stable individual differences in the training literature are expected to impact training motivation. The current model draws from the pretraining models of training motivation to suggest that attributional judgments, learning orientation, and state anxiety, may impact pretraining motivation and posttraining motivation.

Attribution

Attributions are judgments regarding the causes of events or performance (Weiner, 1972). These judgments can impact our motivation as our expectations regarding future performance are thus based in part about our perceptions of what caused

past performance (Weiner, 1985). Particular causes vary along dimensions, including stability, controllability, and locus. In training situations, it would appear that people are least likely to be motivated if they perceive that stable causes, uncontrollable causes, or external causes are the determinants of learning and transfer. On the other hand, if the causes of learning and transfer are thought to be internal, unstable, and controllable, the learners will feel that they are able to improve and perform and are likely to be more confident, put forth more effort and overcome initial challenge (Diener & Dweck, 1978; Licht & Dweck, 1984; Martaccio, 1984). In particular, the most beneficial attributions would thus be to attribute performance to effort and strategies (Anderson, 1983; Wilson & Linville, 1985). The most potentially unmotivating would be to attribute performance to stable causes such as ability or personality traits.

Learning Orientation

Learning orientation is a state that reflects the way the learner views the learning situation. Mastery oriented learners view the situation as a chance to improve skills and increase competence. Performance oriented learners approach the learning situation as an opportunity to demonstrate ability, attain positive judgments, and avoid negative judgments (Dweck, 1986). Although initially thought to be inversely related (i.e. opposite ends of the same spectrum), recent research has demonstrated that the two orientations may be independent (Ford, Smith, Weissbein, Gully, & Salas, 1997; Fisher, 1998). The primary concern here is with the benefits to the learner of having a mastery orientation.

As research shows that mastery oriented learners have demonstrated greater self-efficacy, seek challenge, challenge, persist more, enjoy exerting effort, put forth more

effort, are more motivated to attend training, and seek out development (Dweck, 1986; Dweck & Leggett, 1988; Farr et al, 1993; Kozlowski et al, 1995), it is certainly likely that those with a state mastery orientation will be more likely to desire training and be confident with respect to learning.

One issue is whether mastery orientation is likely to be beneficial in a posttraining environment. In a posttraining environment, the focus is on application rather than learning per se. The learning orientation research to date has not examined mastery and performance orientations in non-learning or educational settings. Some might suggest that in a posttraining environment, it is better to be performance oriented consistent with the application of learning. However, the concept of transfer of training is primarily concerned with the application of the knowledge and skills gained in training. Although this is assumed to lead to performance, this may not always be the case. Often, initial attempts to transfer training involve potential difficulties and may lead to error and decrements in performance. A trainee concerned only with performance may have the tendency to avoid the risk element associated with transfer and stick to what they know. This is consistent with the ideas in relapse prevention put forth by Marx (1982) that in transfer environments fraught with pressure, trainees may be tempted to slip back to established modes of behavior to attain performance even though it may be detrimental to transfer in the long run. This slip may lead to relapse. Recall that Gist et al. (1990) found that a self-management course following training (which has been considered more learning oriented in later studies such as Steven and Gist, 1997) led to greater use of multiple strategies and generalization. A more performance oriented goal setting manipulation following training led to greater use of shallow repetition strategies.

On the other hand, those with a mastery orientation focus on skills and learning rather than performance. A mastery oriented person might be expected to seek the challenge of applying different skills, and not be discouraged by possible decrements in performance, but use them as feedback for learning and opportunities to hone their skills. Therefore, a mastery orientation may be beneficial for posttraining motivation as well as pretraining motivation.

Anxiety

State anxiety is a learned, temporary feeling of fear. State anxiety is characterized by subjective, consciously perceived feelings of tension, apprehension, nervousness accompanied by or associated with physical arousal such as the autonomic nervous system. Anxiety states may vary in intensity and fluctuate over time with the stresses on the individual (Spielberger, 1977). Some have suggested that there are cognitive components that contribute to state anxiety, mediating between arousal and anxiety, such as irrational beliefs and self-statements (e.g. Meichenbaum & Cameron, 1974). State anxiety can be aroused by anticipation of painful stimuli such as an electric shock, or uncomfortable situations such public speaking, or confrontation. Some people have anxiety regarding working in particular areas such as computers or mathematics. Since anxiety is a negative form of arousal, it tends to be negatively associated with motivational variables. Those who have math anxiety or test taking anxiety thus associate work in these areas with negative arousal which can be detrimental to motivation. In training, one might expect that particular types of subjects may arouse anxiety such as computer training or negotiation training (e.g. Martocchio, 1994; Gist et al., 1991), or even training itself may be anxiety arousing for those with bad experiences in training.

Likewise, one might feel anxiety about applying what is learned on the job. Because the job environment is typically less supportive, with more pressure and less guidance (Marx, 1982), many may feel anxious about transferring what they have learned to the job, and this is likely detrimental to motivation to transfer.

The literature reviewed earlier described several studies that have demonstrated that high state anxiety is negatively related to motivational variables. The meta-analyses by Colquitt et al. (1998) found that dispositional anxiety was negatively related to pretraining self-efficacy and motivation to learn. Likewise, state anxiety has been shown to negatively related to motivational variables such as pretraining self-efficacy (Bandura, 1982; Jex & Gudanowski, 1992; Martaccio, 1994; Pentz, 1981; 1977; Warr & Bunce, 1995; Webster & Martaccio, 1993), posttraining self-efficacy, motivation for training (Warr & Bunce, 1995), and expectancy (Feinberg & Halprin, 1978). Some suggest that self-efficacy moderates the relationship between training methods and anxiety, as well (Gist, et al., 1989; Saks, 1994). Based on this research, it is expected that state anxiety will be negatively related to pretraining and posttraining motivation.

Based on the discussions regarding psychological states above, the following hypotheses are offered:

HYPOTHESIS 5A: Psychological states are expected to related to pretraining motivation. Specifically, the extent to which a person believes that performance is attributable to causes that are unstable, controllable, and internal such as effort or strategies will be positively related to pretraining motivation. The extent to which a person adopts a state mastery orientation prior to training will be positively

related to the person's pretraining motivation. And, the extent to which a person is low in state anxiety will be positively related to pretraining motivation.

HYPOTHESIS 5B: Psychological states are expected to related to posttraining motivation. Specifically, the extent to which a person believes that performance is attributable to causes that are unstable, controllable, and internal such as effort or strategies will be positively related to posttraining motivation. The extent to which a person adopts a state mastery orientation after training will be positively related to the person's posttraining motivation. And, the extent to which a person is low in state anxiety will be positively related to posttraining motivation.

Manipulating Psychological States

Research suggests a number of factors that can influence attributions, learning orientation, and state anxiety. The literature reviewed on attributions demonstrated that providing information through modeling, experts, or direct provision regarding consistency,

Recall that Fosterling (1985) reviewed the attribution retraining literature and suggested that persuasion, modeling, and informational manipulations all appeared to be effective at manipulating attributions regarding the specific task or situation. An examination of the underlying methods used suggests that it should not be surprising that all methods appear to work well since most use essentially the same process: supplying consensus, distinctiveness, and consistency information (Kelley, 1973; Wilson & Linville, 1982). The experiments in which the experimenters provided attributions to the

subjects by verbalizing them might be very similar to having experts give information. The subjects likely perceive the experimenter as “expert” of sorts who has seen performance across multiple subjects, and thus knows the difficulty of the task (probably better than the subjects), and the effort put forth relative to others who have performed. These assumptions likely act as de facto consensus information about the task and effort levels.

Likewise, models that were used are often people who have preceded the current subjects and have experiences which make them similar to the subjects in relevant ways. This allows the subjects to draw consensus, information about performance such as “many people struggle at first but they improve.” They can provide distinctiveness by suggesting that when the entities of effort or strategy were absent, they failed, but when they were present, success was the result. Finally, they provide consistency information (specifically, that consistency is low) by suggesting that they were able to improve. The models and persuasion attempts therefore implicitly use the same fundamental cues as the “informational” method, they just do so implicitly rather than explicitly. The critical aspects appear to provide information regarding consensus, distinctiveness, and consistency that lead to attributions of performance on the specific task to unstable, controllable, internal factors like effort or strategy.

Regarding anxiety, Barrios and Shigetomi (1979) examined the five types of anxiety reduction programs: Anxiety Management, Applied Relaxation, Cue Controlled Relaxation, Self-Controlled Desensitization, and Self-Statement Modification. All appeared to have gained positive results and decreasing anxiety for specific stress inducing situations (and some for generalized anxiety). While the attribution retraining

literature focused on convincing trainees to adopt constructive attributions through information provision regarding covariation, the anxiety control training functions primarily through provision of coping mechanisms. Although they come from somewhat different viewpoints on the origins of anxiety and means to reduce it (cognitive vs. learning theory), the various programs use self-observation, physical relaxation (breathing, muscle relaxation), imaging, and rational restructuring methods to recognize the onset of anxiety, and cope with it sufficiently to perform during the anxiety inducing task.

Finally, the learning orientation literature demonstrated a number of specific manipulations can be used to alter learning orientation. For example, learning goals (Kozlowski et al., 1995), task versus game framing (Dweck, 1989), and practice for mastery versus demonstrate performance framing (Stevens & Gist, 1997). These findings together suggest that one powerful way to influence learning orientation is through framing that alters the salience of learning relative to the importance of demonstrating competency. Instructions or settings that encourage learning, exploration, and using errors as learning opportunities have lead to mastery orientations and outcomes. Whereas tasks framed in ways that encourage demonstrating competency, competitiveness, and maximal performance encourage performance orientations and outcomes.

Combining Treatments

The literatures on attribution retraining, anxiety management, and learning orientation each suggest important ways in which particular individual variables can be treated in ways that should enhance motivation and training effectiveness. However, each literature has shortcomings as well.

One of the primary shortcomings of these literatures is the population on which the manipulations are typically employed. The attribution and anxiety management literatures each tended to use subjects that had been pre-selected based on their level of anxiety or maladaptive attributions. Likewise, much of the learning orientation literature is founded primarily on work involving school children in academic settings.

Although selecting people with attributional problems or who have sought treatment for anxiety problems is an appropriate method for examining whether such treatments are effective at helping those who need them, this paradigm leads to questions of the extent to which the findings will generalize to a population of trainees not specifically chosen for having specific attribution or anxiety patterns. The training literature suggests that such training may be beneficial, as anxiety and attribution are related to learners' motivation. However, the extent to which these manipulations can and will work for an average set of trainees representing a normal distribution of anxiety and attributions regarding training is not clear.

Likewise, although there is some recent work on manipulating learning orientation conducted on college students (e.g. Kozlowski et al., 1995; 1996) much of the learning orientation work has been conducted on children in school settings. Children may be more malleable regarding their learning orientation and more responsive to manipulations. Although it is likely that learning orientation can be manipulated in adult learners, at present the evidence is rather limited that this can be accomplished, particularly in the absence of specific learning goals and performance goals.

Another issue that must be considered is the length of many of the programs for anxiety and attribution change. Often, these programs are conducted over a number of

different settings over the course of several weeks (Barrios & Shigetomi, 1979; Fosterling, 1985). The anxiety sessions may start in a therapy session and conclude with application of relaxation techniques as applied during the course of daily activity. Some attribution retraining sessions are shorter, or single manipulations such as videotapes, whereas others involve several sessions of modeling, feedback, and reinforcement for particular attributions. Therefore, whether a single shorter manipulation such as would be used before a training program would be powerful enough to effect motivation is uncertain.

These concerns together create some concern regarding whether a single session manipulation of a duration that would allow it to precede training, conducted on a sample of normal adult trainees, would be powerful enough to effect change in motivation to learn. Any of the manipulations strategies alone, be it employing techniques for anxiety reduction, framing training to induce a mastery orientation, or persuasion of trainees to attribute performance to effort and strategies, might not be powerful enough to elicit a change in motivation to learn prior to training. Particularly when trait levels of these attributes would presumably be normally distributed among trainees. This is particularly a concern when experimental manipulations tend to produce weaker effects than real life situations (Sackett & Larson, 1990).

Furthermore, it is not altogether clear that the manipulations would not have crossover effects and impact other state variables. For example, inducing a mastery orientation may also reduce anxiety. Eliciting effort and strategy attributions for performance may lead to more of a mastery orientation. It is not clear that these manipulations will affect one and only one of the related psychological states.

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Since each manipulation takes a somewhat different approach to altering motivation, but in the same direction, elements of the various programs may be integrated to produce a single manipulation which would attempt to frame the training in a mastery oriented way, provide coping strategies for anxiety felt by trainees, and persuade them through the provision of information that success in training will not be due only to stable, uncontrollable, or external factors but will be due to their effort and strategies. Hopefully, by creating a single manipulation which incorporates the strengths of each of the techniques, a single manipulation can be created which is powerful enough to impact states, and thus motivation before and after training.

Therefore, the following hypotheses are offered:

HYPOTHESIS 6A: The presence of the motivational manipulation before training will be related to psychological states before training. Specifically, presence of the manipulation prior to training should be positively related extent to which people attribute performance in training to effort or strategies. Presence of the manipulation will be positively related to the extent to which people adopt a state mastery orientation for training. And, presence of the manipulation will be negatively related to the perception of state anxiety before training.

HYPOTHESIS 6B: The presence of the motivational manipulation following training will be related to psychological states before transfer. Specifically, presence of the manipulation after training should be positively related extent to which people attribute transfer performance to effort or strategies. Presence of the manipulation will be positively related to the extent to which people adopt a state

mastery orientation for transfer. And, presence of the manipulation will be negatively related to the perception of state anxiety before transfer.

The model, through the hypotheses outlined above, suggests some important mediation relationships. First, the purpose of the manipulation is to impact pretraining and posttraining motivation. The mechanism suggested here is to impact motivation inducing the appropriate psychological states. There is research that suggests that manipulations impacting these psychological states impacts resulting motivation. For example, Kozlowski et al. (1995) found that a pretraining mastery goal manipulation had a positive effect on self-efficacy. Likewise, anxiety manipulations have been shown to not only lower anxiety, but also increased self-efficacy (Jaremko, 1980; Long, 1984; 1985; Smith, 1989). Attribution retraining has shown positive impact on expectancy, and self-efficacy (Fosterling, 1985). The mediational hypotheses can thus be offered:

HYPOTHESIS 7A: Presence of the manipulation before training will be positively related to pretraining motivation, and this relationship will be mediated by the psychological states.

HYPOTHESIS 7B: Presence of the manipulation following training will be positively related to the extent of posttraining motivation, and this relationship will be mediated through the psychological states.

A number of other important mediated relationships are implied by the model. Pretraining motivation is expected to impact learning (Hypothesis 4). Learning and is expected to have a direct impact on transfer (Hypotheses 1). These relationships together

form the mediational hypothesis indicated below regarding the impact of pretraining motivation on transfer:

HYPOTHESIS 8: Pretraining motivation will be positively related to transfer, and this relationship will be mediated through learning.

The model also suggests a number of comparisons that can be made comparing the impact of pretraining manipulation versus posttraining manipulation, both or a no manipulation control group. Previous research has examined a number of posttraining manipulations like goal setting and relapse prevention, and compared them to one another. Posttraining manipulations have the advantage of being focused directly on transfer, and occurring proximally to transfer in time. However, posttraining manipulations have the disadvantage of coming after the learning event. It may be that the earlier one is able to intervene in the process, the better off the results will be. Recall that learning is expected to improve transfer as those who learn better may be more able to retain the information, have better formed knowledge structures, and metacognitive knowledge important to generalization and maintenance. Thus, if a person enters training with better motivation, this is likely to lead to more learning (Hypothesis 4) and thus more motivation to transfer (Hypothesis 3) and ultimately transfer (Hypothesis 8). By intervening before learning, one may be able to have more impact than intervening after training. To determine whether this is the case, we can compare a group that receives the manipulation prior to training to one that receives the manipulation only after training. These groups can be compared to groups that receive the manipulation both before and after training, and a control group receiving no manipulation. Having both pretraining

and posttraining manipulations may be the best of both worlds if the trainer has the time. This could allow for the positive impact of learning with a pretraining manipulation, but also get a “booster” session following training to encourage posttraining motivationn focused on transfer. Any discouragement or new issues that may have occurred during learning which might decrease the impact of the pretraining manipulation can be overcome with the posttraining manipulation. There currently appear to be no studies which study the relative efficacy of using an intervention pretraining, posttraining, or both. The following hypotheses are offered regarding the relative impact of the intervention on training outcomes when applied before training, after training, both, or neither. The first hypothesis suggests learning will be better for groups with the pretraining manipulation relative to those without it:

HYPOTHESIS 9A: Groups that receive the pretraining manipulation (pre only and pretraining with posttraining) will demonstrate better learning than either the no intervention control, or a posttraining only group. The pretraining only and pretraining with posttraining groups will demonstrate equivalent amounts of learning.

The next hypotheses suggest that if one can only manipulate before or after training, before may be better for transfer. Again, this hypothesis is based on the idea that it is better to intervene earlier when one can have a positive impact on learning than after learning is completed, since learning is important for transfer.

HYPOTHESIS 9B: Pretraining intervention only manipulation groups will have better transfer than the control group or the posttraining only group.

The final hypothesis suggests that the most impact on transfer may occur with both pretraining and posttraining manipulations.

HYPOTHESIS 9C: The Pretraining with posttraining manipulation group will demonstrate the most transfer of all groups.

METHOD

Sample Characteristics

Participants. Participants in this study were 119 be undergraduates at a major Midwestern university. Students received partial course credit for their participation. Students were recruited through the psychology department subject pool, as well as direct recruiting from some classrooms with permission from the professor (with agreement to provide extra credit equivalent to that of the subject pool).

Measures

This section describes the measures used in this study. The full measures are included in Appendix A.

Learning Orientation. Learning orientation was measured with Likert-type items using a five point scale from strongly disagree (one) to strongly agree (five). Two scales were developed, one for use before training and the other for after training. The scales follow the same format, the primary difference being that the pretraining scale focuses on their orientation toward training, and the posttraining scale focuses on participants' orientation toward the negotiation simulation. The scales contain two dimensions: mastery orientation, and performance orientation. The performance dimensions were adapted from Brown (1998). The mastery orientation items were based in part on Fisher (1997) and Brown (1998). However, many items could not be used due to construct overlap evident in the content of the items. Therefore, items were written to reflect the definition of mastery oriented learners and avoid overlap with motivation to learn or attribution constructs. The dimensions selected to reflect mastery were viewing the experience as an opportunity to gain new skills, seeking challenge, experimenting, and cooperation with

others to learn. Example items in mastery are, “I will seek challenge during the training to help me learn” and “I will experiment and try things that might not work during the training if I think they will help me learn.” An example of a Performance orientation item is, “I plan on doing better than other trainees throughout this course.”

Attribution, like learning orientation, was measured with two scales similar in form but used before and after training. The scales followed the same format, but the pretraining scale concentrated on their attributions regarding becoming a good negotiator, and the posttraining scale focused on applying their learning. The scales contained 20 Likert-type items that ask subjects the extent to which they agree with statements that suggests different causes for performance or application of knowledge: personality, ability, strategies, effort, and their opponent. Personality and ability represent internal, stable, uncontrollable causes. The opponent is an external, unstable, uncontrollable cause. Effort and strategies reflect internal controllable, unstable causes. A sample item from the personality dimension is “To be a successful negotiator you have to have the right personality.” A sample item from the effort dimension is, “Anyone can become a successful negotiator if they invest the effort.” A sample item from the strategy dimension is, “Knowing the right techniques and methods is what makes for a successful negotiator.” A sample item from the ability dimension is, “Intelligence is what makes a good negotiator.” A sample item from the opponent dimension is, “The opponent is the most critical factor in determining negotiator success or failure.”

State Anxiety was measured using the State-Trait Anxiety Inventory (STAI) for Adults by Spielberger et al. (1986). The scale is designed to measure the temporary condition of state anxiety. The state anxiety scale consists of 20 items that ask people to evaluate the

way they feel “right now, at this moment”. Instructions were modified slightly to include a reference to reflect their feelings regarding the training or final simulation. Sample items include “I feel at ease,” “I feel tense,” and “I feel jittery.”

Pretraining and Posttraining Motivation were measured with three scales using 5 point Likert-type items ranging from strongly agree (five) to strongly disagree (one). The pretraining and posttraining scale each had a confidence dimension and a desire dimension as well as five items indicating the subject’s willingness to invest effort. The desire items were adapted in part from Noe’s (1985) motivation to learn scale. The confidence scale is adapted from similar scales in Brown (1998) and Ford et al. (1997). The willingness to invest effort items were created for this study. The pretraining scale asks subjects to respond to items suggesting they are confident they can do well in training, that they have the desire to learn the material, and that they are willing to invest effort to learn. The posttraining scale asks subjects to respond to items suggesting they are confident they can apply what they have learned, that they have the desire to apply what they have learned, and that they were willing to invest effort to apply what they learned. A sample confidence item is “I am confident I can apply what I have learned in this training.” A sample desire item is, “I am motivated to use the skills emphasized in the training program.” A sample from the willingness to invest effort scale is, “I am going to put forth a lot of effort if needed to learn the material.” In addition, the posttraining confidence measure included ratings of participants’ confidence that they know when to use, and can use, each of the specific strategies presented in training. These items will be rated on a Likert-type scale from very confident (five) to not at all confident (one).

Supplements to Motivational Measures were also be gathered in several forms. One assessment was providing optional exercises made available to participants following training. Completing an optional activity on one's own time was expected to reflect a stronger motivation to apply one's learning. One item was included to assess the extent to which subjects completed the optional exercise from not at all to fully completed the exercises and considering how to improve.

In addition, before leaving the training, participants were provided with a list of interim activities that would them prepare for the final negotiation. Just prior to the negotiation simulation (i.e. the transfer task described below), they completed a 16 item preparation activity assessment to indicating whether or not they performed any of the suggested activities, and how much time they spent on each in minutes. Engaging in optional preparatory activities reflects motivation to apply what they have learned.

Knowledge Assessment took place in several forms. First, there was a ten-item written quiz adapted from Gist et al. (1990) which describes each strategy or when a strategy should be used. The participant must place the name of the correct strategy in the blank.

A second learning measure involved being able to identify the strategies when they see them occur. An audio tape was presented in which two negotiators engaged in 12 strategy behaviors taught in the training (note, the 12 items as 2 strategies are repeated). The participants listened to the tape and followed along on a script. As they heard the name of a strategy, they wrote the strategy next to where it appeared on the script. They were given one and one half minutes to complete any they missed after the tape concluded.

The final learning measure was an application measure that served as a partial demonstration of skill. It was an adaptation of a measure developed by Stevens and Gist (1998) to analyze what they call the “synthesis” level of learning which involves recall, comprehension, organization and integration of concepts into a coherent framework that can be applied to many situations. This measure is akin to the type of application knowledge measure used in Fisher and Ford (1998).

In the measure, the participants were given a brief scenario involving a negotiation between two people. The participants determined and described what was going on in the scenario, and what the best approach would be to allow one of the negotiators to regain momentum. Correct answers involve accurately identifying what was happening (e.g. what strategies the sides are using), and what the appropriate responses would be for the participant in question. The answers were rated blind to condition on a 6-point scale.

Transfer Performance was measured using the procedure developed by Gist et al., (1990).

A salary negotiation scenario was given to the participants at the end of the first day to allow them time to prepare. The participant’s role described a person applying for a job, their strengths, problems, and desires. All participants received the same scenario. The participant returned in 2 days to engage in a one-on-one negotiation to obtain the best offer they could.

Transfer of training involves applying knowledge and skills gained in training back on the job. Transfer typically involves some aspects of generalization to a new task and environment, and maintenance over time. This task involved generalization in a number of ways, and some small amount of maintenance.

A number of elements from the training were different in the transfer task. The task was more complex as the scenario is fairly detailed and required participants to extract the points they covered. In addition, the transfer task involved salary negotiation, whereas salary negotiation was avoided in the training examples for the most part requiring the application of their knowledge to a different topic area. Moreover, there was no predetermined structure in any of their training exercises, but the transfer task has a definite scoring structure described below. Trying to operate under a structure and determine its nature in order to perform well suggests another way they had to try to generalize their learning from the freeform exercises to the more restrictive and challenging scoring structure. Finally, the transfer involved a one-on-one format with a negotiator they did not know. It was designed to simulate a real salary negotiation situation with everyone starting from the same point both in salary offer and strengths and weaknesses. Maintenance was required to a small extent as they signed up and had to recall their training from 2 days prior.

The scoring of the transfer task was standardized by units of \$250 of increase in salary offer. The first time a particular strategy was used by a participant, they were rewarded with a four-unit increase (\$1000) in salary offer. The second time a strategy was used, they got a two-unit increase (\$500). The third time, they received a one-unit increase (\$250). After the third time a given strategy was used, they received no increase. There were also scripted in at specific salary levels “attacks” which consist of negative non-verbal behaviors or insults to the role the person was playing to provide some sense of interpersonal risk, and to allow the person to use their reactive strategies for dealing with these types of maneuvers. Participants were not told the scoring scheme, but the

scheme was designed to reward those who used multiple strategies first and foremost, but also those who remained persistent in using strategies several times.

Negotiator Assessment was collected in order to ensure that the difficulty between confederate negotiators did not vary systematically across groups on the final simulation. A measure was taken from the measure used by Gist et al., (1990) and involved rating the extent to which a number of adjectives describe the negotiator during the simulation. A sample item is “disagreeable.” The ratings were made on a five point Likert-type scale from “not at all like the negotiator” (one) to “very much like the negotiator” (five).

Trait Measures of the state variables were also included in the data collection. The trait version of the State-Trait Anxiety Inventory (STAI) was given to assess trait anxiety. This measure was 20 Likert-type items similar to those in the state measure with instructions directing respondents to indicate how they generally feel. The measure was scored on a five-point scale from almost never (one) to almost always (five) A sample item is, “I feel nervous and restless”. The locus of control scale used was an 11-item scale of Likert-type items from Andrisani & Nettle (1976), these items represent the more adult and work-oriented items from the Rotter (1976) scale. The items were rated on a five point scale from strongly disagree to strongly agree. A sample items is, “What happens to me is of my own doing.” Two eight-item scales from Button, Mathieu, & Zajac (1996) were used to assess mastery and performance orientation. These were scored on five point Likert type scales from strongly disagree to strongly agree. An example of a mastery oriented item is “I try hard to improve on my past performance.” An example of a performance oriented item is, “I like to work on tasks I have done well on in the past.”

Procedure

Participants arrived and received a brief explanation of the experiment, what was involved, and what they could expect. They then completed the informed consent form. Each subject was assigned a subject number to ensure confidentiality on all subsequent measures. Subjects in the pretraining intervention and pre/post groups then received the pretraining intervention.

The pretraining intervention consisted of three basic phases, designed to impact psychological states that were expected to be important to pretraining motivation. The first phase of the intervention involved attribution retraining. This training was designed to encourage strategy and effort attributions for success in becoming a good negotiator, and avoid personality, ability, or opponent attributions. The former attributions were considered adaptive in a learning context as they are controllable, unstable, and internal. Participants viewed a videotape of male and female models of a similar age who suggested that they had some doubts regarding whether they could get better as a negotiator, and/or whether they had the necessary personality or ability. However, the models suggested that with effort, and by concentrating on learning and using the strategies, they were able to improve. This was consistent with giving informational cues used to form attributions. Specifically, the cues suggested that negotiation skill is unstable and controllable. They suggested that the consensus was that effort and strategy are critical and that improvement is possible. They also suggested distinctiveness in that when effort and strategy are present, the trainees got better.

The second phase of the intervention was concentrated on anxiety. Subjects were told that it is common for people to worry that they will not be able to learn or apply their

learning due to anxiety regarding negotiation. A discussion about anxiety and negotiation took place and some basic techniques for dealing with anxiety were taught such as cognitive restructuring (examining negative self-talk and the underlying irrationality and replacing it with positive self-talk), breathing, muscle tensing and relaxation, and imaging.

The final aspect of the intervention was a mastery frame. Instructions were given to subjects that encouraged them to approach the training as a learning opportunity. They were told that they should cooperate, not be afraid to make mistakes, not be afraid to ask question, focus on improving and learning, and experiment. They were reminded that everyone present was a novice thus they were all in the same boat, so they should focus on learning as much as they can instead of worrying about looking good in front of their peers or trying to show how much they know.

Next, all subjects took the pretraining attribution, state anxiety, and learning orientation measures followed by the pretraining motivation measures.

Once the measures were collected, the training commenced. The style of the training was classroom instruction with discussion and modeling. Some exercises were imbedded to provide practice or reinforce important points. The training was developed based upon training conducted by Gist and colleagues (Gist et al, 1990; Gist et al., 1991; Steven & Gist, 1997). However, the training had to be reconstructed as the original authors provided little of their original material. Furthermore, the material was considerable in scope and depth as the original training took six to eight hours and was delivered to MBA students. The training was paired down, and made more suitable for undergraduates. The focus was taken off of salary negotiation per se and applied to

negotiation strategies for any use in basic one-on-one negotiation. The same ten strategies covered in the original training based upon principled bargaining and assertiveness were maintained. The training consisted of a brief introduction to negotiation, ending with a focus on principled “win-win” bargaining. Next, five active strategies were presented: a) attitudinal bargaining which involves confidence and contained enthusiasm; b) appeals to interests which involves disentangling positions and interests, and determining what is important to the opponent underlying their position to justify your request; c) contrast effects which involves creating a sense of relativity by furnishing objective standards for comparison; d) proposing options for mutual gain such as contingent options or special qualities about your goods or services; and e) compensatory offers, or asking for things outside of the main area of concern which could also fulfill interests.

The training then covered reactive strategies. These strategies involved ways to deal with what an opponent is doing during the training. The strategies covered were: a) maintaining silence to indicate an unacceptable offer or incomplete answer; b) placing issues before resolution to avoid a quick termination to negotiation; c) a broken record approach when the person is ignoring what you are saying; d) a tactful direct counter to tricks or aggressive posturing; and e) fogging or “negotiation jujitsu” to an attack on you or your position which involves acknowledging the attack, turning it into a discussion about the underlying issue, or turning the comment into a strength. (See Appendix B for training program material.)

At the end of training, subjects completed the learning assessments. First, they completed the declarative knowledge quiz in which they matched the strategy to its use or

description. Next, they took the strategy identification test in which they identify strategies as they were used by negotiators on tape. Finally, they took the application assessment that required them to read a scenario, describe what is happening and what should be done next.

Following the learning assessments, those subjects in the posttraining only intervention condition and pre- and posttraining intervention sessions received the posttraining intervention. For the posttraining only group, this training essentially followed the pretraining intervention in form and content but the focus was on application rather than training. For the pre- and posttraining group, the posttraining intervention reemphasizes the key points regarding the three psychological states but focussed on application rather than on the learning in training. The video for the posttraining manipulation emphasized how by using the posttraining strategies they were given and putting some effort into applying the strategies they learned, they were able to succeed even if they had doubts regarding their personality, ability, or opponent. Anxiety about the negotiation simulation was discussed, and anxiety as a barrier for applying their learning was also be discussed. The cognitive restructuring and techniques for stress reduction was covered or reviewed. Finally, the posttraining intervention emphasized taking a mastery orientation toward the negotiation simulation. Elements stressed were trying to use it as an opportunity to practice using their skills, trying different strategies, not being afraid to take some risks, and similar mastery oriented concepts.

All participants then completed the psychological states measures for attributions, state anxiety, and learning orientation, as well as the posttraining motivation measure. Before leaving, participants will signed up for a time for the negotiation simulation and

received the scenario, preparation activities sheet, and optional exercises consisting of several brief scripts in which they had to identify the strategy used. The answers were provided at the end of the exercises. Attempts were made to keep the simulation as close to 48 hours following the simulation for all subjects. Scheduling difficulties caused some variation, but rarely more than a few hours.

Upon returning 2 days later for the simulation, the participants faced a negotiator unfamiliar to them (i.e. not the trainer nor a participant in the training). The negotiator dressed in “business casual” attire. The negotiator first had the participant complete the pre-negotiation questionnaire asking about preparation activities and the optional exercise. The confederate then brought the participant in, recorded the time the session began, and started at the standard fee following a basic script. Negotiator confederates were trained to negotiate the same way each time to the extent possible. They were trained to identify strategies as they are used during the negotiation to record them and change the offer accordingly. At the standard salary levels, the negotiators responded with the same nonverbal and verbally aggressive behaviors to allow subjects to use their direct counter and jujitsu strategies. The simulations lasted between five and 25 minutes depending on how many strategies were used, how successful the attempts were, and how persistent the participant was. The negotiation concluded when the participant agreed to an offer or the maximum amount was reached (which occurred only once). The confederate recorded the time the session concluded.

Following the negotiation simulation, the participants completed a post-simulation questionnaire which will include an evaluation of the confederate’s behavior, any self-set salary goal and any change in this goal, and finally the trait measures of

anxiety, learning orientation, and locus of control were included. The participant were then debriefed, thanked, and excused with credit for participation.

RESULTS

Study Design

The design of the study was treated as a 1 X 4 with the four factors being different intervention strategies (control, pre only, post only, and both pre and post). Treating the design this way takes into account the similarity of the pretraining intervention and the posttraining intervention. Although they are different in that the pretraining intervention is aimed at motivation to learn and the posttraining intervention is aimed at motivation to transfer, the similarity of the interventions and the psychological states makes this more appropriately treated as four levels of intervention than a 2 x 2. This design appropriately deals with any dependency in the data as far as pretraining and posttraining measurement and intervention are concerned. In addition, the types of comparisons that have been suggested by the hypotheses compare across groups receiving different levels of intervention which can be handled appropriately by a 1 x 4. That is, hypotheses 9A, B, and C require comparisons of groups that have received the pretraining intervention with those that have not, and comparisons of the pretraining only and pre-post group with the other groups. These comparisons are possible using the 1 x 4 design as discussed, examining the control, pre-only, post-only, and pre with post as four levels of treatment.

Factor Analyses

As a first step to analyzing the data, the questionnaires were factor analyzed to determine the underlying factors represented in the data. Separate exploratory factor analyses were conducted on the pretraining questionnaire, the posttraining questionnaire, and one on the trait scales and remaining measurements that took place after training. All analyses were run using principle-axis extraction with varimax rotation. Initially the

criteria was set for eigen values greater than one. However, as this appeared to extract too many factors further analyses were run assigning a number of factors to extract. Scree tests, interpretability of the factors, and parsimony were also used as criteria to determine the optimal number of factors.

The pretraining questionnaire was given to participants after any manipulations but prior to the start of the negotiation training material. The questionnaire contained the pretraining states of anxiety, attributions (personality, effort, ability, opponent, strategy), and learning orientation (mastery and performance) scales. In addition, this questionnaire contained motivation for training scales of effort, desire, and willingness to invest effort. The factor analyses indicated a six-factor solution to be the best. The first factor which emerged from the pretraining questionnaire was a “Pretraining Motivation” factor. The separate scales of desire, confidence, and willingness to invest effort did not distinguish themselves but all tapped one underlying factor. In addition, and less intuitively, the pretraining mastery orientation state scale also fell into this factor. Indeed, scale content suggests that a state mastery oriented person is quite likely to be motivated to learn. One item which was dropped from further analysis was an item from the “pretraining confidence” scale which suggested that the individual expected to do better in training than others. This item tended to cluster with performance orientation items rather than the other learning related confidence items. The second and third factors that emerged from the factor analyses of the pretraining questionnaire were state anxiety factors. Although the anxiety items split along an “anxiety present” and “anxiety absent” distinction, it appeared to be merely an issue of direction. The fourth and fifth factors included the state attribution scales. These scales most parsimoniously factored into two scales. One of

these was a Stable/Uncontrollable (SU) Attributions factor that included personality, opponent, and ability items. High scores on this factor represented attributions generally thought negative for learning as they indicate aspects of the person or the situation over which the individual has no control and/or they are thought to be stable causes. The other state attribution scale that emerged was a Unstable/Controllable (UC) Attributions factor. This factor was comprised of items that represented the two attributions that were expected to be positive for learning: effort and strategy attributions. The sixth and final factor was a Pretraining Performance Orientation factor. This was comprised of items from the performance orientation scale. Hence, it appeared that state performance orientation was separable from motivation to learn, whereas mastery orientation appeared to be an aspect of the motivation to learn factor.

The posttraining questionnaire was given to participants following training and any posttraining manipulation prior to leaving for the end of the first session. The questionnaire was comprised of virtually the same items, with the exception that the items were focused not on learning the material but on being able to apply the material in the negotiation simulation. The factor analyses showed a parallel factor structure to the first questionnaire. The motivational scales of confidence, desire, and willingness to invest effort were all part of an underlying Posttraining Motivation factor, which also included the posttraining mastery orientation items. There were two of the confidence items that did not load cleanly on this factor and were dropped, item one (as before) and item two (I am confident I will do well in the negotiation simulation). As with the pretraining questionnaire, there were two Posttraining Anxiety factors (one of which was much larger in this case) and two attributional factors. The anxiety factors appeared to

break down along anxiety present/anxiety absent as in the first analysis. The two attribution factors were the SU and UC factors found in the pretraining questionnaire. The final factor was the performance orientation factor, with the exception that one of the items (item three which involved avoiding mistakes) did not load cleanly with this factor but cross loaded with the SU attributions and was dropped.

A final factor analysis included a number of scales that were collected after the negotiation simulation was completed. This included the trait measures of anxiety, locus of control, performance orientation, and mastery orientation. In addition, items serving as a potential control that examined perceptions that the negotiator was intimidating were included in this analysis as they were taken as part of the final questionnaire. This factor analysis indicated that there was a Trait Anxiety factor comprised of the anxiety items, a Trait Performance Orientation factor (with item seven dropped), a trait Mastery Orientation factor, a Negotiator Intimidation factor, and a Locus of Control factor. The Locus of Control factor, however, was comprised of seven of the 11 items from the scale. The remaining items cross loaded and/or were not a clear part of any factor and were dropped (the locus of control items dropped included two, four, ten, and 11). The factor loadings for all 3 analyses are found in Appendix C.

The factors were used to create scales. As the split in the factor analyses for the anxiety scale appeared to be primarily an issue of direction of the items (anxiety present, anxiety absent) and not fully consistent, the decision was made for parsimony to form one anxiety scale for pretraining and one for posttraining including all anxiety items. Scale internal consistency reliabilities appeared to be acceptable for these scales with only Locus of Control demonstrating $\alpha < .7$, the remaining scales indicated coefficient

alphas of .80 or greater. Table 1 contains the descriptive statistics for each of the scales and related variables.

Correlations

The correlations among the variables are presented in Table 2. All correlations greater than or equal to .19 are significant at the $p < .05$ level unless otherwise specified. As expected, measures of trait analogs of many of the state variables included were related to important variables. In some cases, these relationships provide validity evidence for the state measures by indicating a nomological network. For example, state and trait anxiety measures were correlated significantly (where trait anxiety correlated $r = .57$ with pretraining and $r = .53$ with posttraining anxiety). Trait anxiety was also significantly negatively correlated with trait mastery orientation ($r = -.32$) and locus of control ($r = -.30$, where internal locus was scored higher). Consistent with previous literature trait anxiety was also negatively correlated with pre- and posttraining motivational variables (pretraining $r = -.25$, posttraining $r = .24$).

Trait mastery orientation was positively related to motivation ($r = .56$ pretraining and $r = .54$ posttraining) which is to be expected as the state mastery orientation scale is contained in these measures based on the factor analytic results. Trait mastery orientation was also positively related to having an internal locus of control ($r = .23$).

A trait performance orientation was significantly related to subjects' pretraining performance orientation state ($r = .27$) and posttraining performance orientation state ($r = .31$). Trait performance orientation was also significantly related to stable/uncontrollable attributions before training about learning ($r = .28$) and after training about performance ($r = .33$).

Trait locus of control measures scoring internal locus higher were significantly, positively related to unstable, controllable attributions before training ($r = .25$), and negatively related to stable, uncontrollable attributions before ($r = .28$) and after ($r = .33$) training. Locus of control was also negatively related to pretraining performance orientation ($r = -.20$) and perceptions that the negotiator was intimidating ($r = -.25$).

Together, these trait measures are correlated significantly with their state indicators but not so highly as to indicate that they are identical. The pattern of correlations is consistent with previous research and creates a consistent nomological network of personality states and traits.

In some cases, the traits were related to outcome measures of interest. Consistent with findings that a performance orientation is not ideal for learning, trait performance orientations were negatively related to scores on the declarative knowledge test ($r = -.29$) and the strategy recognition test ($r = -.25$). Trait mastery orientation and locus of control were related to salary negotiated ($r = .20$ in both cases).

Also of note was the fact that, as expected, pretraining state measures and posttraining state measures were strongly correlated: for example pre- and posttraining measures of anxiety ($r = .66$), SU attributions ($r = .77$), UC attributions ($r = .64$), motivation ($r = .82$), and performance orientation ($r = .65$) were all strongly correlated.

The correlations also provide some initial evidence that at least some of the states are related to training motivation before and after training. For example, pretraining motivation (to learn) was significantly related to pretraining anxiety ($r = -.19$), posttraining anxiety ($r = -.28$), pretraining UC attributions ($r = .34$), posttraining UC attributions ($r = .43$), pretraining performance orientation ($r = .25$) and posttraining

performance orientation ($r = .27$). Similarly, posttraining motivation was significantly related to posttraining anxiety ($r = -.28$), pretraining UC attribution ($r = .34$), posttraining UC attributions ($r = .43$), pretraining performance orientation ($r = .28$) posttraining performance orientation ($r = .31$).

The criteria of learning and performance also demonstrated some patterns of correlation. The learning measures were significantly related to one another, the declarative knowledge test correlated with the strategy recognition test $r = .27$, and the strategy recognition test correlated with the application knowledge ratings $r = .30$. The declarative knowledge test was not significantly, related to the application knowledge rating ($r = .10$). Pretraining and posttraining anxiety were positively related to the declarative knowledge score ($r = .21$ and $r = .15$ respectively), but negatively related to the other learning measures, with the posttraining anxiety and strategy recognition score reaching significance ($r = -.19$). Some anxiety appears to have been related to better performance on the simpler declarative knowledge test, but in the more involved measures of learning anxiety was detrimental. Unstable controllable attributions also appear to have been beneficial to learning in terms of the application knowledge rating ($r = .19$ pretraining, $r = .18$ posttraining) but stable, uncontrollable attributions were negatively related to scores on this test ($r = -.23$ pretraining, $r = -.32$ posttraining).

A number of factors appear to have been related to the score on the negotiation simulation (scored salary increases in \$250 units). Attributions appear to have impacted salary in the negotiation simulation. UC attributions measured pretraining were significantly related to salary $r = .22$, and posttraining UC attributions related to salary $r = .30$. Interestingly, SU attributions were not significantly related to salary. Performance

orientation was related to salary $r = .23$. Pretraining and posttraining motivation were both related to salary, $r = .21$ for pretraining motivation, and $.29$ for posttraining motivation. In terms of knowledge, only the strategy recognition test was significantly related to salary performance ($r = .19$).

Before conducting further analyses, an ANOVA was performed using the Negotiator Intimidation scale score as a dependent variable, and negotiator as an independent variable was conducted to determine whether the negotiator confederates behaved differently or at least were perceived as systematically different. The F-test was not significant indicating that the raters were not perceived systematically as different.

Table 1

Descriptive Statistics

| Variable name | # Items | Mean | SD | Alpha |
|---|---------|-------|-------|-------|
| Sex ¹ | 1 | .34 | .47 | - |
| Formal Negotiation Training ² | 1 | .00 | .18 | - |
| Professional Neg. Experience ³ | 1 | .01 | .29 | - |
| Declarative Knowledge Test Score | 10 | 6.84 | 1.55 | - |
| Strategy Recognition Test Score | 11 | 6.75 | 2.05 | - |
| Application Knowledge Rating ⁴ | -- | 3.04 | 1.27 | - |
| Trait Anxiety | 20 | 44.86 | 11.37 | .92 |
| Trait Mastery Orientation | 8 | 32.49 | 4.29 | .88 |
| Trait Performance Orientation | 7 | 27.43 | 4.61 | .88 |
| Trait Locus of Control | 7 | 24.74 | 3.61 | .67 |
| Negotiator Intimidation Perceptions | 8 | 16.24 | 4.51 | .76 |
| Pretraining Anxiety | 20 | 39.89 | 13.48 | .95 |
| Posttraining Anxiety | 20 | 37.03 | 12.93 | .94 |
| Pretraining SU Attributions ⁵ | 12 | 33.45 | 7.50 | .89 |
| Pretraining UC Attributions ⁵ | 8 | 31.24 | 4.12 | .84 |
| Posttraining SU Attributions | 12 | 31.34 | 8.45 | .91 |
| Posttraining UC Attributions | 8 | 33.15 | 3.69 | .88 |
| Pretraining Perf. Orientation | 4 | 11.47 | 2.66 | .80 |
| Posttraining Perf. Orientation | 3 | 8.59 | 2.29 | .86 |
| Pretraining Motivation (to Learn) | 24 | 92.68 | 12.38 | .95 |
| Posttraining Motivation (to Transfer) | 20 | 78.76 | 10.60 | .96 |
| Preparation Activities | 16 | 6.66 | 3.77 | .81 |
| Self-Efficacy to Recognize Strats. | 11 | 40.80 | 5.35 | .79 |
| Self-Efficacy to Use Strategies | 11 | 39.91 | 5.47 | .80 |
| Salary Units (\$250 increments) | -- | 18.53 | 9.86 | -- |

¹ Sex coded 1= male, 0 = female

² Had formal training =1, none = 0

³ Had professional neg. experience = 1, none = 0

⁴ Rated 1 to 6

⁵ SU = stable uncontrollable causes; UC = Unstable Controllable causes

Table 2
Intercorrelations

| Variable Name | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| 1. Condition Number | | | | | | | | | | |
| 2. Sex | -.19* | | | | | | | | | |
| 3. Formal Training | -.03 | .07 | | | | | | | | |
| 4. Professional Experience | .03 | -.04 | .26* | | | | | | | |
| 5. Trait Anxiety | .10 | .03 | -.16 | -.19* | | | | | | |
| 6. Trait Mast. Orientation | -.06 | .02 | .09 | .08 | -.32* | | | | | |
| 7. Trait Perf. Orientation | -.03 | -.05 | .00 | -.04 | .17 | -.09 | | | | |
| 8. Trait Locus of Control | .11 | -.18 | -.02 | .09 | -.30* | .23* | -.11 | | | |
| 9. Pretraining Anxiety | -.06 | .00 | -.02 | .11 | .57* | -.12 | -.06 | -.17 | | |
| 10. Posttraining Anxiety | .05 | .12 | -.04 | -.12 | .53* | -.30* | .04 | -.12 | .66* | |
| 11. Pretraining SU Attrib. | -.44* | .36* | .00 | -.13 | .04 | .01 | .28* | -.38* | .00 | .02 |
| 12. Pretraining UC Attrib. | .24* | -.28* | -.07 | .10 | .02 | .13 | .02 | .25* | .01 | -.08 |
| 13. Posttraining SU Attrib. | -.38* | .31* | -.10 | -.12 | .05 | .05 | .33* | -.36* | .03 | .09 |
| 14. Posttraining UC Attrib. | .11 | -.21* | -.02 | .03 | -.09 | .19 | .07 | .15 | -.12 | -.13 |
| 15. Pretraining Perf. Orient | -.07 | .12 | .02 | -.02 | .17 | .07 | .27* | -.20* | -.03 | -.06 |
| 16. Posttraining Perf. Orient | -.12 | .29* | -.01 | .02 | .03 | .17 | .31* | -.10 | -.04 | -.05 |
| 17. Pretraining Motivation | .17 | -.04 | .07 | .08 | -.25* | .56* | -.09 | .13 | -.19* | -.28* |
| 18. Posttraining Motivation | .03 | .05 | .07 | .16 | -.24* | .54* | -.07 | .14 | -.10 | -.28* |
| 19. Preparation Activities | .18 | .08 | .02 | .24* | -.19* | .30* | -.03 | .25* | -.21* | -.14 |

Table 2 (Cont'd)

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------------------------------|------|-------|------|------|-------|------|-------|-------|-------|-------|
| 20. Self-Effic. Recognize | .11 | -.02 | -.04 | -.03 | -.30* | .26* | -.16 | .16 | -.19* | -.35* |
| 21. Self-Effic. Use Strat. | .09 | -.04 | .04 | .00 | -.31* | .38* | -.12 | .21* | -.19* | -.46* |
| 22. Preparation Time | .10 | .11 | .15 | .38* | -.07 | .23* | .01 | .21* | .01 | .01 |
| 23. Optional Exercise | .02 | -.03 | -.10 | .07 | -.03 | .05 | -.10 | .10 | .03 | .05 |
| 24. Declarative Knowledge Test | .00 | .12 | -.01 | -.08 | .07 | .03 | -.29* | .04 | .21* | .15 |
| 25. Strategy Recognition | -.12 | .03 | .09 | .17 | -.16 | .05 | -.25* | .09 | -.07 | -.19* |
| 26. Application Knowl Test | .22* | -.25* | .22* | .17 | -.07 | .00 | .05 | .17 | -.09 | -.10 |
| 27. Salary (\$250 Units) | .10 | .06 | -.08 | .04 | -.15 | .20* | .01 | .20* | -.10 | -.08 |
| 28. Negotiator Perceptions | -.03 | .08 | .00 | .06 | .23* | -.17 | .08 | -.25* | .21* | .22* |

Table 2 (Cont'd)

| Variable Name | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|-------------------------------|-------|-------|-------|------|------|------|------|------|------|------|
| 12. Pretraining UC Attrib. | -.25* | | | | | | | | | |
| 13. Posttraining SU Attrib. | .77* | -.21* | | | | | | | | |
| 14. Posttraining UC Attrib. | -.12 | .64* | -.25* | | | | | | | |
| 15. Pretraining Perf. Orient | .31* | .15 | .32* | .18 | | | | | | |
| 16. Posttraining Perf. Orient | .33* | .00 | .38* | .03 | .65* | | | | | |
| 17. Pretraining Motivation | -.09 | .34* | -.06 | .43* | .25* | .27* | | | | |
| 18. Posttraining Motivation | -.02 | .32* | .02 | .43* | .28* | .31* | .82* | | | |
| 19. Preparation Activities | -.05 | .13 | -.02 | .20* | .12 | .22* | .43* | .40* | | |
| 20. Self-Effic. Recognize | -.13 | .10 | -.08 | .02 | -.06 | .13 | .37* | .38* | .25* | |
| 21. Self-Effic. Use Strat. | -.14 | .15 | -.09 | .09 | .00 | .15 | .36* | .42* | .26* | .77* |
| 22. Preparation Time | -.11 | .21* | .03 | .25* | .10 | .09 | .35* | .34* | .63* | .10 |
| 23. Optional Exercise | -.07 | .02 | -.11 | .09 | -.04 | .06 | .10 | .08 | .37* | .07 |
| 24. Declarative Knowl Test | -.04 | -.06 | -.08 | .02 | -.02 | .08 | .04 | .07 | .11 | .15 |
| 25. Strategy Recognition | .02 | -.06 | -.09 | .00 | -.06 | .04 | .08 | .06 | .21* | .13 |
| 26. Application Knowl Test | -.21* | .19* | -.32* | .18 | .04 | -.03 | .04 | .05 | .16 | .08 |
| 27. Salary (\$250 Units) | .00 | .22* | -.03 | .30* | .23* | .11 | .21* | .29* | .25* | .01 |
| 28. Negotiator Perceptions | .23* | .00 | .23* | .07 | .13 | .01 | .03 | .09 | .01 | -.03 |
| 29. Negotiation Goal | .11 | .29* | .11 | .34* | .22* | .03 | .16 | .22* | .08 | .09 |
| 30. Revised Neg. Goal | -.06 | .20 | .00 | .31* | .11 | -.13 | .20 | .33* | .31* | .14 |

Table 2 (Cont'd)

| Variable Name | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 21. Self-Effic. Use Strat. | | | | | | | | | |
| 22. Preparation Time | .10 | | | | | | | | |
| 23. Optional Exercise | .11 | .26* | | | | | | | |
| 24. Declarative Knowl Test | .04 | .06 | -.02 | | | | | | |
| 25. Strategy Recognition | .09 | .13 | .17 | .27* | | | | | |
| 26. Application Knowl Test | .04 | .09 | .17 | .10 | .30* | | | | |
| 27. Salary (\$250 Units) | .12 | .18 | .11 | .02 | .19* | .06 | | | |
| 28. Negotiator Perceptions | .00 | -.02 | -.23* | .07 | -.14 | -.14 | .13 | | |
| 29. Negotiation Goal | .11 | -.01 | -.11 | .03 | -.15 | -.11 | .42* | .36* | |
| 30. Revised Neg. Goal | .24 | .39* | -.05 | .16 | .09 | -.05 | .66* | .39* | .63* |

Hypothesis Tests

Hypothesis 1 suggested that learning at the end of training would be positively related to transfer performance. To test this hypothesis, a hierarchical regression was performed as shown in Table 3. In this analysis, transfer performance (in terms of salary units attained in the negotiation simulation) was the dependent variable. Although there was a desire to keep control variables to a minimum to preserve degrees of freedom, since previous research (Gist et al., 1990) has found sex to be related to negotiation performance, sex was included as a control variable when transfer performance was the dependent variable. In addition, as some people reported that they had previous formal negotiation training which could impact negotiation performance, this too was included as a control when negotiation performance was the dependent variable. Thus, the first step of this regression sex, and formal training were entered to control for any potential effects of these variables. In the second step of the regression, the set of learning measures was entered: the declarative learning test score, application knowledge ratings, and the score on the strategy recognition test. For the first step neither of the beta weights for the control variables were significant. The second step of the regression had a significant $\Delta R^2 = .07$. This effect was primarily due to strategy recognition test score ($\beta = .25^*$) as neither of the other learning measures had a significant regression weight. This suggests that those subjects who demonstrated better learning on the strategy recognition test were more likely to demonstrate better transfer performance. These finding suggest support for Hypothesis 1, with the strategy recognition test being the most efficacious measure of learning.

Hypothesis 2 suggested that posttraining motivation would be positively related to transfer performance. A hierarchical regression was performed first with sex and formal training as control variables as before, then using the significant learning measure as a covariate in the second step and posttraining motivation in the third to determine if posttraining motivation impacted transfer performance over and above the impact of learning. As seen in Table 4, the control variables again were not significant, but both the strategy recognition measure of learning and posttraining motivation were significant. The learning measure accounted for significant variance in transfer ($\beta = .24$; $\Delta R^2 = .06$). Posttraining motivation was also a significant predictor of transfer performance ($\beta = .28$, $\Delta R^2 = .07$). This demonstrates that even controlling for the effects of learning on performance, posttraining motivation is a significant predictor of transfer performance. Hypothesis 2 is thus supported.

Hypothesis 3 stated that learning would be positively related to posttraining motivation. To test this hypothesis, the multiple regression shown in Table 5 was performed with the posttraining motivation scale score as the dependent variable, and the learning measures (declarative knowledge, strategy recognition, and application knowledge) entered as a set. The $\Delta R^2 = .01$ which was not significant. None of the regression weights for the learning measures reached significance. Hypothesis three was therefore not supported.

Hypothesis 4 stated that pretraining motivation would be positively related to learning. To test this hypothesis, zero order correlations between the learning measure and pretraining motivation were examined (see Table 2). The correlations between pretraining motivation and declarative learning ($r = .04$), strategy recognition ($r = .08$),

and application knowledge ($r = .04$) were each not significant. Thus, correlations did not support the presence of the hypothesized relationship between pretraining motivation and any of the learning measures. Hypothesis 4 is therefore not supported.

Hypothesis 5A stated that the pretraining psychological states would be positively related to pretraining motivation. Hypothesis 5B suggested that the posttraining psychological states would be positively related to posttraining motivation. As shown in Table 6, to test Hypothesis 5A, when pretraining motivation scale score was used as the dependent variable the set of trait measures (anxiety, mastery orientation, performance orientation, and locus of control) were entered as controls on the first step. The second step included the set of psychological states measured before training. Both the traits in step one ($\Delta R^2 = .30$) and states in step two ($\Delta R^2 = .12$) accounted for significant variance in pretraining motivation. Trait mastery orientation was most responsible for the variance in the first step ($\beta = .48$) as none of the regression weights for the other traits was significant. Pretraining UC (unstable, controllable) attributions ($\beta = .17$) and performance orientation ($\beta = .27$) were significant and accounted for the variance in the second step. Anxiety and SU attributions did not have significant regression weights. These results suggest that even over and above the variance accounted for by traits, the perception that learning as due to the unstable, controllable attributions of effort and strategies, and the higher one's performance orientation the more motivated the individual was to learn. Hypothesis 5A is therefore supported. The same analysis was performed to examine Hypothesis 5B as shown in Table 7, but using posttraining motivation as the dependent variable and posttraining psychological states as independent variables in the second step (with traits in the first step). Again, both traits ($\Delta R^2 = .28$) and states ($\Delta R^2 = .20$)

accounted for significant variance in posttraining motivation. As with pretraining motivation, trait mastery orientation was the only trait with a significant regression weight ($\beta = .37$) and only the states pretraining UC attributions ($\beta = .30$) and performance orientation ($\beta = .33$) had significant regression weights in step two. Again, over and above the effect of traits on pretraining motivation, the state of UC attribution and performance orientation account for significant variance in posttraining motivation. Hypothesis 5B is therefore supported.

Hypothesis 6A stated that the presence of the motivational manipulation prior to training would be related to the psychological states. Specifically, the extent of attribution to effort or strategies (UC attributions), mastery orientation, and lower anxiety were expected to be related to the pretraining manipulation. Hypothesis 6B suggested the same thing but for the effects of the posttraining manipulation on the posttraining psychological states. Tables 8, 9, 10, and 11 present the analyses testing Hypothesis 6A using each of the pretraining states as a dependent variable. For each analysis, a dummy code was created to code for the presence or absence of the motivational manipulation (1 or 0 respectively) which was entered in the second step, after controlling for the traits in the first step. Table 8 shows that the traits accounted for significant variance, with locus of control appearing to account for most of this variance as it was the only trait to have a significant regression weight ($\beta = .27$). In the second step, the pretraining manipulation proved to be a significant predictor of UC attributions ($\Delta R^2 = .06$, $\beta = .26$). Table 9 also demonstrates that the traits and states accounted for significant variance in SU attributions. The traits accounted for significant variance in SU attributions ($\Delta R^2 = .22$), with trait performance orientation ($\beta = .27$) and locus of control ($\beta = -.39$) having

significant regression weights. This demonstrates that a performance orientation is positively related to stable, uncontrollable attributions and an internal locus of control is negatively related to these attributional states. In step two, the pretraining manipulation accounted for significant variance in SU attributions ($\Delta R^2 = .39$, $\beta = .15$). Table 10 demonstrates that although traits accounted for significant variance in pretraining performance orientation (with trait performance orientation having a significant regression weight, $\beta = .24$), the pretraining manipulation did not account for variance in pretraining performance orientation. Likewise, Table 11 demonstrates that although trait anxiety was a significant predictor of pretraining anxiety ($\beta = .58$, $\Delta R^2 = .33$) none of the other traits were significant nor did the pretraining manipulation entered in step two account for significant variance in pretraining anxiety.

Hence, partial support is found for Hypothesis 6A in that the pretraining manipulation significantly predicted the attributional states increasing the UC attributions and decreasing the SU attributions even after controlling for locus of control. However, performance orientation and anxiety states were not affected significantly by the manipulation after accounting for traits.

Tables 12, 13, 14, and 15 present the analyses conducted to test Hypothesis 6B. Table 15 shows that neither the traits nor the posttraining manipulation were significant predictors of posttraining UC attributions. Table 13, however, shows that the traits accounted for significant variance in SU attributions ($\Delta R^2 = .25$) with significant regression weights for trait performance orientation ($\beta = .32$) and internal locus of control ($\beta = -.37$). The posttraining manipulation also accounted for significant variance in posttraining SU attributions ($\beta = -.23$, $\Delta R^2 = .05$). Table 14 shows that although the traits

accounted for significant variance in posttraining performance orientation $\Delta R^2 = .29$ (with significant regression weights for mastery orientation $\beta = .22$ and performance orientation $\beta = .23$), the posttraining manipulation did not account for significant variance in posttraining performance orientation. Similarly, although trait anxiety was a significant predictor of posttraining anxiety ($\beta = .49$, $\Delta R^2 = .29$), the other traits and the posttraining manipulation were not significant predictors. As a set these analyses indicate partial support for Hypothesis 6B, specifically the posttraining manipulation was related to decreased SU attributions after training, but did not impact anxiety, performance orientation, or UC attributions after controlling for traits.

Hypothesis 7A stated pretraining manipulation would be positively related to pretraining motivation, and that this relationship would be mediated by the psychological states. To demonstrate a mediated relationship, first it is necessary to establish the direct relationships from the pretraining manipulation to pretraining motivation, from the pretraining manipulation to the psychological states (which was examined in Hypothesis 6A and supported for the attributional states, see Tables 9 and 10), and from the psychological states to pretraining motivation. Finally, it is necessary to demonstrate the any relationship between the pretraining manipulation and pretraining motivation becomes insignificant when the pretraining states are controlled for before the pretraining manipulation. Table 16 presents a regression demonstrating the significant relationship between the pretraining manipulation and pretraining motivation ($\beta = .22$, $R^2 = .05$). Table 17 demonstrates the direct relationship between the pretraining states and the dependent variable pretraining motivation ($\beta = .24$ for CU attributions, .28 for performance orientation, and $-.18$ for anxiety). Furthermore, Table 17 shows that if the

dummy variable for the pretraining manipulation is entered after the states the relationship becomes non-significant. Thus, Hypothesis 7A is supported. There appears to be evidence for a mediated relationship between the pretraining manipulation and the pretraining motivation through the psychological states, particularly CU attributions, performance orientation, and anxiety.

Hypothesis 7B suggested a similar mediated relationship between the posttraining manipulation and posttraining motivation mediated through the psychological states. However, Table 18 demonstrates that the relationship between the posttraining manipulation and posttraining motivation is not significant, hence there is no relationship to be mediated, as further demonstrated in Table 19. Hypothesis 7B was not supported.

Hypothesis 8 stated that pretraining motivation would be positively related to transfer, and this relationship would be mediated by learning. To demonstrate this mediation, first the direct effects must be demonstrated between learning and transfer (demonstrated in Hypothesis 1, see Table 3), between pretraining motivation and learning, and between learning and transfer. Table 20 demonstrates a significant direct effect for the pretraining motivation on performance entered in step two ($\beta = .26$, $\Delta R^2 = .06$), even after accounting for the control variables of formal training and sex in step one. However, Table 21 presents the test for mediation, which demonstrates that after accounting for the impact of learning, pretraining motivation remains a significant predictor of transfer. This suggests that learning and motivation independently affected transfer, rather than a mediated relationship. Hypothesis 8 is not supported.

Hypothesis 9A stated that groups receiving the pretraining manipulation would demonstrate better learning than those without the pretraining intervention. To test this

hypothesis an ANOVA was conducted with each of the learning measures as a dependent variable and condition as the independent variable. Planned contrasts were conducted using effect coding were used to compare the cells receiving the manipulations to those without the manipulation. Tables 22, 23, and 24 present these analyses. Although the overall ANOVA demonstrated significant results for application knowledge ($F = 4.31$, $p = .006$) the contrast was not significant ($t = 1.19$, $p = .24$). Neither the overall ANOVA nor the contrasts for the other measures were significant. Hypothesis 9A is not supported.

Hypothesis 9B stated that the pretraining intervention only group would demonstrate better transfer than either the control group or the posttraining only group. To test this hypothesis an ANOVA was conducted with transfer as a dependent variable and condition as the independent variable. Planned contrasts were conducted using effect coding were used to compare the cell with the pretraining only manipulation to the control and posttraining intervention only group. As depicted in Table 25, the results are significant at the .10 level for the contrast not assuming equal cell variances ($t = 1.73$, $p = .09$). Marginal support is found for Hypothesis 7B.

Finally, Hypothesis 9C suggested that the pre and post group would demonstrate better transfer than the other groups. An ANOVA was conducted with transfer as the dependent variable and condition as the independent variable. Planned contrasts using effects coding was used to compare the pre and post group to the other groups. Table 26 presents the results for this analysis. The contrast is not significant, and hence Hypothesis 9C is not supported.

Supplemental Analyses

In addition to the hypothesis tests, a series of supplemental analyses were conducted in an attempt to gain a better understanding factors affecting transfer. To determine whether any particular types of people were impacted by the manipulations more than others, regression analyses assessing interaction effects between relevant traits and the manipulations were conducted. Three analyses were conducted to test for relationships between the pretraining manipulation and the traits. One analysis examined the goal orientation variables, trait mastery and trait performance orientation, and the manipulation. A second analysis examined trait anxiety and the manipulation. The third examined Locus of Control and the manipulation. These analyses were then conducted again using the posttraining manipulation to examine the possibility of interactions between the traits and the posttraining manipulation.

Only trait performance orientation appeared to interact significantly with the pretraining manipulation to impact transfer. Table 27 shows the regression results for assessing interactions of the learning orientations. This analysis shows that after entering trait mastery and performance orientations on the first step, and the pretraining manipulation dummy on the second step, the third step containing their interactions is significant, with the regression weight for performance orientation achieving significance ($\beta = 1.2, \Delta R^2 = .06$). This indicates that those higher in trait performance orientation receiving the pretraining manipulation performed significantly better in the transfer task. No significant interactions were found for the traits and the posttraining manipulation on transfer performance.

Having found that motivation impacts performance, and that this effect is not due

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to learning, further supplemental analyses were conducted to determine whether preparation activities conducted following training but before the transfer task might explain this effect. The correlation between the preparation activities and transfer was significant ($r = .25$). However, the regressions found in Tables 28 through 31 demonstrate that pretraining and posttraining motivation were related to performance, and that the preparation activities either mediate this effect (pretraining motivation) or partially mediate this effect (posttraining motivation). Table 29 shows that for using transfer as the dependent variable, the regression weight and variance accounted for by the preparation activities themselves are significant ($\beta = .27$; $\Delta R^2 = .07$). Moreover, the regression weight for pretraining motivation drops after preparation activities are entered from $\beta = .21$ to $\beta = .12$ and the variance accounted for by the preparation activities drops to a non-significant $\Delta R^2 = .07$ suggesting mediation. For the posttraining motivation, the regression weight for motivation drops from $\beta = .29$ to $\beta = .21$ and the ΔR^2 drops from $\Delta R^2 = .08$ to $\Delta R^2 = .04$ but remains significant, suggesting partial mediation.

Table 3

Regression Results for Hypothesis 1

DV = Salary Units

| Step # | IV | β | R | ΔR^2 |
|--------|-----------------------|---------|-----|--------------|
| 1. | | | .11 | .01 |
| | Sex | -.08 | | |
| | Formal Training | .07 | | |
| 2. | | | .55 | .07* |
| | Strategy Recognition | .25* | | |
| | Declarative Knowledge | -.06 | | |
| | Application Knowledge | .05 | | |

Table 4

Regression Results for Hypothesis 2

DV = Salary Units

| Step # | IV | β | R | ΔR^2 |
|--------|-------------------------|---------|------|--------------|
| 1. | | | .09 | .01 |
| | Sex | .06 | | |
| | Formal Training | .07 | | |
| 2. | Strategy Recognition | .24* | .26* | .06* |
| 3. | Posttraining Motivation | .28* | .38* | .07* |

Note: All beta weights from step in which variable entered.* $p < .05$

Table 5

Regression Results for Hypothesis 3

DV = Posttraining Motivation

| Step # | IV | β | R | ΔR^2 |
|--------|-----------------------|---------|-----|--------------|
| 1. | | | .09 | .01 |
| | Declarative Knowledge | .06 | | |
| | Strategy Recognition | .04 | | |
| | Application Knowledge | .04 | | |

Table 6

Regression Results for Hypothesis 5A

DV = Pretraining Motivation

| Step # | IV | β | R | ΔR^2 |
|--------|-------------------------------|---------|-----|--------------|
| 1. | | | .55 | .30* |
| | Trait Anxiety | -.08 | | |
| | Trait Mastery Orientation | .48* | | |
| | Trait Perf. Orientation | -.03 | | |
| | Trait Locus of Control | -.10 | | |
| 2. | | | .65 | .12* |
| | Pretraining Anxiety | -.07 | | |
| | Pretraining SU Attributions | -.10 | | |
| | Pretraining UC Attributions | .17* | | |
| | Pretraining Perf. Orientation | .27* | | |

Note: All beta weights from step in which variable entered.* $p < .05$

Table 7

Regression Results for Hypothesis 5B

DV = Posttraining Motivation

| Step # | IV | β | R | ΔR^2 |
|--------|-------------------------------|---------|-----|--------------|
| 1. | | | .53 | .28* |
| | Trait Anxiety | -.01 | | |
| | Trait Mastery Orientation | .37* | | |
| | Trait Perf. Orientation | -.16 | | |
| | Trait Locus of Control | .02 | | |
| 2. | | | .70 | .20* |
| | Pretraining Anxiety | -.10 | | |
| | Pretraining SU Attributions | .02 | | |
| | Pretraining UC Attributions | .30* | | |
| | Pretraining Perf. Orientation | .33* | | |

Table 8

Regression Results for Hypothesis 6A

DV = Pretraining Unstable/Controllable (UC) Attributions

| Step # | IV | β | R | ΔR^2 |
|--------|---------------------------|---------|-----|--------------|
| 1. | | | .30 | .09* |
| | Trait Anxiety | .14 | | |
| | Trait Mastery Orientation | .12 | | |
| | Trait Perf. Orientation | .04 | | |
| | Locus of Control | .27* | | |
| 2. | Pretraining Manipulation | .26* | .39 | .06* |

Note: All beta weights from step in which variable entered.* $p < .05$

Table 9

Regression Results for Hypothesis 6A

DV = Pretraining Stable/Uncontrollable (SU) Attributions

| Step # | IV | β | R | ΔR^2 |
|--------|---------------------------|---------|-----|--------------|
| 1. | | | .47 | .22* |
| | Trait Anxiety | -.09 | | |
| | Trait Mastery Orientation | .08 | | |
| | Trait Perf. Orientation | .27* | | |
| | Locus of Control | -.39* | | |
| 2. | Pretraining Manipulation | -.39* | .61 | .15* |

Table 10

Regression Results for Hypothesis 6A

DV = Pretraining Performance Orientation

| Step # | IV | β | R | ΔR^2 |
|--------|---------------------------|---------|-----|--------------|
| 1. | | | .37 | .14* |
| | Trait Anxiety | .14 | | |
| | Trait Mastery Orientation | .16 | | |
| | Trait Perf. Orientation | .24* | | |
| | Locus of Control | -.17 | | |
| 2. | Pretraining Manipulation | -.03 | .37 | .00 |

Note: All beta weights from step in which variable entered.

*p < .05

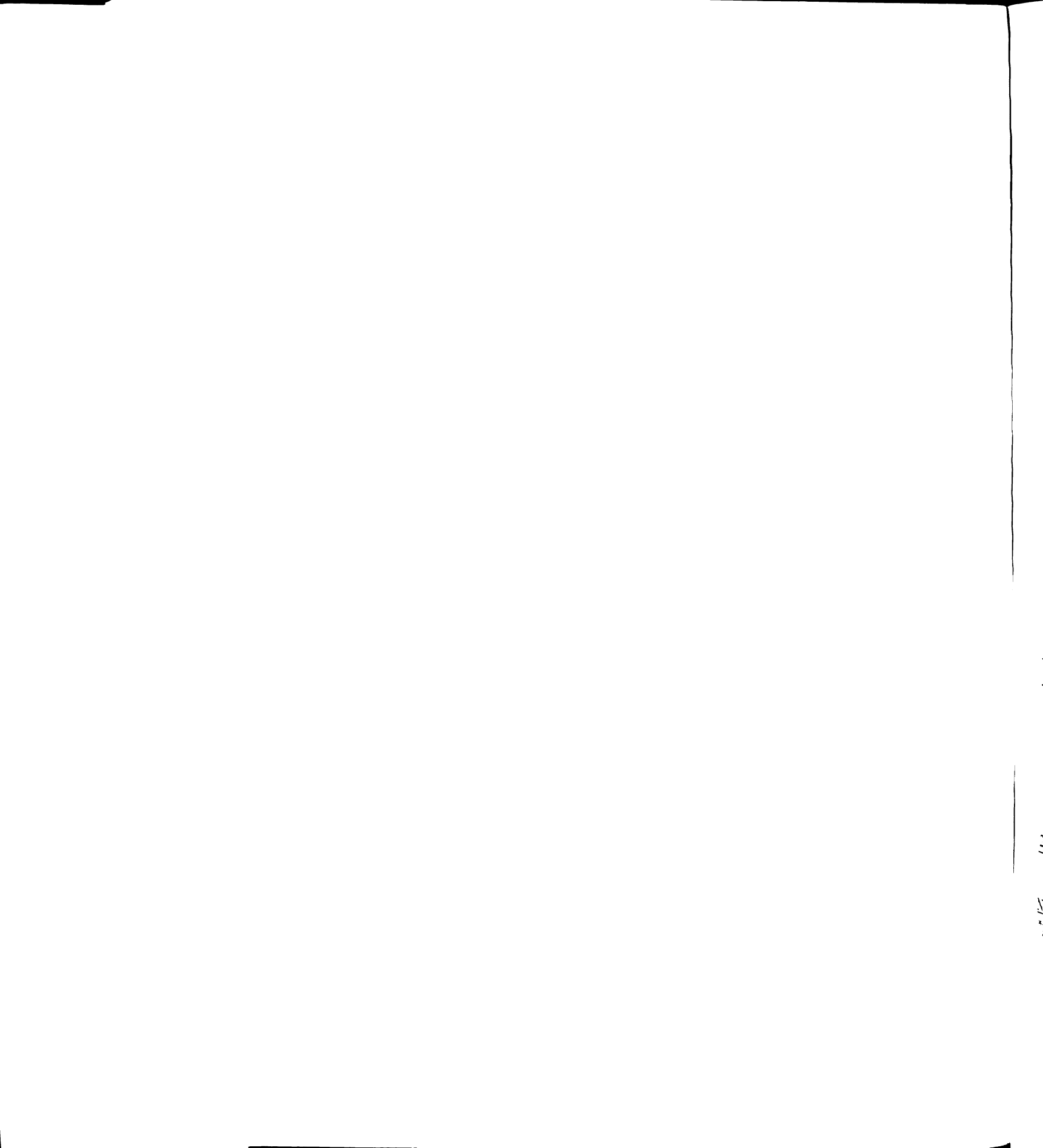


Table 11

Regression Results for Hypothesis 6A

DV = Pretraining Anxiety

| Step # | IV | β | R | ΔR^2 |
|--------|---------------------------|---------|-----|--------------|
| 1. | | | .58 | .33* |
| | Trait Anxiety | .58* | | |
| | Trait Mastery Orientation | .06 | | |
| | Trait Perf. Orientation | -.12 | | |
| | Locus of Control | -.02 | | |
| 2. | Pretraining Manipulation | -.12 | .59 | .01 |

Table 12

Regression Results for Hypothesis 6B

DV = Posttraining Unstable/Controllable (UC) Attributions

| Step # | IV | β | R | ΔR^2 |
|--------|---------------------------|---------|-----|--------------|
| 1. | | | .25 | .06 |
| | Trait Anxiety | -.03 | | |
| | Trait Mastery Orientation | .15 | | |
| | Trait Perf. Orientation | .12 | | |
| | Locus of Control | .13 | | |
| 2. | Posttraining Manipulation | -.06 | .25 | .06 |

Note: All beta weights from step in which variable entered.* $p < .05$

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Table 13

Regression Results for Hypothesis 6B

DV = Posttraining Stable/Uncontrollable (SU) Attributions

| Step # | IV | β | R | ΔR^2 |
|--------|---------------------------|---------|-----|--------------|
| 1. | | | .50 | .25* |
| | Trait Anxiety | -.05 | | |
| | Trait Mastery Orientation | .13 | | |
| | Trait Perf. Orientation | .32* | | |
| | Locus of Control | -.37* | | |
| 2. | Posttraining Manipulation | -.23* | .55 | .05* |

Table 14

Regression Results for Hypothesis 6B

DV = Performance Orientation

| Step # | IV | β | R | ΔR^2 |
|--------|---------------------------|---------|-----|--------------|
| 1. | | | .40 | .16* |
| | Trait Anxiety | .03 | | |
| | Trait Mastery Orientation | .22* | | |
| | Trait Perf. Orientation | .33* | | |
| | Locus of Control | -.06 | | |
| 2. | Posttraining Manipulation | -.07 | .40 | .01 |

Note: All beta weights from step in which variable entered.* $p < .05$

Table 15

Regression Results for Hypothesis 6B

DV = Posttraining Anxiety

| Step # | IV | β | R | ΔR^2 |
|--------|---------------------------|---------|-----|--------------|
| 1. | | | .54 | .29* |
| | Trait Anxiety | .49* | | |
| | Trait Mastery Orientation | -.15 | | |
| | Trait Perf. Orientation | -.05 | | |
| | Locus of Control | .05 | | |
| 2. | Posttraining Manipulation | .02 | .54 | .00 |

Note: All beta weights from step in which variable entered.

* $p < .05$

T

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Table 16

Regression Results for Hypothesis 7A – Tests for Direct Effect

DV = Pretraining Motivation

| Step # | IV | β | R | R^2 |
|--------|--------------------------|---------|-----|-------|
| 1. | Pretraining Manipulation | .22* | .22 | .05* |

Table 17

Regression Results for Hypothesis 7A – Test for Mediation

DV = Pretraining Motivation

| Step # | IV | β | R | ΔR^2 |
|--------|-------------------------------|---------|-----|--------------|
| 1. | | | .45 | .20* |
| | Pretraining SU Attributions | -.07 | | |
| | Pretraining CU Attributions | .24* | | |
| | Pretraining Perf. Orientation | .28* | | |
| | Pretraining Anxiety | -.18* | | |
| 2. | Pretraining Manipulation | .17 | .47 | .02 |

Note: All beta weights from step in which variable entered.* $p < .05$

Table 18

Regression Results for Hypothesis 7B – Test Direct Effect

DV = Posttraining Motivation

| Step # | IV | β | R | R^2 |
|--------|---------------------------|---------|-----|-------|
| 1. | Posttraining Manipulation | -.02 | .02 | .00 |

Table 19

Regression Results for Hypothesis 7B – Test for Mediation

DV = Posttraining Motivation

| Step # | IV | β | R | ΔR^2 |
|--------|--------------------------------|---------|-----|--------------|
| 1. | | | .56 | .32* |
| | Posttraining Anxiety | -.22* | | |
| | Posttraining SU Attributions | .03 | | |
| | Posttraining UC Attributions | .40* | | |
| | Posttraining Perf. Orientation | .28* | | |
| 2. | Posttraining Manipulation | .02 | .02 | .00 |

Note: All beta weights from step in which variable entered.* $p < .05$

Table 20

Regression Results for Hypothesis 8 – Test for Direct Effect

DV = Salary (\$250 units)

| Step # | IV | β | R | ΔR^2 |
|--------|------------------------|---------|-----|--------------|
| 1. | | | .11 | .01 |
| | Formal Training | -.08 | | |
| | Sex | .08 | | |
| 2. | Pretraining Motivation | .26* | .28 | .08* |

Table 21

Regression Results for Hypothesis 8 – Test for Mediation

DV = Salary (\$250 units)

| Step # | IV | β | R | ΔR^2 |
|--------|------------------------|---------|-----|--------------|
| 1. | | | .10 | .01 |
| | Formal Training | -.08 | | |
| | Sex | .07 | | |
| 2. | Strategy Recognition | .24* | .26 | .06* |
| 3. | Pretraining Motivation | .25* | .35 | .06* |

Note: All beta weights from step in which variable entered.

*p < .05

Table 22

ANOVA Contrast Results for Hypothesis 9A

DV = Declarative Knowledge

| | SS | df | MS | F | Sig. |
|----------------|-------|-----|------|-----|------|
| Between Groups | .38 | 3 | .13 | .05 | .98 |
| Within Groups | 282.2 | 113 | 2.50 | | |
| Total | 282.5 | 116 | | | |

Contrast of pretraining manipulation groups with other groups

| | t. | df | Sig (2 tailed) |
|---------------------------------|------|--------|----------------|
| Assumes equal variances | -.06 | 113 | .95 |
| Does not assume equal variances | -.07 | 109.63 | .95 |

Table 23

ANOVA Contrast Results for Hypothesis 9A

DV = Strategy Recognition Test Score

| | SS | df | MS | F | Sig. |
|----------------|-------|-----|------|------|------|
| Between Groups | 14.66 | 3 | 4.88 | 1.77 | .32 |
| Within Groups | 465.1 | 112 | 4.15 | | |
| Total | 479.8 | 115 | | | |

Contrast of pretraining manipulation groups with other groups

| | t. | df | Sig (2 tailed) |
|---------------------------------|-------|--------|----------------|
| Assumes equal variances | -1.42 | 112 | .16 |
| Does not assume equal variances | -1.42 | 103.23 | .16 |

Table 24

ANOVA Contrast Results for Hypothesis 9A

DV = Application Knowledge

| | SS | df | MS | F | Sig. |
|----------------|-------|-----|------|------|------|
| Between Groups | 19.2 | 3 | 6.40 | 4.31 | .006 |
| Within Groups | 167.4 | 113 | 1.48 | | |
| Total | 186.6 | 116 | | | |

Contrast of pretraining manipulation groups with other groups

| | t. | df | Sig (2 tailed) |
|---------------------------------|------|--------|----------------|
| Assumes equal variances | 1.19 | 113 | .24 |
| Does not assume equal variances | 1.19 | 102.31 | .24 |

Table 25

ANOVA Contrast Results for Hypothesis 9B

DV = Salary Units

| | SS | df | MS | F | Sig. |
|----------------|---------|-----|--------|------|------|
| Between Groups | 1135.8 | 3 | 378.60 | 1.11 | .35 |
| Within Groups | 36903.0 | 108 | 341.69 | | |
| Total | 38038.8 | 111 | | | |

Contrast of pretraining manipulation groups with control and post-only manipulation

| | t. | df | Sig (2 tailed) |
|---------------------------------|------|-------|----------------|
| Assumes equal variances | 151 | 108 | .24 |
| Does not assume equal variances | 1.73 | 55.55 | .09 |

Table 26

ANOVA Contrast Results for Hypothesis 9B

DV = Salary Units

| | SS | df | MS | F | Sig. |
|----------------|---------|-----|--------|------|------|
| Between Groups | 1135.8 | 3 | 378.60 | 1.11 | .35 |
| Within Groups | 36903.0 | 108 | 341.69 | | |
| Total | 38038.8 | 111 | | | |

Contrast of Pre - Post manipulation groups with all other groups

| | t. | df | Sig (2 tailed) |
|---------------------------------|-----|-------|----------------|
| Assumes equal variances | .53 | 108 | .59 |
| Does not assume equal variances | .84 | 64.56 | .40 |

Table 27

Supplemental Regression Results

DV = Salary (\$250 units)

| Step # | IV | β | R | ΔR^2 |
|--------|--------------------------------|---------|-----|--------------|
| 1. | | | .19 | .04 |
| | Trait Mastery Orientation | .19* | | |
| | Trait Perf. Orientation | .02 | | |
| 2. | Pretraining Manipulation (PTM) | .17 | .25 | .03 |
| 3. | | | .35 | .06* |
| | Perf. Orientation X PTM | 1.2* | | |
| | Mastery Orientation X PTM | -.99 | | |

Note: All beta weights from step in which variable entered.

*p < .05

Table 28

Supplemental Regression Results

DV = Salary (\$250 units)

| Step # | IV | β | R | R^2 |
|--------|------------------------|---------|-----|-------|
| 1. | Pretraining Motivation | .21 | .21 | .05* |

Table 29

Supplemental Regression Results

DV = Salary (\$250 units)

| Step # | IV | β | R | ΔR^2 |
|--------|------------------------|---------|-----|--------------|
| 1. | Preparation Activities | .27* | .27 | .07* |
| 2. | Pretraining Motivation | .12 | .29 | .01 |

Note: All beta weights from step in which variable entered.* $p < .05$

Table 30

Supplemental Regression Results

DV = Salary (\$250 units)

| Step # | IV | β | R | R^2 |
|--------|-------------------------|---------|-----|-------|
| 1. | Posttraining Motivation | .29 | .08 | .08* |

Table 31

Supplemental Regression Results

DV = Salary (\$250 units)

| Step # | IV | β | R | ΔR^2 |
|--------|-------------------------|---------|-----|--------------|
| 1. | Preparation Activities | .28 | .28 | .08* |
| 2. | Posttraining Motivation | .21 | .36 | .04* |

Note: All beta weights from step in which variable entered.

* $p < .05$

DISCUSSION

The training literature has identified a number of contextual and individual difference variables that impact training motivation and effectiveness. Unfortunately, most of these variables provide little guidance for trainers regarding how to improve training motivation and effectiveness. As stable individual differences, traits offer little guidance regarding how to improve the motivation of those people who are not optimal in their trait levels of these variables. Likewise, contextual variables, such as the introduction of training, reward structure, or transfer climate are often broader organizational issues beyond the control of the trainer. This dissertation suggests psychological states as a potential leverage point for trainers for improving trainees' motivation and transfer.

This study builds upon the training literature examining influences on training motivation by suggesting that the key traits identified by the literature as significant determinants of training motivation have state analogs. These analogs, it was suggested can be manipulated to improve pretraining and posttraining motivation and hence learning and transfer. A multi-faceted manipulation was created drawing from other literatures that have attempted to alter psychological states. Based upon social psychological research, an attribution retraining manipulation was created which was aimed at encouraging the unstable, controllable attributions found to be beneficial to learning such as effort and strategy attributions associated with greater motivation. Clinical, and educational literatures suggested anxiety management techniques such as self-statement modification, visualization, and applied relaxation which have been found to reduce state anxiety. These were incorporated into the manipulation to help reduce

anxiety, which has been found detrimental to training motivation. Finally, recent training literature suggested that instructions which encouraged risk taking, viewing errors as learning opportunities, and decreased attention on competition could encourage trainees to adopt a mastery orientation which has been associated more effort devoted to learning and persistence in the face of difficulties. The manipulation of attributions, anxiety, and learning orientation were either withheld, given prior to training to encourage learning, following training to encourage transfer, or both to determine which timing was most efficacious.

A model was created and hypotheses offered which suggested that the manipulations would lead to lower anxiety, more stable, controllable attributions, and increased mastery orientation, which would lead to better motivation, and hence learning and transfer. It was further suggested that the timing of this manipulation would be such that the pretraining manipulation would be better than the posttraining only manipulation, or control at encouraging learning and transfer, but that the pretraining and posttraining manipulation would be optimal for transfer.

The results partially support the model. It was found that the pretraining manipulation was effective at impacting pretraining attributions, decreasing stable uncontrollable attributions such as personality, ability, or opponent attributions, while increasing the extent to which the unstable, controllable attributions of effort and strategies were viewed as important for learning to become a successful negotiator. The pretraining manipulation was able to increase training motivation, and this was mediated through the psychological states, particularly the pretraining controllable unstable attributions. The posttraining manipulation was able to decrease stable, uncontrollable

attributions following training but had virtually no other effects.

Increased pretraining motivation was associated with higher posttraining motivation, and both were related to better transfer performance. The main findings of this study are summarized in Figure 3.

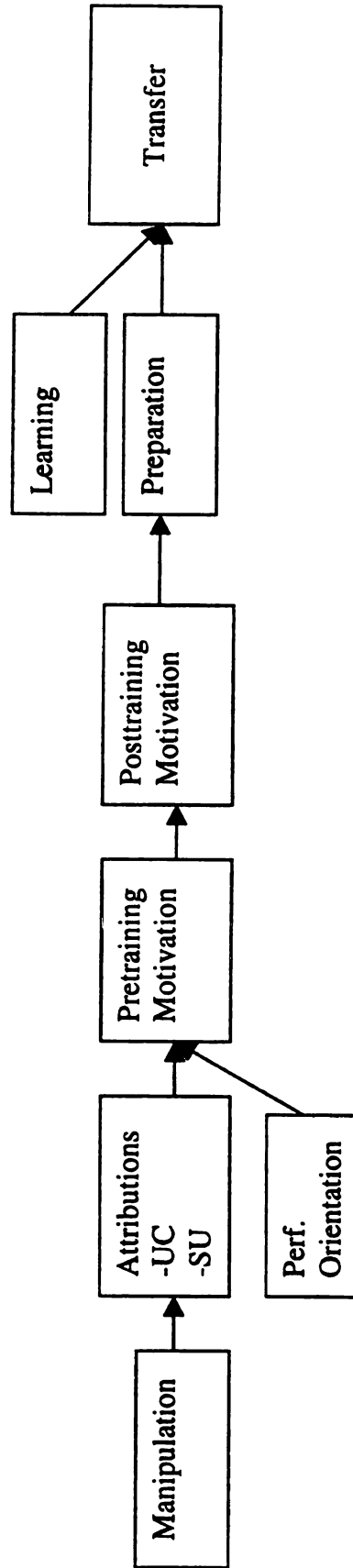
Key Findings and Contributions

Psychological States. One of the key contributions of this study was the identification of psychological states that impact training motivation. Prior to this study, the work in the training field had followed the lead of Noe (1986) and focused primarily on stable individual differences as influences on training motivation. Although important, these individual differences do not provide the trainer with much opportunity to have an impact on training motivation with the possible exception of selection into training. This study theorized that psychological state analogs of these traits might also impact training motivation and would be more susceptible to influence. Indeed, this study found that attributing success to controllable, unstable factors such as effort and strategies and having a state performance orientation were related to both pretraining and posttraining motivation even after controlling for trait performance orientation and locus of control.

Prior training literature focused on attributions in terms of one's locus of control, or the stable tendency to view events as determined by oneself versus determined by the external environment, finding that those with an internal locus of control would be more motivated for training (e.g. Colquitt et al., 1998). This study examined locus of control, but focused attention on one's more dynamic assessments regarding the causes of performance for the particular task at hand. In the current study, subjects rated the causes they perceived as important for success in training and transfer. It was found that these

Figure 3

Summary of Key Findings Heuristic



causes indeed formed two primary factors: a stable, uncontrollable attributions factor (comprised of causes like personality, ability, and opponent), and an unstable, controllable attributions factor (comprised of strategies used and effort). Consistent with prior attribution research, those who attribute success in training and for transferring that training to unstable, controllable causes such as effort and strategies demonstrate more training motivation. This suggests an important way that trainers can improve training motivation, by encouraging trainees to view the causes of training performance and transfer as controllable and unstable such as the effort they put forth or the strategies that they employ.

State performance orientation was also related to training motivation. Most research in training has suggested that performance orientation can be detrimental to learning. However, research showing that the mastery and performance orientations are independent (e.g. Fisher, 1998) means that one can be both mastery oriented and performance oriented. As suggested by Spencer and Spencer (1993), for some tasks which lend themselves to a performance or competitive orientation, such as negotiation, it appears that being focused on performing well may provide some energy and lead to greater motivation. (It should be noted that the state mastery orientation scale was subsumed by the motivation to learn scales, discussed further below.) These findings indicate that in training for competitive tasks -- such as negotiation -- trainers might do well to encourage a state performance orientation to perhaps take advantage of the motivating force induced by a competitive situation. One would not want to encourage performance in training at the expense of learning as some research has shown the benefits of a mastery orientation for learning (e.g. Dweck, 1986). However, trainers

might emphasize both the importance of obtaining mastery, and show that ultimately attaining mastery is a way to perform well to take advantage of the benefits of both orientations.

Together the finding of psychological states that impact training motivation over and above the influence of traits demonstrates that state analogs do exist for many trait variables identified as important for training motivation, and that these analogs do contribute to training motivation.

Intervention. A second contribution of this study was the creation and testing of an intervention designed to impact the psychological states, and through these states, training motivation. As noted above, the advantage of looking at psychological states rather than stable traits is the potential to influence these states. Research on anxiety management, attribution retraining, and learning orientation was examined to determine how these states might be influenced. A multi-faceted intervention was designed. It was found that the manipulations were able to impact the attributional states of the individuals. Specifically, those who received the pretraining manipulation demonstrated significantly higher level of controllable, unstable attributions and lower level of stable, uncontrollable attributions for the pretraining manipulation. The posttraining manipulation also lowered stable, uncontrollable attributions. The pretraining manipulations were found to impact pretraining motivation, and this impact was mediated by the psychological states indicating that the manipulation impacted motivation through its impact on the psychological states.

These findings represent a significant contribution to the training literature not only because they demonstrate the usefulness of looking at psychological states to impact

training, but also by integrating a manipulation from the social and educational psychology literatures into the training field. Although in a combined intervention it is not possible to definitely determine which aspect of the intervention had the effect, it is likely, and consistent with prior research (Fosterling, 1985), that the video manipulation designed around attributional retraining was primarily responsible for the attributional change. Showing a videotape of models similar to the participants who stress that strategies and effort were the keys to learning and transfer -- while downplaying the importance of personality and ability -- was successful at increasing perceived importance of unstable, controllable factors, and decreasing the importance put on stable, uncontrollable factors. This in turn positively impacted training motivation, particularly pretraining. Moreover, this study is unlike many of the educational or social psychological studies in which this intervention was used in that the participants were not pre-selected as having stable, uncontrollable attributional tendencies. This demonstrates that for a normal group of trainees, such an attributional intervention is an efficacious way to impact attributions, and motivation.

A supplemental issue regarding the manipulations was to determine whether there were any interactions between traits and the manipulation to determine transfer performance. That is, the determination of whether the manipulations work differently on different people to determine performance. An interaction was found between the pretraining manipulation and trait performance orientation. This finding suggests that those people higher in trait performance orientation who received the manipulation performed better on the transfer task than less performance oriented people receiving the manipulation. Typically performance orientation is associated with the characteristic of

viewing performance as driven by ability, and as seeing effort as inversely related to performance (Dweck, 1986). It may be that those performance oriented individuals who received the manipulation were convinced by the manipulation that the strategies were the keys to performance, and that effort was not a reflection of poor ability. It may be that these people, therefore, get the best of both worlds. They are at once competitive and desire to perform well during the negotiation simulation, which alone was related to better performance, and in addition they are told via the attribution manipulation that the strategies and effort were the key to performing well.

Timing of Intervention. A related issue examined by this study was the timing of intervention. Previous work on training interventions had, with some exceptions, used predominately posttraining interventions to improve transfer (e.g., Marx's, 1985 work on relapse prevention or Gist et al.'s 1990 study comparing posttraining goal setting to self-management). This study examined whether there might be some benefit of examining a psychological state intervention prior to training versus after training or both. It was hypothesized that the groups receiving both the pretraining and posttraining manipulation would be the best in transfer, that the second best would be the pretraining only group who had the positive effects on motivation (and hence learning) of the pretraining manipulation. The post-only group would be better only than the control. In addition, it was expected that the groups with the pretraining manipulations would demonstrate better learning.

Of these expectations, the only one that was met was that the pretraining only group did better than the posttraining only group or the control on transfer. The contrasts were significant (at the $p < .10$ level). Although the pretraining only and pre/post groups

had higher means (20.9 and 18.7 respectively) than either the control (16.7) or post-only group (17.6), the difference was not quite sufficient to be significant .

The findings that the pretraining groups scored better -- taken in combination with the fact that the pretraining manipulation was more effective at improving states and pretraining motivation -- suggests that the pretraining manipulation may be a more efficacious timing for manipulation. Before training, trainees do not know specifically what the training will entail, and may be more susceptible to influence regarding motivation and psychological states. Following training, the trainees have been exposed to the material and have more information to make their own judgments regarding the usefulness and applicability of the material. (They are also perhaps less interested in listening to more talk about motivation as they have covered the material for the class.) As pretraining motivation is highly related to posttraining motivation, it seems logical that if one can improve the pretraining motivation, then one may get as a positive consequence better posttraining motivation as well. This finding indicates that before training may be the optimal time to intervene to improve motivation. Trainers wishing to maximize impact on improving motivation may therefore wish to concentrate their efforts on pretraining intervention for the most efficient investment of resources.

Influences on Transfer

The model hypothesized that transfer would be predicted by posttraining motivation and learning. These hypotheses were supported. Those who demonstrated better knowledge on the strategy recognition test and more motivation applied their learning to score higher on the posttraining one-on-one negotiation simulation. Supplemental analyses demonstrated that motivation had its effect, at least partially,

through trainers employing more preparation activities between the end of training and the transfer task.

Although motivation levels did not lead to differential learning (discussed below), those who were more motivated performed more of the optional preparation activities after training but prior to engagement in the transfer task. Results showed significant correlations between the number of preparation activities participants reported doing and their pretraining motivation ($r = .43$), and posttraining motivation ($r = .40$). These activities were also significantly related to transfer performance ($r = .25$). Supplemental analyses suggested that preparation activities mediated the relationship between pretraining motivation and transfer and partially mediated the relationship between posttraining motivation and transfer. Both learning and preparation were significant predictors of transfer.

These findings suggest that one of the key impacts of motivation which has been mostly overlooked in training research takes place in impacting the preparation trainees are willing to do to transfer. Typically, research on training focuses the impact of motivation on learning and transfer themselves. However, the current findings show that in some cases, what occurs between the learning and transfer events to enable the learner to transfer their knowledge is where motivation may play an important role. It may be that for structured training environments as in this study, the situation is too restrictive to allow the differences in behaviors needed for motivation to play much of a role in determining outcomes such as learning. However, preparation for transfer provides more opportunities for different behavior among trainees and hence allows motivation to play a more important role.

Unexpected Findings

In addition to some of the expected findings discussed, this study also produced some unexpected findings that bear examination. This section examines these unexpected but noteworthy issues.

Interventions. Although the manipulations were successful at impacting attributions, contrary to expectations, the manipulations did not appear to impact anxiety. State anxiety was not affected by either the pretraining or posttraining manipulation. There are a number of reasons this may be the case. Perhaps the most likely is that there simply was not a great deal of anxiety regarding the training or negotiation simulation. Although previous work by Gist and colleagues (e.g. Gist, et al., 1990) found that anxiety was a primary reason trainees in negotiation training anticipated as inhibiting transfer, subjects in the current study did not report feeling very anxious regarding the training or transfer task. This is demonstrated by the means of the state anxiety scales. Out of a possible 100 scale score, both pretraining and posttraining anxiety scores had means below 40. This suggests that at the time they completed the scales (before training and after training) the subjects were not feeling very anxious about learning or applying the training. Perhaps because an extra-credit experiment was not something in which most subjects were heavily invested, nor did the subjects necessarily believe they would have to use the material outside of the experiment, they did not feel very anxious about learning or applying the material. After all, if they did not do well on the simulation, they did not receive fewer credits or an actual lower salary. Moreover, unlike some adult trainees, these students were used to learning new concepts in such a structure and may not have felt anxious about that aspect of the training. Learning techniques to deal with anxiety

they did not necessarily feel would not be expected to have much impact.

The timing of the measurement also might have been a reason no effect for the manipulation was found. Since posttraining anxiety may have been most acute at the time the strategies were to be employed, the best time to assess anxiety might have been right before the negotiation simulation. Anxiety measurement at that time might have helped determine if the subjects who learned anxiety management strategies felt less anxiety at the time of the negotiation. However, the posttraining anxiety scale was given at the end of training, two days prior to the transfer simulation. Although subjects were asked to consider how they felt about having to apply their learning to a one-on-one simulation, the simulation may have been too distal to induce any such anticipatory anxiety at the time of measurement.

The interventions also included a mastery orientation section. This section was comprised of instructions for the subjects about how to approach the training and transfer situations. They were designed to encourage a mastery orientation and discourage a performance orientation. These instructions encouraged subjects to focus on learning the strategies, to not be afraid to make mistakes, to help one another learn, and to not to focus on “winning” the negotiations or exercises undertaken in class. Likewise, the posttraining instructions encouraged trainees to view the negotiation simulation as a learning opportunity and to focus more on applying strategies than merely attaining a final outcome. They were encouraged to take risks and try the different strategies. It was emphasized that scores would not be “posted” or compared so they were not competing with one another.

Nevertheless, the pretraining manipulation did not affect state learning orientation. One issue might have been that the mastery orientation scales ended up being incorporated into the pretraining and posttraining motivation scales based on the factor analysis. Thus, any impact the manipulations had on state mastery orientation was indistinguishable from direct effects on motivation (the mastery orientation – motivation to learn distinction will be discussed below). Performance orientation was distinguishable from motivation, however, it was unaffected by the manipulation. The trait orientation appears to have dictated what the level of subjects' performance orientation. It may be that the negotiation situation, which tends to be competitive and "performance oriented" by its nature, was too strong to be impacted by instructions. It could also be that a manipulation aimed at increasing mastery orientation does not necessarily decrease performance orientation since the two have been found to be relatively independent by researchers such as Fisher (1998).

Learning Orientation. Previous research has shown that mastery oriented people set challenging goals, are persistent in the face of difficulty, and view at learning more cooperatively. Performance oriented people, on the other hand are characterized by focusing on performance over learning, view ability and effort as inversely related, attempt to avoid negative judgments of competency, set less challenging goals, and show low persistence in the face of difficulty (Dweck, 1986). It was expected that state mastery orientation would lead to more effort to learn and also a willingness to try the new strategies resulting in better transfer performance. Instead, two unexpected things occurred.

The first unexpected event was that the state mastery orientation scales

demonstrated themselves to be empirically inseparable to pretraining and posttraining motivation. Factor analyses indicated that the motivation and state mastery items loaded on one factor. Although unexpected, it is clear that the two are conceptually very similar.

When treating goal orientation as a trait, there is a clear separation conceptually between a stable predisposition to be mastery oriented and being motivated to learn in a particular training setting. The trait may lead to the state, but the order and conceptual distinctions are clear. However, when examining mastery orientation as a state, it becomes increasingly difficult to separate this state orientation with motivation to learn in a particular learning setting. For example, state mastery orientation involves the willingness to seek challenge in order to learn. The willingness to seek challenge to learn, however, comes almost necessarily with the willingness to invest effort to learn. If one is not willing to invest effort, one will not seek a challenge. This overlap is clear if one examines the scales used to operationalize these concepts in the literature. Consider the following items from Noe's (1985, p. 287) motivation to learn scale such as, "If I can't understand some part of this training I will try harder," "I will try to learn as much as I can from [this training]," and "I want to improve my skills in [this training]". This is very similar to state mastery items from Fisher (1998, p. 124), e.g. "I intend to learn as much as I can from this part of the class." The present study explicitly attempted to keep the state mastery orientation scale focused on mastery concepts such as the willingness to take risks and seek challenge to learn, and the focus on training as an opportunity to learn as opposed to demonstrate ability. Phrases like "willing to try" were avoided in favor of "seek challenge" to keep the motivation and mastery scales distinct. Despite this effort, the two concepts simply are too closely interrelated. To have a state mastery orientation

you almost have to be motivated to learn in order to invest the effort to seek challenge, take risks to learn, cooperate with others to learn, etc. Hence, empirically the pretraining and posttraining mastery orientation scales became part of the motivation to learn and transfer scales. As part of these scales it was positively related to performance although not to learning itself (which will be discussed below).

Researchers since Noe (1986) have been examining motivation to learn as an outcome variable. Likewise, recent training researchers following Dweck's (1986) lead have been interested in mastery orientation and its impact on training. The current findings demonstrate that given our ability to measure the two, state mastery orientation and motivation to learn are currently empirically inseparable. There is therefore a need to either identify behaviors associated with a state mastery orientation that would not be the same as what one simply motivation to learn would profess, or research should focus on one variable or the other for the sake of parsimony.

The second somewhat unexpected finding regarding learning orientation involves state performance orientation. State performance orientation was distinct from motivation to learn as it involved being more competitive with other trainees, wanting to impress others, wanting to avoid mistakes, and wanting to perform better than others. Generally, research has shown a performance orientation to be negatively related to learning as such individuals avoid challenge, see effort and ability as inversely related, and are less persistent (Dweck, 1986). Indeed, trait performance orientation was negatively related to learning on the declarative knowledge test and the strategy recognition test. However, state performance orientation was not related to learning. Moreover, pretraining and posttraining performance orientation were unexpectedly positively related to transfer

performance, with pretraining achieving significance. As suggested above, the best explanation for this may be the type of task involved in negotiation training and the negotiation simulation. It seems, by its very nature, to be a performance oriented environment. Negotiation involves trying to get something from an opponent, and is a public performance task in the sense that you are negotiating with at least one other person. The desire to demonstrate competence and to avoid negative perceptions, the desire to be better than others may be a positive state orientation for a negotiation format. Although they appear to have learned somewhat less by at least two of the learning measures, it appears that what they did learn they were willing to apply in transfer as negotiation success was dependent upon using the strategies from the training. This may be that they were not as willing to invest effort to learn, but were willing to invest the effort to demonstrate competence and to do well in the negotiation.

This is one aspect of performance orientation that is often overlooked. Although the training research concentrates on the desire to learn during training, there may be benefits on the transfer side with the desire to display competency or be competitive with others. Although they may be less willing to take the risk of looking bad by applying material they do not know on the job, performance oriented people may be more willing to use the material they have learned if it will make them appear competent or able. Convincing performance oriented people that the use of the training material is the key to success and to performing well could be an important way to improve transfer for performance oriented people.

Learning. One of the variables which did not operate as expected in this study was learning. Ordinarily, one expects that learning would be related to training motivation and performance. In this case, although one learning measure was related to performance, two other learning measures were not. Moreover, learning was unexpectedly not related to motivation.

Contrary to expectations, pretraining motivation did not lead to learning, and learning did not lead to posttraining motivation. This may have had to do with the learning measures themselves, or it may have had to do with the structure of the training program. The training program was fairly structured with little of what could be called highly complex information to absorb. Although there was a great deal of information during the training, the information itself was not especially difficult. The training program was structured so that consistency could be maintained across conditions and so that the large amount of information could be provided to trainees in the two hours of actual negotiation training. The subjects were told what exercises to do and when. Since the information was not especially complex, and the classes were small and required participation, attention could not wander too far. This probably led to a circumstance in which motivation could not lead to large differences in learning. All subjects were doing essentially the same thing at the same time. Some may have paid more or less attention, but even cursory attention was probably enough to get the basic concepts down to score reasonably well on the learning measures. Therefore, motivation did not impact learning scores significantly.

Some of the lack of predictive efficacy regarding the learning measures may also have had to do with the nature of the training material. Declarative knowledge,

particularly as measured here (which involved being able to match the strategy to its name), was not particularly important for this task. It did not matter if one knew the specific name of a strategy, what mattered is that the trainee understood the concept. Therefore, that the declarative knowledge test was not a great predictor of transfer or posttraining motivation is perhaps not surprising. More surprising was that the application knowledge ratings did not predict transfer. This measure provided a brief scenario and asked trainees to identify what was occurring and what should be done next. Ratings were based on whether the situation was read correctly, and whether the appropriate strategies were suggested in response. Perhaps, however, the fact that the test allowed participants time to consider the situation, and consider the best strategies to apply and write them out did not sufficiently simulate the difficulty of trying to apply the strategies in real time. The test that simulated this condition best was the strategy recognition measure which was a different way of testing their declarative knowledge, but may have also tapped their conceptual understanding in a deeper way. This measure involved listening to a tape of a negotiation and following on a script writing the names of the strategies in as they occurred. This required being able to identify a strategy not by its description, but by hearing it applied in real time. They had to have understood the concept well enough to recognize it when they heard it not by name but by actual application as it took place. It may be for this reason that the strategy recognition test was the only one that predicted transfer.

It is noteworthy that despite conceptual reasons to expect a relationship between learning and transfer this is far from the only study that has found a poor relationship between the two. Other research has also found that empirically this relationship is not as

strong might be expected. For example, a recent meta-analysis by Alliger, Tannenbaum, Bennett, Traver, and Shotland (1997) on the relationship among training criteria found that learning measures and transfer were not particularly highly related. Overall, they found that “at most, there are modest correlations between the various types of training criteria” (p. 351). Specifically, mean correlations between transfer and learning measures were only $r = .11$ for immediate assessments of learning, $r = .08$ for retention leaning measures, and $r = .18$ for behavioral learning measures. Therefore, it may be that too much is expected of this relationship. Clearly, learning is important as a prerequisite for transfer, but variance in transfer appears to be determined by much more than learning. Motivation, opportunity to perform, and contextual factors also likely play an important role.

Directions for Future Research

Manipulating Malleable Constructs to Improve Motivation and Performance. One of the primary implications of this study is that many of the traits identified as important for training motivation have state analogs, and that these states can be targeted to improve motivation and performance, over and above the traits. The research to date had focused on identifying traits important to training motivation (e.g. Noe, 1986; Colquitt, et al, 1998). However, the implications of traits are that trainees may be selected for training, generally an impractical solution. This research demonstrating the importance of similar malleable states provides for active trainer intervention to improve training motivation and performance. If performance is determined by the interaction of stable ability characteristics (cognitive an otherwise) and motivation, it seems that improving the malleable motivational influences is a potent way to improve training performance. This

study was somewhat successful at bringing in interventions from other literatures that have focused on altering psychological states and employing them on a normal student population to improve motivation. Trainers can and should take advantage of the capacity to change psychological states to improve motivation and performance. The consequences are ultimately better transfer that improves the utility of training. This study specifically demonstrates that a brief manipulation can help induce attributional patterns that are beneficial, and discourage attributional patterns that are maladaptive. These attributional patterns impact motivation and transfer.

The failure of the manipulation to impact state anxiety and goal orientation indicates that future research is needed to expand our repertoire of tools and manipulations for impacting the psychological states. Perhaps tools that are more directed toward training are needed. The anxiety manipulations used here were drawn from the clinical and educational literatures. The problem is that such interventions tend to be general and time consuming. For the specific environment and purpose of training, more focused manipulations may be possible. Research needs to determine what the specific nature of “training related anxiety” is and target that with more specific manipulations. One model to follow might be the adaptation of relapse prevention manipulations (Marx, 1982). This manipulation specifically examines the issues that the trainees are concerned about and focuses on addressing them. Research on anxiety should also consider the impact of anxiety on self-efficacy. Bandura (1982) points out that one cue individuals use to determine their level of self-efficacy is their physical state. They physical manifestations of anxiety provide information to the anxious individual that they may not be very good at the forthcoming task. Moreover, the anxious person may feel

that his or her anxiety will inhibit performance and this will serve as a factor decreasing self-efficacy. The relationship is likely reciprocal as low self-efficacy leads to performance anxiety, and performance anxiety further decreases self-efficacy.

Further guidance is also needed for creating learning orientation manipulations. The guidance currently provided sparse. Setting mastery or performance goals, giving instructions, emphasizing or de-emphasizing competition summarize the general techniques used in training to date. More work needs to focus on how we can heighten mastery and performance orientations, and (as more and more literature suggests that they are independent) whether increasing one must come at the expense of decreasing the other.

Another area in need of future research is to identify other individual differences that may have state analogs that can be targeted to improve training motivation. The current study has examined anxiety, attribution judgments (as opposed to locus of control) and learning orientation. Certainly, there are other traits that impact training. Achievement motivation and conscientiousness and are two examples of individual differences identified by the meta-analyses in Colquitt et al. (1998) related to motivation that might also have state analogs which can be manipulated. Achievement motivation may tap some of the same competitiveness that proved to be a positive impact on motivation and performance in the current study as part of performance orientation. Certainly, given our knowledge of the negative consequences of performance orientation and achievement motivation we can find ways to heighten the trainees' temporary achievement motivation that avoid the negative aspects of these orientations while harnessing their motivational forces to improve learning and transfer. Perhaps, as in this

study, by balancing them with discussions of adaptive attributions or mastery approaches this can be achieved. Conscientiousness also may have a state analog that can be targeted. Perhaps interventions providing a sense of importance or driving home the need to be conscientious about learning particular material may be a way to improve a person's conscientiousness as it pertains to the training. For instance, trainers for safety training might do something to highlight the importance of getting techniques exactly right as doing them even slightly incorrectly can do damage. This might make a normally lax person more concerned with attention to detail and being organized during the course. Whether such state analogs exist for all variables is open to question, but that they exist for many is almost without doubt. Finding the appropriate ways to bring about these states in efficient and job-relevant ways requires further investigation.

In addition to states, this research implies that other malleable variables can be identified which may be prone to manipulation. For example, Colquitt et al. (1998) and Fecteau et al. (1992) suggest career and job attitudes and training valence as influences on motivation to learn. A good trainer may begin by trying to improve the valence for training outcomes by pointing out intrinsic or extrinsic benefits that may be obtained by good training and transfer. Although trainers likely do some of this by common sense as "selling the training," research may be able to determine the key aspects of such a manipulation to make it more potent.

Pretraining Manipulations. The findings in this research that pretraining manipulations were more efficacious at impacting psychological states and performance, and that pretraining motivation was highly related to posttraining motivation suggests that pretraining influences on training motivation may be particularly good points of leverage

for improving training motivation throughout training. As discussed in the introduction, although the pretraining motivational literature has identified a number of variables deemed important for pretraining motivation, they tend to be stable individual difference or attitudes. Few pretraining interventions exist that are expected to improve motivation. It is only on the posttraining side where manipulations have been commonly employed to improve performance, such as relapse prevention (Marx, 1982), self-management and goal setting (Gist et al., 1990). This study suggests the need to begin to create and employ more interventions before training which may impact not only pretraining motivation, but learning, posttraining motivation, and transfer as a result. The recent attention to pretraining contextual influences by Baldwin and Magjuka (1997) is encouraging, but must be taken beyond the recognition of the importance of pretraining factors, and turned into practical manipulations that can be employed by trainers.

The current study suggests some brief manipulations that can be employed prior to training to improve attribution states. Other possibilities involve moving current posttraining manipulations to the pretraining side. For example, research should examine whether interventions like relapse prevention or goal setting might work better if employed prior to training rather than following training.

There are, of course implications for performing pretraining manipulation. First, you are dealing with trainees who have not yet learned the material. For example, with relapse prevention prior to training, it may be difficult to assuage fears when trainees do not yet know what their fears are or ought to be. Another implication is that you may create negative expectations regarding the program. That is, if you discuss potential pitfalls at the beginning of training, this may create negative expectations and self-

fulfilling prophecies for students. Hence, the choice of manipulation must be guided by theory and research to determine how to best motivate trainees, and specifically target those issues that inhibit motivation prior to training without doing damage. Encouraging controllable, unstable attributions appears to be one useful way to do so, further research must be explored to find other pretraining manipulations. To this end, more theory regarding how to build pretraining manipulations that have positive impact is needed.

Training Motivation Another finding from this study that has implications for further research is the finding that many of the specific dimensions used to measure training motivation (desire, confidence, willingness to invest effort) were not separable empirically. Although this may be a product of measurement issues like same source bias (discussed further below) there may be more to it than that. When considered along with similar findings like the parallel merging of scales that occurred in Noe and Schmitt (1986), this may suggest that although conceptually the dimensions for training motivation are distinct constructs, they are so closely related or correlated that phenomenologically trainees do not experience these distinctions. Trainees themselves may only experience either being motivated or unmotivated for training and transfer. Future research might examine the level at which trainees perceive motivation to learn and transfer. If indeed they distinguish between confidence, desire, and a willingness to invest effort then the issues here are measurement issues. If, however, trainees do not in fact make these fine distinctions, then perhaps trainers can create interventions in which they probe unmotivated trainees further to help them become more self-aware regarding the reason for their lack of motivation and specifically address those issues.

Another finding worthy of consideration was the strong relationship between pretraining and posttraining motivation. There are two ways to read this finding. The first is that one's pretraining motivation is the same construct as posttraining motivation (an overall motivation for training) being measured at two times. If this is the case, the strong correlation between them ($r = .82$) suggests reasonable test-retest reliability. More likely, the two represent very similar distinct, but related concepts. For instance, some factors might affect pretraining motivation but not posttraining motivation (like reputation of the course) and some may impact posttraining motivation but not pretraining motivation (poor content during the course). One would expect that barring these sorts of variables (which were minimized in a lab study), the pretraining motivation would stay relatively stable and lead to posttraining motivation as was found. This is because to some extent, the pretraining motivation is determined by stable elements such as traits, attitudes, general interest in the course, etc. Any difference between pretraining motivation and posttraining motivation that takes place in a lab study will be the results of either change in the person's motivation due to change in the states, or by reaction to the material. Assuming that the material is good and relatively engaging, and that there is no negative feedback to hurt confidence, one would expect the similar pretraining to posttraining motivation found in this study.

Posttraining motivation, in this study, was harder to change, since the pretraining manipulation was more efficacious than the posttraining manipulation despite the similarities between the two. A question, then, is raised regarding the reasons posttraining motivation would be more stable than pretraining motivation. One reason may be because posttraining motivation is in part determined by pretraining motivation.

In the pre/post condition, any improvement from the pretraining manipulation would have had its effect already, so the posttraining manipulation would not cause any additional increase. Furthermore, the pretraining manipulation comes before the trainees are exposed to the material. Once training takes place, they have a lot more knowledge to work with and may be less susceptible to outside influences. That is, they can decide for themselves if they know the material, are confident in this knowledge, and if the material merits motivation to apply it. These judgments are perhaps the most critical factors (in combination with contextual factors) in determining posttraining motivation, and hence the state manipulations may have had less impact. The psychological states identified here may, therefore, be more important prior to training than following it.

As discussed earlier, most of the models for person influences on training motivation are on the pretraining side. More theoretical models about the psychological (as opposed to contextual) variables that determine posttraining motivation are needed. These models can help us to create posttraining manipulations that target the specific person variables critical to posttraining motivation that may be different than pretraining motivation. Perceptions of utility of the material, self-efficacy, performance orientation, and other similar state person variables may be more relevant in posttraining motivation than pretraining motivation. Models that further explicate any differences between pre- and posttraining motivation can help trainers and trainees themselves to get better posttraining motivation.

Learning Orientation. State mastery orientation became a part of the pre- and posttraining motivation scales. This implies that empirically there is no distinction between being state mastery oriented and being motivated to learn. Future research may attempt to

determine whether state mastery orientation can be distinguished from motivation to learn. It would seem that one could be motivated to learn but in a performance oriented way, but one could not be state mastery oriented and not motivated to learn. The question remains as to whether motivation to learn is therefore a necessary part of state mastery orientation or whether the two are distinct. If researchers wish to further distinguish the two, then future research needs to determine how to measure state mastery orientation and disentangle it from motivation to learn. One way to do this is for state orientation scales to focus more on the reasons why a person wants to learn, rather than the intention to seek challenge or desire to learn itself. That is, whether individuals want to learn to demonstrate competence or to improve skills.

Another finding was the relationships among performance orientation, motivation, and transfer. Ordinarily, the literature on learning orientations suggests that a mastery orientation is preferable for training contexts. Mastery oriented people have been found to have more efficacy, generalize skills more, persist more despite difficulty learning, engage in more metacognition, develop more sophisticated problem solving strategies, and put forth greater effort on the learning task (Elliott & Dweck, 1988; Kozlowski et al., 1995; Fisher & Ford, 1998; Ford et al., 1998). Performance oriented people have been found to withdraw faster and experience negative affect during difficulty, and set easier goals favoring tasks that allow them to look good (Elliott & Dweck, 1988). However, the focus of these studies is typically in non-competitive, learning situations.

In this study, performance oriented people tended to learn less well consistent with prior research, but they actually were more motivated and performed better during transfer. This may suggest that some positive aspects from performance orientation are

being overlooked, particularly where transfer is concerned. Farr et al. (1993) describe a number of situations where performance oriented people may do better, such as military operations or running a nuclear power plant where a focus on flawless performance is critical. An additional situation highlighted by the current study is the competitive situation, and indeed, many business situations such as negotiations. The desire of mastery people to focus on the process and to set challenging goals and not focus on comparing themselves to others may be a positive characteristic for learning. However, many times in business, the competitive nature associated with a performance orientation may be critical. In fact, many organizational competency models include performance oriented concepts like “results driven” or “achievement oriented” and find them predictive of performance, indicating a need for such a performance focused orientation in the competitive business environment (Spencer & Spencer, 1993). For performance oriented people, motivation to learn may come from the motivation to succeed on the job, e.g. to “win” a negotiation. Highly mastery oriented people may be intimidated, uncomfortable, or simply not interested in competitive situations and less motivated to engage in training which implies a competitive situation such as performance. In transfer, a mastery orientated person may be satisfied that they reached their own goal of attempting to use the new strategy or improve upon their performance. On the other hand the performance oriented person may not be satisfied until they demonstrate that they can be among the best performers leading to more persistence.

Two implications for this are first that the situation may determine which orientation will lead to more learning and performance. If the situation is by nature competitive, a performance oriented person may be more motivated and perform better. If

the situation is more of a learning situation or non-competitive, then the mastery oriented person may have the advantage. Second, trainers may be better served encouraging mastery states for learning situations, but as people prepare for transfer, encouraging performance oriented states. That is, encourage mastery orientation when it is time to learn, and performance orientations when it is time to perform. Future research should examine whether the situation moderates the type of orientation that is optimal, and whether encouraging mastery orientations during training and performance orientation during transfer yields the best outcomes.

Training Design, Structure and Motivation. Contrary to prior research (e.g. Ryman & Biersner, 1975; Webster & Martaccio, 1993), motivation was not related to learning in the present study. It was suggested that one reason may have been that the highly structured training environment did not allow for different behavior or withdrawal from participants. One implication is that if training programs are highly structured and are designed to involve a great deal of participation, as this training program was, it may reduce the capacity for motivation to impact learning. Because low motivated trainees would engage in the same exercises and be called upon to respond an equal amount, there was not a great deal of room in the training for a low motivated person to withdraw, or to behave differently. Unless the person was willing to be extremely rude and uncooperative, the social demands of the situation (being in training they volunteered for, interacting with other trainees, the classroom environment, etc.) may have decreased the extent to which the low motivation lead to less learning. Thus, the training design or structure actually may serve as a moderator in the relationship between motivation and learning, at least for material that is not especially complicated such as the concepts in

this training. Future research may examine whether or not the design of the training program moderates the impact of motivation on performance, and whether the complexity of the material determines the efficacy of structure as a moderator. A similar notion might be to examine the impact of autonomy or job structure in the transfer environment. Individuals who are low in autonomy might not have the capacity to decide to transfer the training material or not, hence the relationship between motivation to transfer and transfer may be partially determined by the autonomy of the individual or structure of the job.

Limitations

The current study has a number of limitations which must be taken into consideration when evaluating the findings. One of the primary limitations was the use of an undergraduate population in a laboratory study. Although a laboratory study is a logical place to begin to determine whether it is possible to manipulate psychological states in a normal population of trainees, it also has inherent limitations. First, there is the potential that the findings will not generalize beyond this population. This, however, is likely not a major problem in the sense that as a normal cross section of young adults, their psychological states are apt to be similar to normal adults in an organization. There is no reason to believe they would be any more or less influenced by the manipulations than organizational trainees who had limited experience with the topic of training. In many senses, the population created a conservative test of the impact of manipulations and psychological states. If anything, I would expect the manipulations to work better in field settings or with organizational trainees as a population. As discussed above, there was not a great deal of anxiety in this population as they were to receive their extra credit

for participation regardless of outcome. They were neither particularly motivated nor discouraged by the prospect of negotiation training as they volunteered for this study among a host of possibilities for extra credit research. A population of organizational trainees may be more anxious or performance oriented as they are actually expected to apply what they have learned in a potentially competitive job situation and their performance on that job is evaluated with consequences attached. Thus, the manipulation directed at these states may have had more impact. Moreover, a population that might be expected to be particularly anxious about training, particularly uncomfortable in the classroom environment, particularly unmotivated, or have maladaptive attributions might demonstrate the greatest gains from the training. After all, it is from such populations (chosen for their maladaptive states) that most of the interventions included in the manipulation were derived and tested. Hence, the manipulations might be expected to perform best if used on a population of such workers. For example, older employees who have been away from the workplace for some time, displaced workers requiring retraining and updating, workers who have been sent back for remedial training on educational basics, older workers being trained on new technology, and “welfare to work” trainees who may have had negative “failure” related job experience in the past might benefit the most from the types of interventions described here. Hence, the current work represents a potentially conservative test of the possibility of the manipulations to impact states and improve motivation.

A second limitation involved in this study was short its short duration. Other studies employing negotiation training have been able to spread the training over 4-8 hours of training (e.g. Gist et al., 1990). Practical limitations would not permit such a

lengthy training program for this study population. The training program and initial data collection were condensed into one 3 hour period, followed by a brief criterion session two days later. More training time might have allowed for a more loosely structured program, with more opportunities for differences in behavior that might have allowed motivation to demonstrate even stronger effects, particularly in terms of learning but in terms of performance as well. The long length of the study relative to other studies however, limited sample size due to the consumption of resources including trainer time, negotiator time, and subject credit hours. A larger sample might have made for some more statistically significant findings. For instance, an ANOVA contrasting groups that had received pretraining manipulations with those that did not approached significance, but did not quite reach significance. Likewise, controlling for too many variables in the regression analyses made for too few degrees of freedom to detect some of the smaller effects. Ideally, a larger sample size would be used, but the 119 used here was consistent with the power analyses conducted anticipating medium effects sizes for the manipulations.

In terms of the manipulations, one short coming of the study is that by combining the manipulations it cannot be determined exactly why the effects were found. Certainly, it is most logical that the attributional effects found and the improved motivation were due to the attribution portion of the manipulation. However, this cannot be said with certainty. It could be that the precise combination of the anxiety, attribution, and learning orientation manipulations is needed. For an initial attempt to manipulate these states and apply the interventions develop in other literatures, it was felt that using the strongest

manipulation possible would involve combining them. Future studies can determine if just the attribution manipulation is sufficient to replicate these results.

As with the training program, the time constraints impacted the manipulation. Ideally, people would have had the time to practice the anxiety reduction strategies they were taught, but the time constraints did not allow this to take place. Moreover, more time could have been used to identify specific pretraining and posttraining concerns of the trainees and address them. However, to get the three manipulations into a short enough time frame to enable the training program and data collection to take place, the manipulations had to be condensed. It may be that while brief attribution manipulations are efficacious, anxiety or other stronger emotions or judgments take longer to affect.

There were also some potential measurement limitations. One such limitation is that the measurement by questionnaire of the pretraining states and motivation at one time, the posttraining states and motivation at a second time might have created method variance. As the states did not all relate to motivation or one another, it does not appear that method variance was a strong factor, although it could offer a partial alternative explanation regarding why the motivation scales converged. However, as the motivation dimensions are interrelated, this is neither totally unexpected nor particularly problematic. Attempts were made to avoid method variance where possible, including separating several of the measurements by time (e.g. traits were collected later), focusing the pretraining states on learning and the posttraining on applying the training, and use of alternative methods for criterion measurement. Moreover, research examining method variance has suggested that for well-developed scales, method variance may not be a major problem (Crampton & Wagner, 1994; Spector, 1987). It is unlikely that results of

this study are therefore substantially due to method variance.

Conclusion. The American Society for Training and Development point out that organizations spend 50-60 billion dollars annually on corporate training for their employees, and precious little of this training ever is employed on the job (Georgenson, 1982). Research on training motivation has taken a static view of the learner, rather than suggesting that as malleable, flexible, dynamic entities, trainees can be placed in states beneficial to their learning and performance. This work suggests that trainers do not merely have to select the properly motivated trainee, but can attempt to help create the properly motivated trainee. Obviously, the trainers will have to compete with potentially negative contextual influences or traits, but as utility analyses demonstrate, across all employees even relatively small increments in learning and performance may have substantial payoffs in terms of return on investment for organizations, and the enjoyment that trainees get from training. Given that there is so much that trainers cannot influence about their trainees and the contexts in which they will learn and transfer, any findings which provide the trainer with a leverage point will put more control in the hands of the trainer, and the trainee.

As applied psychologists, one of our primary functions is to create theory and conduct research on individuals at work that can benefit both individuals and the organizations that employ them. The model created here represents an initial attempt to create a theory of psychological states that impact training motivation that will hopefully help both organizational trainers and trainees. As more complex and complete theories are constructed and tested, we will undoubtedly develop the capacity to help motivate individuals to learn and perform better by creating efficient interventions to target the

most critical psychological states.

APPENDICES

APPENDIX A

MEASURES

Consent Form

This study is being conducted to examine psychological aspects and perceptions of training in order to better understand how to help people get maximal benefit from training, such as they might receive on the job.

The total time for this experiment is approximately 4 hours over two days. You will be getting several hours of training in negotiation strategies. This training is drawn from other similar training used at other universities including Washington and Maryland. We will ask you to fill out various questionnaires during the study regarding your perceptions, feelings, and knowledge. The final stage of the study involves participating in a negotiation simulation in a 1 on 1 format. A time for this simulation will be arranged at the initial session.

All information you provide during the experiment is confidential. You will be identified by a subject number and your materials will be seen only by the experimenters. The data will be analyzed in grouped form. All participants will be anonymous in any presentation of the findings of this research. Your participation in this experiment is voluntary, and you may discontinue at any time without penalty. Likewise you may refuse to participate in particular procedures or answer particular questions. There are no foreseeable risks for your participation in this experiment.

If you have any questions or concerns you can contact Daniel Weissbein at weissbei@pilot.msu.edu or 355-6225.

I hereby give my informed consent to participate in this experiment.

PRINT NAME _____

SIGNATURE _____ DATE _____

State Learning Orientation Scales

Pretraining

Mastery

1. I view this training as an opportunity to learn new things.
2. The most important aspect of this training to me is the opportunity to develop new skills.
3. I want this course to provide a learning challenge for me.
4. I will seek challenge during the training to help me learn.
5. I will experiment and try things that might not work during the training if I think they will help me learn.
6. I am willing to take a risk if it will help me learn.
7. I will cooperate with others in the training so we can all learn more.
8. I hope to work with others to improve our skills.

Completion Orientation

1. My primary goal for this training is just to complete it.
2. I can't wait until this training is over.
3. I want this course to be as easy as possible.
4. I intend to do as little work as possible to finish this course.

Performance Orientation

1. I plan on doing better than other trainees throughout this course.
2. I want to impress others with my knowledge of the subject.
3. It is important to me to avoid making mistakes while I work through this course.
4. I intend to score better than other trainees on the exercises, quizzes, and simulation.

Posttraining

Mastery

1. I view the negotiation simulation as an opportunity to learn new things.
2. The most important aspect of the negotiation simulation to me is the opportunity to develop new skills.
3. I want the negotiation simulation to provide a learning challenge for me.
4. I will seek challenge during the negotiation simulation to help me learn.
5. I will experiment and try things that might not work during the negotiation simulation if I think they will help me learn.
6. I am willing to take a risk if it will help me learn.
7. I will cooperate with others in the negotiation simulation so we can all learn more.
8. I hope to work with others to improve our skills as we prepare.

Completion

1. My primary goal for this simulation is just to complete it.
2. I can't wait until the simulation is over.
3. I want this simulation to be as easy as possible.
4. I intend to do as little work as possible to finish this experiment.

Performance

1. I plan on doing better than other trainees on the simulation.
2. I want to impress others with my knowledge of the subject.
3. It is important to me to avoid making mistakes during the simulation.
4. I intend to score better than other trainees on simulation.

Attribution Questionnaire

Pretraining

Personality Items

1. To be a successful negotiator you have to have the right personality.
2. There is a type of person who can become a good negotiator.
3. The most critical determinant of negotiation performance is personality.
4. Good negotiators need to have personalities like business leaders, salesmen, or agents.

Effort Items

1. Successful negotiators do well because of their effort.
2. Anyone can become a successful negotiator if they invest the effort.
3. Being a good negotiator is, in large part, a function of trying hard.
4. Good negotiators succeed because they work at it.

Strategy Items

1. Negotiation performance is determined by using the right strategies.
2. Anyone can become a successful negotiator by knowing the key strategies.
3. Knowing the right techniques and methods is what makes for a successful negotiator.
4. Good negotiators succeed because they use the right strategies.

Ability Items

1. Negotiation success is primarily determined by ability.
2. Intelligence is what makes a good negotiator.
3. Whether or not you can be an effective negotiator depends on how smart you are.
4. Negotiation performance is dependent upon the negotiator's personal abilities.

Opponent Items

1. Negotiation success depends primarily on your opponent.
2. Whether you do well in negotiation is determined mostly by what the other person does.
3. The opponent is the most critical factor in determining negotiator success or failure.
4. In negotiation, performance depends upon the opponent.

Posttraining

Personality Items

1. To successfully apply this training in a negotiation, you have to have the right personality.
2. There is a type of person who can apply this training.
3. The most critical determinant of whether you can successfully employ this training is personality.
4. Good negotiators need to have personalities like business leaders, salesmen, or agents.

Effort Items

1. Success at applying this training depends upon your effort.
2. Anyone can apply this training if they invest the effort.
3. Being a good negotiator is, in large part, a function of trying hard.
4. People who succeed at using this training do so because they work at it.

Strategy Items

1. Success putting this training to use is determined by using the right strategies.
2. Anyone can use this training by knowing the key strategies for applying it.
3. Using the right techniques and methods allows you to apply the training.
4. Good negotiators succeed because they use the right strategies to employ their training.

Ability Items

1. Success in using this training is primarily determined by ability.
2. Intelligence is what makes someone good at using this training.
3. Whether or not you can effectively employ the training depends on how smart you are.
4. Putting this training to use to yield good performance is dependent upon the negotiator's personal abilities.

Opponent Items

1. Negotiation success depends primarily on your opponent.
2. Whether you do well in negotiation is determined mostly by what the other person does.
3. The opponent is the most critical factor in determining negotiator success or failure.
4. In negotiation, performance depends upon the opponent.

Pretraining Motivation

Confidence

1. I will get more from this training than most people.
2. I am confident I will do well in this training.
3. I am confident I can improve my skills by participating in this training.
4. I will be able to use the information and behaviors I learn in this training to improve as a negotiator.
5. I can become a good negotiator.
6. I am confident I can learn the material presented in this training course.

Desire

1. I am motivated to learn the skills emphasized in the training program.
2. I will try to learn as much as I can from the training.
3. I am interested in learning the training material.
4. One reason I decided to attend today was to improve my negotiation skills.
5. I want to improve my negotiation skills.
6. I am willing to exert considerable effort to improve my skills in this training program.

Pretraining Willingness to Invest Effort

1. I intend to work hard to learn the material in this training course
2. I am going to put forth a lot of effort if needed to learn the material
3. I intend to concentrate and try to learn the information in this training.
4. I intend to try my best to become a good negotiator in this training.
5. I am going to really try and learn the negotiation strategies and how to use them.

Posttraining Motivation

Confidence

1. I be able to apply what I have learned from this training more than most people.
 2. I am confident I will do well in the negotiation simulation.
 3. I am confident I can apply what I have learned in this training.
 4. I will be able to use the information and behaviors I learn in this training to improve as a negotiator.
 5. I can apply the skills I have learned to become a good negotiator.
 6. I am confident I can put to use the material presented in this training course.
7. How confident are you that you are capable of recognizing when it is appropriate to use this strategy during the negotiation

| | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Attitudinal Bargaining | <input type="checkbox"/> Issues before resolution | <input type="checkbox"/> Contrast |
| <input type="checkbox"/> Broken Record | <input type="checkbox"/> Contingent/noncontingent gain | <input type="checkbox"/> Silence |
| <input type="checkbox"/> Compensatory Compromises | <input type="checkbox"/> Jujitsu | |
| <input type="checkbox"/> Appeals to interest | <input type="checkbox"/> Direct counter | |

8. How confident are you that you can use this strategy to increase a final offer during the negotiation simulation

| | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Attitudinal Bargaining | <input type="checkbox"/> Issues before resolution | <input type="checkbox"/> Contrast |
| <input type="checkbox"/> Broken Record | <input type="checkbox"/> Contingent/noncontingent gain | <input type="checkbox"/> Silence |
| <input type="checkbox"/> Compensatory Compromises | <input type="checkbox"/> Jujitsu | |
| <input type="checkbox"/> Appeals to interest | <input type="checkbox"/> Direct counter | |

Desire

1. I am motivated to use the skills emphasized in the training program.
2. I will try to use as much as I can from the training.
3. I am interested in applying the training material in the negotiation simulation.
4. I want to attend the negotiation simulation to try and use my negotiation skills.
5. I want to try to use my negotiation skills.
6. I am willing to exert considerable effort to apply my skills in the simulation.

Willingness to Invest Effort

1. I intend to work hard to apply the material in this training course
2. I am going to put forth a lot of effort if needed to use the material. .
3. I intend to concentrate and try to use the information in this training.
4. I intend to try my best to use the training to be a good negotiator.
5. I am going to really try and enact the negotiation strategies.

Posttraining Declarative Learning Measure

Use the following list of strategies and place the correct strategy in the blank:

1. If your opponent does not hear or is not responsive to what you are saying, an effective strategy to deal with that would be _____.
2. _____ is an effective bargaining strategy that involves the use of contained enthusiasm, confidence, and a positive mental attitude.
3. When you want to indicate to an opponent that what they said is too unreasonable to be considered, or if that they have responded to a question inadequately, you should use _____.
4. Your opponent indicates that your demands seem excessive given the product you are selling. A good response at that point would be to use _____.
5. Your opponent begins to bring up weaknesses in your position. To regain momentum in the negotiation your best bet would be to use _____.
6. _____ is an effective way to justify your position that what you have is worth more to your opponent than they are offering.
7. Your opponent has just attempted a trick and is acting very angry with you. The best strategy to use would be _____.
8. Your opponent tries to bring the negotiation to a premature close. Your best response is _____.
9. You are approaching the end of the negotiation. The person does not appear willing to budge on the price anymore, you might still make some gains by negotiating for _____.
10. _____ provide an effective negotiation technique when you are concerned that your opponent may not be able to come through on some aspect of a potential deal.

Posttraining Knowledge Measure – Script

| Person 1 | Person 2 |
|---|--|
| Well, thanks for coming to the meeting. After talking to our board, we've decided to put in a bid on buying your client's book so we can make it into a movie. | |
| We're prepared to offer \$100,000 | Well, my client is excited to get going in the motion picture industry. I appreciate that you have confidence in his work. |
| OK, what's on your mind. | I think there are a few things I'd like to discuss before we get to specific price figures. |
| That's true, I suppose that we might be able to take that into account. Perhaps 110,000. | Well, I know that your studio is interested in making movies out of prestigious books. After all, it lends credibility and draws audience. As you may know, this book one the American Literary Award for Fiction. |
| I take it that's not acceptable? How about 115, is that more acceptable? | [SILENCE] |
| That's true, I know he has screenplay experience and could provide a draft. I suppose that we could add something for that. But, I'd like to point out that we're very concerned about being done on time. Your client may have screenwriting experience, but he has not worked under a tight schedule like we're working in before. If the initial draft of the screen play is not done by June, we could lose a lot of money. | I appreciate your confidence in my client's work. I'd also like to point out that as you are interested in having him provide a screenplay as part of the contract, he has experience as a screenplay writer. |

We could accept that. We could put up 5000 for the initial work, and another 5 if it is in on time.

Remember, your client will be supervised by Tom Hanson, the academy award winner. No other studio is going to let him work with someone like that out of the gate. We're the only studio to have Tom.

Ok, then we've got a deal!

What! Oh you've got to be kidding! Creative control for a kid making his first book? You know, we should walk out of here for that kind of crap. You must be stupid to ask for creative control for a kid like that!

No, go on.

Certainly, that's a concern, we understand that. But my client suggests that he's sure he can get it done. Perhaps part of the screenplay salary can be put out in the form of a bonus that is reduced if it is late.

10,000 for the screenplay? Look, according to last year's Variety, the going rate for a screen play by the author of the book is 20% which puts this one over 21,000 now.

That's a legitimate point. I'd imagine my client would accept 14, 000 since it means working with Tom. Seven up front, seven in bonus. I'll have to check but I'll agree pending approval.

Well, we'd like to discuss creative control.

(Calm) Look, making threats and insults is not going to get us closer to a fair deal. Maybe we need a break?
(waits for other side to calm down.)

I appreciate that you're concerned with his youth. And certainly, he's new to the industry. On the other hand, it gives him a fresh eye. That's why his work is so different from what's out there. That's why you like him! Now, we're not asking for total control, but he's concerned that his work not get away totally from what he's created.

Look, I can understand not wanting your work to be bastardized. What if we agree to allow him to sit in on creative meetings, and allow him a read of the final product. That way, he can make a case for his points. That's all I can do for you.

Look, we're not prepared to go above 124. That's going to have to be it. It's in the top 10 percent of our first contracts, and anything above 124 is going to have to be for Pulitzer prize winners. Otherwise we'll blow our scales. Imagine what an established guy like Tom Clancy will want!

Copyright? Oh, well, we can pick that up. We'll take care of his copyright for him. Heck our lawyers can do that no problem.

I think we can accept that.
Now we're up to 124,000 with bonus.
What if we call it 130,000.

Look, the issue for my client is copyright fees. He's going to have to pay the copyright fees and lawyers. Could you pick up taking care of copyright internal to your studio?

Excellent. Then that's taken care of.

Posttraining Learning Measure – Instructions

The tape you are about to hear is a negotiation between an agent and a negotiator for a small movie studio. Listen to the negotiation carefully. As the techniques you learned in the training are used, write the name of each strategy next to where it is used in the script along the margin. Either person may use a strategy, some strategies may be used more than once, some may not be used at all.

The tape may move quickly, so if you hear a strategy but do not have time to write the name in, place an “x” in the margin and you will have a brief period to write in any that you missed.

Posttraining Application Learning Measure

Chris is buying a house, and is in the midst of final negotiation with the real estate company that is selling the house. Chris is surprised at the turn of events. The real estate company has readily conceded to the last two points. The latest issue on the table now is Chris's desire that they agree to have several trees planted on the property before he moves in. The company representative now frowning, crossing his arms, and shaking his head. Chris notices some brusqueness in the representative's manner when the representative responds that Chris appears to have a lot of expectations for someone seeking to buy a home, that several of Chris's requests have been accommodated, and that the standard agreement for the company is that the house and property come as is.

Briefly: (1) Explain what you think is going on; and (2) what you think would be the best approach for Chris to regain momentum in the negotiation.

Transfer Task Scenario

Confidential Instructions for the Employee, Jody Billings

You are a 28 year old engineer and have worked for your current employer, Arthur Andersen and Co (a major competitor of Price Waterhouse) for five years. Until two years ago, you were a "rising star," you regularly worked 70-80 hours a week and jumped at every opportunity to travel for the company. Since your car accident two years ago, which nearly cost you your right leg, your work pace has slowed down.

After the car accident, the physical therapy necessary in order for you to save your right leg became your top priority. As a result, you reduced the number of hours you work to 40 hours per week. Unfortunately, your current supervisor, Pat Robbins, arrived "on the scene" just after you came out of the hospital. As a result, Pat has not seen you perform at your full potential. Because you told your supervisor that no project or deadline was more important to you than your physical therapy, Pat has generally kept you off projects that require critical problem solving ability and instead put you on projects that require simple (less time consuming) thinking.

It is now over two years since the accident. Last week for physical therapist told you that the strength in your right leg is fully restored, and you can stop therapy. This news could not have come at a better time. Just last week you heard that Price Waterhouse is looking for someone to take a senior consultant position to redesign a computer-based accounting system which is currently causing a major client to lose substantial sums of money.

You feel that you are the best candidate for the position due to your graduate training (you have an MBA from MSU with a concentration in accounting) and the fact that the senior consultant chosen will be asked to "troubleshoot" the problem with the head of the Management Information Systems group in the client firm: Terry Manns. Terry was your previous supervisor at Arthur Andersen for three years, and unlike most people, you get along with Terry fantastically. (Most others are put off by Terry's inflated ego and quick temper.) It is very difficult to engage in healthy, productive problem solving in conflictual situations. You know that your working relationship with Terry would be like it was when Terry supervised you--smooth, highly motivating, and *productive*.

You have scheduled an appointment with the Director of Personnel at Price Waterhouse to discuss your interest in the senior consultant position and the salary you desire. You are currently making \$35,000 a year. You suspect your current salary is on the low end of what Price Waterhouse pays its senior consultants. An increase in salary is certainly something you need right now to help you pay the enormous expenses of your physical therapy.

Getting the senior consultant position is more important to you than salary, however. Above all else, you want to re-establish your reputation in the field as an outstanding analyst, something your current supervisor has prevented you from demonstrating, due to the "Mickey Mouse" assignments Pat has been giving you.

This latter point and your unique "personality fit" with Terry Manns are points you must stress in your upcoming negotiations with the Personnel Director. You fear that your reduced work pace and absence from significant work in the last two years may make you appear less able than others to adequately fill the senior consultant position. You are also not confident that Pat will give you a strong recommendation.

You know that the Personnel Director is very busy and you should anticipate that you will only have 15 minutes or so to negotiate the salary you want as senior consultant with Price Waterhouse.

Good luck!

Confidential Role Instructions for the Personnel Director

You are the Director of Personnel at Price Waterhouse (a major competitor of Arthur Anderson). The last six months, one of your major clients has been losing substantial sums of money due to a computer-based accounting system which is not well suited to their needs. At a meeting with your top management last week, it was decided that your analysts were preoccupied with too many other projects to give sufficient attention to the critical and costly problem your client is facing. Therefore, top management decided to advertise a senior consultant position whose exclusive responsibility would be to remedy this critical problem.

Against your expressed wishes, top management additionally decided that the senior consultant would "troubleshoot" the problem with the head of the Management Information Systems group in the client firm, an individual by the name of Terry Manns. You opposed the idea since most people in that company have difficulty working with Terry as a result of Terry's inflated ego and quick temper. It is very difficult to engage in healthy, productive problem solving in conflictual situations. However, healthy, productive problem solving is what's needed to solve the client's expensive accounting problem, and you fear that pairing the senior consultant with Terry Manns will therefore prevent successful problem solving from occurring -- or at least occurring as quickly as you'd like.

One of the first people to call you about the senior consultant position was Chris Thompson (who has been with your competitor, Arthur Anderson, for the last five years.) Terry Mann supervised Chris Thompson for three years before becoming the head of the Management Information Systems group at the client firm, a position Terry took two years ago. When supervised by Terry, Chris performed outstandingly: Chris worked 70-80 hour weeks routinely, and jumped at every opportunity to travel for the company. During that time, Chris's analytical abilities were exceptionally quick and thorough as well. (Chris has an MBA from MSU with a concentration in accounting). Unlike most others in the company, Chris got along fantastically with Terry Manns, and therefore you think that Chris may be the best suited for the newly created senior consultant position.

Since Chris's car accident two years ago, however, Chris has *not* been outstanding, and you therefore have some doubt regarding Chris's suitability for the senior consultant position. You know it's because of the physical therapy Chris had to receive in order to save Chris's right leg that caused Chris to reduce the number of work hours to 40 per week and refuse all travel opportunities. Chris's current supervisor Pat Robbins, who replaced Terry Manns just after Chris came out of the hospital, told you that because no project or deadline was more important to Chris than the physical therapy, Pat has kept Chris off of projects that require critical problem solving and assigned Chris to tasks that require simple (less time consuming) thinking instead. Pat therefore was not able to give you an opinion regarding Chris's current analytical competence.

On the phone, Chris told you that the strength to the leg was fully restored and that physical therapy was no longer needed. You have scheduled an appointment with Chris to discuss your interest in filling the senior consultant position and negotiate a salary you will pay Chris if you choose Chris for the position. You know that Chris is currently making \$35,000. Senior consultants at Price Waterhouse generally earn between \$35,000 and \$45,000, depending on their tenure with the company, performance record, and degree of education.

You believe that Chris wants this position very badly in order to make the "career comeback" Chris needs to re-establish a strong reputation in the field. For this reason, you think that Chris would probably settle for a salary as low as \$37,000 for the mere opportunity to take the critically important responsibility of senior consultant and heroically save the company from more profit losses. To justify paying Chris a low salary for the position, you must stress in the upcoming negotiation that **Chris's analytical competence and drive are questionable given Chris's absence from work and reduced work pace in the last two years.** Other candidates for the position (there are 3) are similar to Chris in all respects (experience and education) except for Chris's ability to work with Terry Manns. And you know that you would have to pay others a greater salary (relative to what Chris would take) to get them to take what will be a very **time consuming** project.

Pre Negotiation Questions

Interim Activities

What did you do to prepare for the negotiation? Read each activity listed. In the columns to the right, place a check next to any activity you performed since the training to prepare for the negotiation simulation. For any activity you check, please estimate the number of minutes devoted to this activity in the next column.

| | Place a ✓ in this column if you did this activity | # of minutes devoted to this activity |
|---|--|---|
| 1. Practiced using the strategies with a partner. | | |
| 2. Tried to identify opponent's interests. | | |
| 3. Set a goal for the salary you hope to obtain. | | |
| 4. Set goal for the strategies you want to use. | | |
| 5. Thought specifically about how to achieve your goals. | | |
| 6. Identified obstacles to achieving your goals. | | |
| 7. Planned how to overcome obstacles to achieving your goals. | | |
| 8. Reviewed the training material (or notes, etc). | | |
| 9. Identified options for mutual gain to use during the negotiation. | | |
| 10. Monitored your progress in using/reviewing the strategies. | | |
| 11. Thought about how to improve your use of strategies for which your skills are weak. | | |
| 12. Thought about how to improve your use of strategies for which your skills are strong. | | |
| 13. Planned/prepared how you would conduct yourself during the negotiation. | | |
| 14. Critiqued your performance from training. | | |
| 15. Thought about some sources you could use for contrast effects during the negotiation. | | |
| 16. Considered weaknesses in your role and how you would deal with them during the negotiation. | | |

17. Place a ✓ next to the statement that reflects how much you used the optional exercise.

- ☐ I did not look at the exercise at all
- ☐ I read through the exercise, but did not complete it
- ☐ I completed part of the exercise, but not all of it
- ☐ I completed the entire exercise
- ☐ I completed the entire exercise and thought about how to improve

Post Negotiation Questions

Please indicate how well each adjective describes how you think the negotiator behaved during the negotiation.

| 1 | 3 | 5 | |
|-----------------------------------|---------------------------------------|-------------------------------------|---------------------------------------|
| ----- ----- | | | |
| Not at all | Somewhat like | Very Much | |
| Like the Negotiator | the Negotiator | Like the Negotiator | |
| <input type="checkbox"/> Pleasant | <input type="checkbox"/> Disagreeable | <input type="checkbox"/> Reasonable | <input type="checkbox"/> Intimidating |
| <input type="checkbox"/> Fair | <input type="checkbox"/> Difficult | <input type="checkbox"/> Unpleasant | <input type="checkbox"/> Friendly |

Prior to the negotiation, if you set a goal for a specific salary amount you hoped to attain, please indicate the goal you set for the negotiation_____

If you changed the goal during the course of the negotiation, please indicate the goal or goals that you changed to:_____

Negotiation Scoring Sheet

Subject Number_____

Time Started: _____

Time Stopped:_____

Final Salary:_____

Salary Level

| | + | - | | + | - | | + | - | |
|----------------|-----|-----|--------------------|-------|-----|-----|-------|-----|-----|
| 37000 | ___ | ___ | | 41250 | ___ | ___ | 44500 | ___ | ___ |
| 38000 | ___ | ___ | | 41500 | ___ | ___ | 44750 | ___ | ___ |
| 38500 | ___ | ___ | | 41750 | ___ | ___ | 45000 | ___ | ___ |
| 38750 | ___ | ___ | (attack/look away) | 42000 | ___ | ___ | 45250 | ___ | ___ |
| 39000 | ___ | ___ | | 42250 | ___ | ___ | 45500 | ___ | ___ |
| 39250 | ___ | ___ | | 42500 | ___ | ___ | 45750 | ___ | ___ |
| 39500 | ___ | ___ | | 47500 | ___ | ___ | 46000 | ___ | ___ |
| 39750 | ___ | ___ | | 43000 | ___ | ___ | 46250 | ___ | ___ |
| (attack) 40000 | ___ | ___ | | 43250 | ___ | ___ | 46500 | ___ | ___ |
| 40250 | ___ | ___ | | 43500 | ___ | ___ | 46750 | ___ | ___ |
| 40500 | ___ | ___ | | 43750 | ___ | ___ | 47000 | ___ | ___ |
| 40750 | ___ | ___ | | 44000 | ___ | ___ | | | |
| 41000 | ___ | ___ | | 44250 | ___ | ___ | | | |
| | | | | | | | 50K | ___ | ___ |

Active Strategies

| Strategy | 1000 | 500 | 250 | 0 |
|--|-------------|------------|------------|----------|
| Attitudinal (contained enthusiasm, confidence) | _____ | _____ | _____ | _____ |

Appeals/Interest _____
(relevant experience, quality of ed, personal qual)

Contrast _____
(sense of relativity, other market salaries, other offers,
request in perspective)

Mutual Gain

Contingent _____
(Probation at higher salary, raise/bonus contingent on perf.)

Noncontingent _____
(relative value of special qualities, female, minority, able to
counsel others, etc.)

COMPENSATORY PROMISES

Reactive Strategies

| Strategy | 1000 | 500 | 250 | 0 |
|--------------------------------|-------------|------------|------------|----------|
| Silence (15 seconds) | — | — | — | — |

Issues/Resolution _____
(places issues before any salary resolutions)

Broken Record _____
(reiterates case when you don't listen)

Direct Counter _____
(calls you on your non-verbal comm, direct tactful way)

Jujitsu
(acknowledge attack, ->discussion to underlying issue, strength)

NEGATIVE STRATEGIES

Loses cool/anger (-2000)____
 Attacks you or organization (-2000)____
 Extreme nervousness (-1000)____
 Gives salary amount (-1000)____

OVERALL: (If at least 2 are checked & candidate at 47K, jump to 50K)

Candidate Calm/mature_____

Exceptionally good appeals to interests_____

Positive, persistent negotiations

Exceptional proposition for mutual gain_____

APPENDIX B

NEGOTIATION TRAINING

Introduction

The training you're about to receive is going to be fast paced, and cover particular strategies that you can use to be an effective negotiator. Although there are dozens of potential negotiation strategies from the unethical tricks to the common threat, we will be focusing on strategies that are useful for 1 on 1 types of negotiations. We will also be using the concepts from what is called "Principled Bargaining". This concept was developed at Harvard and tested on Harvard MBA students. We also draw from assertiveness training concepts and social psychological research. The training has been condensed from a much longer course in order to cover a maximum amount of material in a minimum amount of time. People have paid anywhere from \$500 to \$1000 for the full-length version of such courses. We will cover some basic approaches to negotiation, some active strategies, and some reactive strategies. You will be given a chance to practice some of the strategies as we go. At times, you will be asked to give your answers or practice out loud. Finally, at the end of the training, you will arrange a time for a negotiation simulation to apply what you have learned.

Negotiation Training

In business, you don't get what you deserve, you get what you negotiate. – C. Karras

Negotiation is a means by which people attempt to come to an agreement despite different interests.

When we consider how people negotiate, or basic philosophies of negotiation, there are a number of different approaches to negotiation that have been developed. People may be using these consciously, they may use them just because the approach presents itself, or they've learned to use them over time because they've had success with them.

Positional Approach – this is the approach most people are familiar with. It is the idea that each side takes a position, and goes through some give and take. End up somewhere in the middle. The problem is that often the decision pleases no one, and the person that is most unreasonable will get the better of the split. It becomes a game. Both sides start with exaggerated positions, and know that the other side is doing that, too. So, neither side believes the other is serious. In addition, the sides use selective information that supports their side and ignores information that supports the other side.

Issue Approach – this comes from the idea called “principled bargaining” developed by Fisher and Ury at Harvard. It is the preferred, most successful approach in most circumstances. It involves

Negotiation sessions should be viewed philosophically as information exchange opportunities. By discussing the underlying issues, you should reach an agreement that is consensually valid (wise).

Negotiation sessions are demanding, sometimes stressful, and you may not always get what you want. They require 2-track thinking: One track must attend to the details of the discussion, and the other track must continually assess and make corrections to the ongoing strategy and emotional tone of the session. What will you present next, what strategy, is this a big thing or a minor issue, etc. However, advanced preparation, strong use of 2-track thinking, and practice can enhance your gains over time.

Let’s look at some strategies you can use when negotiating.

There are two basic types of negotiation strategies we’re going to cover: Active and Reactive. Active are the ones you’ll initiate and be in control of. You’ll decide when to use them and how. The other type are reactive, these strategies are normally employed in response to what the opponent does. We’ll start with active.

ACTIVE NEGOTIATION STRATEGIES

1) ATTITUDINAL BARGAINING (Psychological)

One of the issues you will have to determine first is your attitudinal approach to negotiation. Attitudinal bargaining involves determining the attitude that you will adopt.

Confidence – confidence is critical to negotiation. If you don't appear confident about your position, how will you expect the other person to take it seriously? What are some behaviors that demonstrate confidence?

- eye contact, not fidgeting, facial expression, calm, determined voice tone, and the words you use. Avoid a lot of qualifiers and hedging.

Contained Enthusiasm – in a negotiation, when someone makes you an offer, or you find something that could meet your interests, it is often reasonable to be enthusiastic. In many cases, you would lose some credibility if you were totally unenthusiastic, if you didn't care at all you wouldn't be negotiating. But, you also can't be like "YES! I've been looking for one of these forever! I've checked everywhere!" You weaken your position. In order to keep a good relationship open, but also maintain leverage, when dealing with an offer (giving or receiving) it is appropriate to express some pleasant enthusiasm, but it should be controlled, calm enthusiasm.

- Yeah, it's a great car, I'm glad you have an interest in it...
- Yes, it is an interesting proposal, and I'm excited to talk it over...

Attitudinal Bargaining Exercise

Have people come before the class. Give them this little story and have them demonstrate.

Exercise 1: You are working at a flea market trying to sell an old document that may or may not be a revolutionary war document signed by General Sherman. You have your doubts about whether it is real or not. You've been trying to move this item for a long time but without success. You know that it has a lot of flaws, but it does have some interest as a conversation piece at least. It has been taking up space and you're very anxious to get anything you can get for it. Suddenly, someone approaches you and shows some real interest in buying it. They make you an initial offer.

- Demonstrate the absolutely incorrect way to receive an offer based on what we've learned.
- Demonstrate the correct way to receive the offer, consistent with what we've learned in attitudinal bargaining, and turn it into a negotiation.

Exercise 2: You're shopping at a flea market. As you are walking, you come across what you are quite sure (as an expert in this area) is a genuine Ming Dynasty Vase worth \$10,000. There is no price listed on the vase, but you're pretty sure the person would not be selling it here if they really knew what they had. You DEFINITELY want to walk out of here with that vase no matter what. But, you also don't want to pay more than you have to...

- Demonstrate the absolutely incorrect way to make an offer based on what we've learned about attitudinal bargaining.
- Demonstrate the correct way to receive the offer, consistent with what we've learned in attitudinal bargaining, and turn it into a negotiation.

2) APPEALS TO OPPONENT'S INTERESTS

The heart of negotiation is justifying your position to the opponent. To do this, you have to have a good understanding of what about your products or services interests them. Remember that they almost certainly have multiple interests. This is why negotiation is hard -- people have more than one interest -- they have many interests underlying a negotiation position.

You have to take THEIR point of view. What are THEY trying to get out of this? Because YOU want something does not mean they do. "I want you to lower the price because I'm already in debt" is not speaking with their interests in mind. You have to zero in on what kinds of things they want. Sometimes, these things are pretty clear.

Often, particularly for more complex negotiations and issues, things are not as clear. It is a mistake to assume you always understand the interests of the other side. There may be things they are contending with that you have not taken into account. There may be interests holding them up from agreeing that you could help resolve to make the negotiation move forward.

- To determine what their interests are, you can put yourself in their shoes. Ask "Why have they taken that position?" You can even ask the other party in the negotiation. You can do this by asking why in a way that does not ask for justification, but understanding. "What is your concern in asking for that?"
- Sometimes, it also helps to examine "Why not?" that is, why they have not taken your position. From their point of view, what are the pros and cons associated with your position?

You should spend time in your preparation considering what your opponent's interests are so that you can appeal to them smoothly and without a lot of hesitation and thinking.

Uncovering Interests -- The Bridgewater Police Department Negotiation

You represent the Bridgewater Commissioner of Police. You are going to have to negotiate the next union contract. The union officials have given an initial list of demands from the next contract. Based on this list, what to you think are the officer's interests that seem to be behind their position? What interests would you appeal to in trying to sell a different position?

- They want more officers on duty at any given time for backup
- They want a 4% raise across the board
- They want more promotion from within the department
- They want more defensive tactics training
- They do not want a reduction in their liability insurance provided by the department
- They want more training on legal issues relevant to officers
- They want 2 days off the road to study before taking tests for promotion
- They want to set up a website for the department

Apparent interests behind their requests?

3) CONTRAST EFFECT (sense of relativity)

The contrast effect is comparing a position stated by your opponent with an objective standard to demonstrate how a position stacks up against some external standard. This is especially useful when they provide position or offer that is somewhat unrealistic to you, or they accuse you of being unreasonable.

The idea of using some objective standard is important for getting out of arbitrarily determined positions, ones that may be very high or low. It can also be used to justify a demand of yours that they feel is excessive or unreasonable. The idea is to demonstrate some standard for defining “reasonable”.

Many times, negotiators will attempt to take advantage of a psychological phenomenon called “anchoring and adjustment”. The anchoring and adjustment heuristic suggests that if you can set an arbitrary initial starting point, people lacking other information will adjust relative to it their anchor. So, if you don’t do your homework you might ask how much I want for a piece of furniture, and I’d say “\$100”. That’s an arbitrary figure I made up, I may know the piece is only worth only \$50.” Without other information, you’ll begin negotiation to bring me down from \$100. You might be happy if I dropped my price to \$70, after all I might have made many different concessions! You’d feel like you’d made lots of progress. But you’d still have not gotten sufficient adjustment from my arbitrary anchor. Therefore, it is helpful to get away from arbitrary figures to have some standards of comparison, and use them when negotiating.

This idea is consistent with the idea of using fair and objective standards. It requires doing some research ahead of time so that you have information to use as a standard. If their position is below the standard, you can contrast their position with the objective position to give you more credibility. If they accuse you of setting out an unreasonable position, you can say “well, the average price for this type of furniture that is an antique like this one is 50 dollars, and this piece is in condition that is better than average.”

Another way to get this contrast effect is to get other offers. Just as someone building a house would get several bids to get information, this gives them leverage with higher priced bidders to negotiate. Similarly, you can use experience of others in a similar situation as yours.

- Other houses of similar age and size in this neighborhood have sold for 10K less
- The blue book value of the car is 1,000 less than that
- I saw the same TV at the other store, but it was 40 dollars less
- The average price of a piece of land here is that, but this one is well beyond average because of...

Contrast Effects

Suppose you were trying to buy a used computer from a friend of yours. The computer is several years old, but your friend is only reducing the price just a little bit. When you suggested a much lower price, he said, “you’re nuts! This is a great computer! I’ve never had any problems with it or anything!” You suggest that you talk more about it later.

How might you use a contrast effect to show your friend you’re not being unreasonable? Where could you get information to use as a contrast? Suggest as many as you can.

4) PROPOSE OPTIONS FOR MUTUAL GAIN

The idea of options for mutual gain comes under the concept in principled negotiation, looking for win-win situations. You are looking to address both their concerns and yours.

A. CONTINGENT OPTIONS

Developing contingent options involves suggesting that an option desired by one side could be dependent upon something which ensures the satisfaction of the interests of the opposing side.

Contingent options thus look out for interests of both sides. Contingent options tie outcomes together. “If this happens (my interest), then that happens (your interest).” Often, uncovering such options requires some forethought, and some exploration of possibilities and interests of both sides. Many times, you’re looking at options not initially on the table.

Contingent options can be used as protection. One side may be concerned with the ability of the other side to live up to an obligation. Thus, a benefit is made dependent upon reaching some obligation.

- If a mechanic checks out the car and says it’s ok, then I’ll buy it.
- If the house is completed by November, then the builder gets a bonus.
- I’ll buy 2 at ten dollars a piece, but 4 at 8 dollars a piece.

B. NON-CONTINGENT OPTIONS

Suggest things that the opposition is getting that are worth compensation because they are benefits NOT contingent on anything. These benefits are often unique to what you offer. They might be beyond normal interests, but still appealing or meets interests they might not have considered. Thus, you may have to probe for information and interests. Or, they might be obvious, but still special to you.

- This is a numbered painting in a series increasing it’s value.
- Our company is the only one licensed to offer this product in the state, saving you import taxes.

5) COMPENSATORY OFFERS

Because life is complicated, and any position will typically reflect a number of underlying interests, we can attempt to balance a shortcoming in one area with the provision of gains in another. Compensatory offers are compromises that provide gains outside of what might be considered the primary interest or contention, but meet other interests and thus serve as compensation.

Compensatory offers are useful in a number of different circumstances. For example,

- A. When an opponent has gone as far as you think they can/will in one area;
- B. When an opponent is unable to control some aspects of the situation, but does have control over others;
- C. When an offer is deficient in one area, but the deficiency can be balanced by another;
- D. When one side can meet important interests of the other at little cost to themselves.

To use compensatory offers you are trying to compensate for a weakness of yours by offering something to compensate, or better yet, attempting to get the opponent to compensate for a weakness of theirs by offering something else. If they have no control, or are not willing to budge and you think they've gone as far as they will but you're still not satisfied, you try to get them to compensate you in some area they *do* have control over, or that they are willing to concede on, or that is outside of the main area of the negotiation.

For example,

- Keep the price of the car but arrange better financing that saves money.
- There is no apartment with more closet space, but I do have a storage space in the basement that is not being used which you could have.
- Keep the price of the watch the same, but add in a better watchband.

Options for Mutual Gain & Compensatory Offers

Role 1

You're the lead negotiator for Trimark Automotive, an auto parts manufacturing firm. You're negotiating to get a deal from Samurai Motors, a major car manufacturer. They want you to produce a particular kind of converter for them. Samurai is considering making the part internally, but they also know that has costs associated with it. Your plant is located only 30 minutes by truck from their major US production plant, much closer than your nearest competitor which will cut down on expenses for both companies. In fact, your trucks routinely pass their plant empty on the way to pick up supplies, and could drop off parts daily with virtually no cost to your company, although the buyer (Samurai in this case) normally pays for transportation in such deals. Plus, your Production Manager once worked for Samurai in Japan before moving to the USA, so he can help with communication and coordination. In addition, the work for their part is very complicated, and you are one of the few firms with experience in making a similar part. However, they are concerned. They run a very quality conscious shop and are worried that anyone outside of their company won't meet their very tight standards. They run at about 2% rejection rate, but your company currently has about 3% rate. You feel you could bring it down to the 2% level, though with a little effort and emphasis on it. They want you to adopt their system of "Total Quality Manufacturing" but you're reluctant because it would mean a lot of hours of training that would eat up all of the training budget. You estimate it would cost about \$100,000 to get up to speed in the new system. You wouldn't mind putting in a good amount if you had to, but you can't afford to pay for it all! So, you'd rather avoid trying their system and try to improve the quality rate through other means.

Although your company has done some work for manufacturers, it has never handled a job the size of this one -- not even close. You know that if you fail to produce enough parts on schedule you'll shut down their production line and that will cost big money to them! You feel that if you could get 10 more qualified people, you could start up an extra line and ensure that would never happen. But to find and train 10 experienced line workers is going to cost you about \$20,000.

The major element of the contract, the price of the work itself, has been settled at 12 million (1% over estimated costs to you, industry standard), acceptable to both sides. This won't change. As is typical in such deals, you'd expect them to offer to pay for transportation of the parts.

Take a few minutes to consider the interests of both sides. Identify potential contingent and non-contingent gains, and compensatory offers you could give or seek. Feel free to be creative and add to what is written in order to do so. Then, work with your opponent to try and strike a deal!

Options for Mutual Gain & Compensatory Offers

Role 2

You are the lead negotiator for Samurai Motors, a major Japanese car manufacturer. Your new model requires a particular part, a converter that is very complex. Few companies have made such a part. Some inside your company want to do it in-house, you're currently considering laying off 12 workers from your own production lines which will really make the union unhappy, so tempers in the company are flaring over using an outside firm for this work. But making the part yourselves would involve a lot of startup costs and some time to learn to produce the part. Fortunately, Trimark Automotive, a nearby parts manufacturing firm, is one of the few who have experience making a similar part. However, they are a small firm. They've probably never handled any order so big. This worries you since if you run out of parts and shut down your production line, it winds up costing about \$40,000 per minute! That's a major issue. You'd have to take out "shut down insurance" which would cost you \$20,000, you wouldn't have to spend that money on other bigger companies. Plus, as an American company, will you be able to coordinate effectively with them?

Another major concern for your company is their quality standard. Your standard for parts are among the industry's highest. Anything over 2% rejection rate is totally unacceptable to you, and you'd estimate their current rate is about 3% or higher meaning they would send you too many unusable parts. One way you think they could improve is if they would adopt your Total Quality Manufacturing system in their plant to ensure quality. They are not going to want to do this, you'd imagine since it will cost a good amount to put the system in place. It's not a deal breaker that they adopt your system, but you need them to do it to improve their quality, which is the real issue for you. You'd be willing to kick in some money (up to \$40,000) to help them adopt the Total Quality System, but you'd rather not since the people calling for making the part in-house will complain that it is an extra cost. You'd rather they pay for that training themselves.

The price of the contract itself has been settled at 12 million (1% over estimated costs to them, industry standard), acceptable to both sides. This won't change. As is typical in such deals, you (the buyer) will offer to pay for transportation of the parts from their plant to yours, about \$50,000 per year. You also have about \$50,000 in "miscellaneous costs" in your budget you can use at your discretion. Of course, the less of it you use, the better.

You really want to get this deal done as would save Tsunami a lot in startup costs. But, you'll have to clear up the lingering doubts and details first. Take a few minutes to consider the interests of both sides. Identify contingent and non-contingent gains, and compensatory offers you could give or seek. Feel free to be creative and add to what is written in order to do so. Then, work with your opponent to try and strike a deal!

REACTIVE NEGOTIATION STRATEGIES

1. SILENCE

Let's change gears now. Let's try a brief role play. Let's say you're trying to buy my car. We both know it's worth about 10,000 dollars, but you decide to come in with a low ball offer. You decide to try 4,000. Go ahead and offer me 4,000 for the car.

[Respond to offer with silence technique, eye contact, raised eyebrows, maintain silence.]

(When silence broken) What did that response convey?

[wait for answers] Yes, it says "come on, that's not a serious offer. That's not even worth responding to." Right?

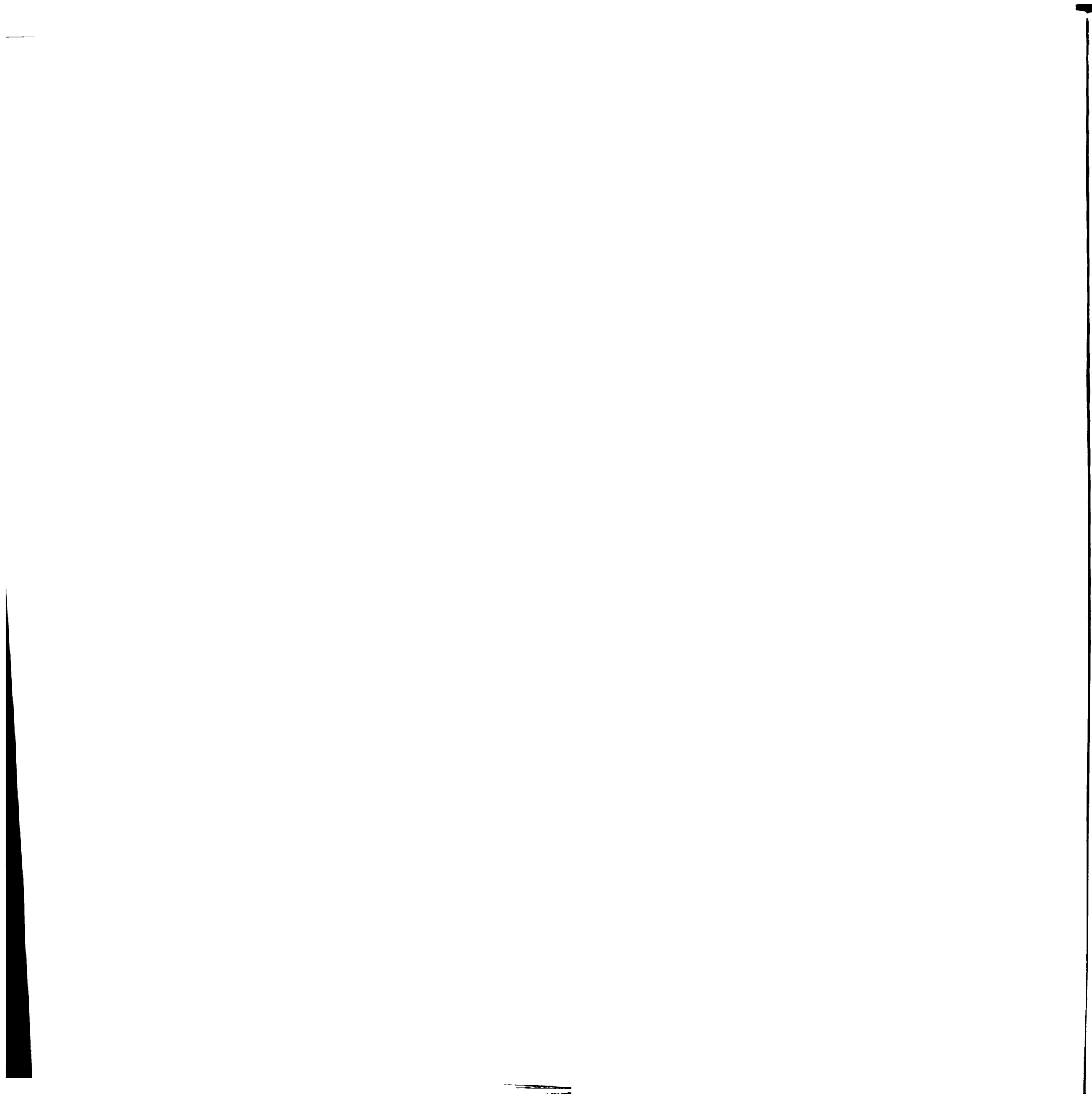
Silence is a technique that involves responding to an inadequate offer or answer to a question with simply saying nothing for a period of time. The length of the silence should be long enough to make the other person uncomfortable, say 10-15 seconds.

Silence is a powerful tool in communication. Although a brief silence is not usually noticed, longer silences at important times can be very useful. Most people are uncomfortable in silence for any length of time. This is particularly true when you are unsure about the merits of what you have just said. You may find that someone who has given an inadequate answer or offer, in the face of silence, will feel the need to explain further, or acknowledge the poor offer. The tendency is to perceive the silence as a stalemate and try to get things going again.

If you ask a question and they provide an insufficient answer, you just remain quiet. Often, they will feel uncomfortable and elaborate.

Similarly, if a person makes an offer that is unreasonable, you can remain silent and see if that leads them to try to justify their offer or recognize that it is unacceptable and you both know it.

To use silence, make sure you keep silent, be committed to it, maintain some eye contact and perhaps use some body language that indicates you don't think the offer or answer is adequate.



2. PLACE ISSUES BEFORE RESOLUTIONS

There are many times in negotiation when one side might wish to bring the matter to a rapid conclusion. They feel that the sooner the matter is concluded, the less opportunity they will face to have to make concessions. For example, if you're coming to buy my car. And I am asking \$7,000 for it, we both pretty much know that during the course of the negotiation, I won't later bring my offer UP to \$9,000. I'm only going to be negotiated down from my asking price. Therefore, I might try and draw the negotiation to a fast end. This will prevent you from making a lot of your points. If I can get you to go directly to the price, I don't have to hear your arguments but can have you adjust from my starting point right now.

Therefore, you may need to suggest that the two sides place the issues before resolution. It involves suggesting that there are other things to discuss before you get around to discussing the positions. The purpose is to keep the negotiation open. With the negotiation open you can continue to make points, look for alternative positions, clarify the interests of both sides, etc.

To use the technique, you simply explicitly say "there are some issues I'd like to consider before we discuss the final price" or whatever you're negotiating about. This also is helpful for avoiding attempts to get you to state what you are willing to pay. You just say "well, before we get into that, there are some things we need to discuss first." You convey that you're not yet even willing to talk about that yet, and you avoid allowing them to bring the negotiation to a conclusion before you've made your points.

3. BROKEN RECORD

Broken record is a technique that is born of assertiveness training.

One assertiveness guru likes to say, "You lose because you give up to easily."

According to him, people only have so many "No"s in them, and by being persistent and not giving up after the first one, you will have much better success. We're trained to be "nice" and to listen to the poor garage mechanic who's just trying to make a living, and he probably has a ton of work, and so on. So, most people feel they can't just ignore the no, or keep on demanding what they want if he does not appear to be interested in helping them. But, the reality is, you can. But, where does it say that if he does a lousy job on your car that you should be the one to suffer?

One of the most important aspects of being verbally assertive, then, is to be persistent and to keep saying the same thing over and over again without getting irritated, angry, or loud.

Research on how people with a minority opinion can influence a majority's thinking says the same thing. You have to be confident, you have to say your message, and you have to repeat it again and again.

This technique is called the broken record technique, because like a record that skips, you're just going to repeat what you want over and over in a calm, but firm manner. There are two basic aspects of the technique: 1) first to say your point or request clearly and succinctly; and 2) repeat it again and again in a relaxed, firm tone.

Sometimes people fail to do step one, which is to tell the other side what you want them to do. Often, for example, when we complain about a product or service for example, we have in mind a remedy in mind. "This food was horrible, I want them to take this off the bill." But, when we complain, we just tell them what was wrong and not what you want done. Then they just apologize and offer you another one. You should say "I would like this taken off of the bill please."

Don't get caught up in too much talking when someone tells you "why" or gives a "reason" for not doing what you want. Just repeat your request or point. This is particularly relevant technique when the other party is not responding to what you're saying, that is, if they are ignoring your point or request.

Example: True story, I had gone to a fast food pizza place, and they accidentally gave me a supreme loaded with stuff I don't like and charged me for it. It seemed expensive, but I hadn't thought much of it at the time. When I got home I realized what had happened, so I went back to the pizza place, explained what happened, asked for the correct pizza and my money back. The woman there said no.

Customer: I'd like my money back please. It was 5 dollars extra that I was charged"
Employee: We can give you the pizza, but...I'm not sure about the money.
Customer: I'd like my 5 dollars please.
Employee: Well, how about some breadsticks?
Customer: I don't need any more food, I'd like my five dollars.
Employee: I can't do that. Only m manager can.
Customer: I understand. Please get the manager so I can get my 5 dollars back.
Manager: (after explanation) But, you see, you don't have a receipt.
Customer: You didn't give me a receipt, but I've returned the wrong pizza to you,
and I'd like the five dollars back.
Manager: Well we throw the receipts away (points to big bucket full). So, without a receipt, I can't refund any money. How about some bread sticks or salad, or a large drink.
Customer: No, I have plenty of food. I understand that it's a problem, but I didn't throw the receipt away, you did. So, I'd like my five dollars back.
Manager: Look sir, people behind you are waiting.
Customer: Yes, I'm waiting too. I understand that you want to serve them, but I want my five dollars back.
Manager: (annoyed) Tim, find the receipt in that pile and give him the money back.

Broken Record Exercise

Break into pairs.

Role 1

You just bought a microwave oven 2 weeks ago. You bought the particular model in a large appliance store because they offered a \$30 mail in rebate that gave you the best deal. The rebate was advertised right on the shelf next to the product. When you paid, they gave you a special slip to fill out and send in with a copy of the receipt and proof of purchase. However, you recently received a letter from the company saying that they could not give you the rebate as you did not have the model for which the rebate was actually being offered. It appeared to be the store's mistake, but, sorry, the manufacturer cannot refund the money.

You return to the appliance store and seek out the salesperson on the receipt. What do you ask for? Practice using the broken record technique to deal with the situation.

Role 2

You are a sales clerk in a large appliance store. A customer enters with a letter and a receipt. They tell you that you've sold them a Microwave offering a \$30 rebate. But, you were incorrect on the rebate according to the letter from the manufacturer. The rebate is offered on another model. Your job is to be as evasive as possible. Deny responsibility. Say there is no proof that they advertised such a rebate. Say that the store is closing. Say that there is nothing you can do. Suggest that the person is being unreasonable, and it could be the manufacturer's error and they should write to them. Say that your manager has to deal with this. Whatever you can to avoid responsibility and not give them what they want.

Ok, now reverse roles.

Role 1

You're taking a class with 2 major grades. One is the final exam and the other is a paper. You got a 4.0 on the test, and paper. You were justifiably pleased. You went skiing over Winter Break and returned to school a few days after classes have begun. However, when you check your grade report, you have a 2.5! Obviously, there is some mistake. Upon checking with the professor, it turns out he's recorded your paper grade as a 1.0 instead of a 4.0. You only have 2 days to get it changed according to the registrar. You'd like for him to correct his error!

What do you ask for? Use the broken record approach to deal with the situation.

Role 2

You're a professor at a major Midwestern university, not unlike, say MSU. You're very busy writing a grant due in 3 days. Your TAs have graded all of your papers and everything from your last class. However, a student enters and says you've recorded the wrong grade. You don't really have the time to find the TA, dig everything out, reexamine the records, etc. Your experience is that the students are usually the ones who are wrong.

Try and use excuses not to have to examine the grade. If the student is lying, they'll usually give up pretty fast. Tell them to wait a few days until the grant is written. Tell them that they should have come to you earlier about any mistakes. Tell them to talk to the TA, their student advisor. Tell them you have no way of knowing if they changed the grade on the paper. Tell them they should reexamine their paper to make sure they've read the grade right or the comments. Tell them anything to avoid having to waste your time with this!

4. DIRECT TACTFUL COUNTER TO DIRTY TRICKS

In negotiation settings, there are lots of tricks people can use. They are used mostly to make one party feel uncomfortable. For example, there is:

- Non-verbal behavior -- sighs, refusal to make eye contact, pencil tapping, etc.
- Threats and Insults -- you must be an idiot to ask for that...
- physical location -- make you feel uncomfortable and off balance by putting you in a low chair, with light in your eyes, having your back to an open door, etc.
- good cop/bad cop -- two people negotiate with you, one person attacks you and the other person acts as if they're on your side, and they're trying to help you and protect you from the other. They want you to bond with them and give in to them so they can help you.

There are usually 3 incorrect responses people make to this.

- First, people ignore it and hope
- Second they try to appease the person and give in a bit -- rewards bad behavior
- Fight fire with fire -- they make threats, you make threats

How can you deal with such behavior in a more useful fashion?

- 1) Tactfully address the behavior. You don't have to accuse them or get angry, but calmly point out their behavior. Most of the time, they expect you not to address it or realize it is happening. Addressing it can make them feel silly or petty.
- 2) State your desires and maintain your principles. Tell them what you would like for them to do. When possible, back it up with a principle.
 - Excuse me, is something wrong? You seem distracted. Perhaps we should do this another time.
 - I seem to be facing the sun here. Why don't we close the blinds a bit before we continue.
 - You seem to have suggested a very low price. I think we need to determine the price based upon fair and objective standards.

5. NEGOTIATION JIJITSU/FOGGING (To excess force or attacks)

Sometimes the opponent will launch an attack on you or your position. They'll point out your weaknesses and the weaknesses of your position. Your temptation might be to dig in and defend your position (e.g. get defensive) or to counterattack. If they push you, you may be tempted to push back.

However, this may lead you to fall back into positional bargaining. They lock into their position and attack, you defend yours and thus get more locked into it. Typically, their attack will come from: forcefully stating their opinion, attacking yours, and attacking you.

To deal with this, you can use the idea of "negotiation jujitsu" also called "fogging." Instead of pushing back, you sidestep their attack and deflect it on the problem. Instead of defending yourself, you agree but reframe the attack.

If they attack you with one of your weaknesses, you simply agree with the attack but reframe it into a positive. This prevents you from looking defensive, reinforces your confidence, and regains your momentum in the negotiation.

Smith, in the assertiveness literature, suggests that criticism is a major force for manipulation. He suggests not denying it, not counterattacking, and not getting defensive. Instead, you can agree with some truth in what they are saying, with the odds that what they are saying may be true, or with the principle in what they are saying.

- Negotiator 1 Come on, your company is puny! You've never handled an account this size! You're company could go under and we'd be stuck.
- Negotiator 2 It is true that you would be our biggest client. However, we have a great deal of experience with other good size accounts. Plus our size ensures that you'll know who you're dealing with, and you'll be our top priority. And by signing with us, you'd be helping to ensure our continued security.
- Buyer This car is old and has 30,000 miles on it! You must be stupid thinking you can get that kind of money for it.
- Seller Yes, the car does have some years and some miles on it, and I can see that it would be a concern. But, when you consider the fact that it is five years old and has only 30,000 miles on it, you can see that that's only 6,000 miles per year. Less than most used cars.

Notice in each example, the person does not disagree. In fact they agree to the attack but reframe it as an attack on the problem. Then they point out an associated strength.

Fogging/Jujitsu Exercise

Part I

The first thing to get used to is not getting upset when you're attacked. Realize in a negotiation, it's just to get you off balance. I'm going to throw out some attacks at you and I want you to just practice agreeing with them and pointing out a strength.

- You're pretty casually dressed for training aren't you?
- You don't know anything about negotiation!
- Now you're just being cheap, I didn't think you'd be stingy about this!

Part II

Now, practice turning an attack around into a strength. Imagine you work for an airline. Your company is in trouble, and you're trying to merge with another airline to keep it afloat. You and a committee had an emergency meeting and sketched out some initial ideas, and you are presenting them to the Board of Directors of the other airline. Here are some potential criticisms from them. What could you say to use Negotiation Jujitsu and turn these comments around?

1. Your proposal is totally unclear about the details.
2. Your company is another one of those "employee owned" failures. No wonder you're looking for a merger.
3. Don't you think you are wasting your time and ours coming here so early in the process?
4. Your proposal overlooks the fact that despite your new equipment, you have a horrible "on time" record. We pride ourselves in that. Maybe this is a bad fit.

Notice that it will be easier to use Jujitsu if you can anticipate the criticisms ahead of time then if you had to come up with them on the spot! Preparation is critical to negotiation!

Conclusion

To conclude this training in the beginning we discussed different negotiation philosophies. Most of the time people take a purely positional approach and end up with arbitrary and frustrating outcomes. The techniques here come from what has been called an Issue or Interest Based approach. This involves looking at negotiation as an opportunity for information exchange. It is a chance to learn about your opponent's interests and explain your interests to your opponent, and in the end look for win-win situations.

You've learned a number of strategies in this training that you can use during 1 on 1 negotiations.

You've learned 5 different Active Strategies:

- A. Attitudinal Bargaining
 - 1. Confidence
 - 2. Contained enthusiasm
- B. Appealing to opponents interests
 - 1. Determine what is beneath their position
 - 2. Use "why" and "why not" questions
 - 3. Appeal to their interests, not yours
- C. Contrast Effect
 - 1. Use objective standards or other offers, often from neutral source or party
 - 2. Avoid arbitrary positions
- D. Options for Mutual Gain
 - 1. Contingent options –interest depends upon some other thing happening to protect interests or sweeten deal for both
 - 2. Non-Contingent options – special qualities about you, your goods/services
- E. Compensatory Offers
 - 1. What else can be offered to meet interests often outside of main issue
 - 2. Useful when gone as far as you can on main issue, or limited control over outcomes

You've also learned 5 Reactive Strategies

- A. Silence
 - 1. When offer not even really worth considering or answer to a question inadequate
 - 2. Maintain silence long enough to make the person uncomfortable
- B. Issues Before Resolution
 - 1. When they try to draw negotiation to a conclusion by jumping to final resolution
 - 2. Keep negotiation open by suggesting that there are things to consider first
- C. Broken Record
 - 1. When they ignore what you are saying
 - 2. You state what you want clearly, and repeat it like a broken record
- D. Direct Tactful Counter to Dirty Tricks

1. When they are trying something to make you uncomfortable
 2. Tactfully, but directly, address their behavior to get back on track
- E. Negotiation Jujitsu/Fogging
1. When they attack you or your position, or bring up weaknesses
 2. You agree with the truth, the odds, or in principle and try to turn into a strength

In order for you to use these strategies effectively, you're going to have to prepare and practice, as with any skill. Remember, we talked about 2 track thinking. One track will be concerned with the strategies you must employ and the emotional tenor of the negotiation. You'll be thinking about what strategy to use, when, what they are doing, etc.

The other track of your thinking will be occupied with the conversation itself. To be really effective, you'll need to be able to appeal to their interests convincingly and smoothly. You'll need to be able to turn the weakness into a strength in a way that's not too much of a stretch and without getting upset, getting stuck, or babbling for a while. This takes preparation. You should be prepared by thinking things through ahead of time. Do the research for contrast effects. Determine your interests and theirs. Think of potential contingencies. Think of what you both could offer as compensatory options. The negotiation is the test, the preparation is the studying for the test. The better you study, the easier the test will seem.

Negotiation Preparation Activities

When preparing for a negotiation, or the negotiation simulation, based on what you have learned here, you will likely want to do the following:

- A. Consider your interests
 - 1. What are the issues that are important for you?
 - 2. Are there different ways your interests could be met? Think of options.
- B. Consider your opponent's interests
 - 1. In order to appeal to them, you must figure out their likely interests
 - 2. Consider how you will appeal to these interests. Which ones will you start with? Which will you hold in reserve at first to use later? You should practice stating your case so you can do so smoothly and effectively.
- C. Research
 - 1. You should gather information for contrast effects
 - 2. What other offers have you had?
 - 3. What are some objective standards you can use to set a reasonable position?
- D. Consider any weaknesses in your role. How will you deal with them if brought up during the negotiation?
- E. Consider options for mutual gain.
 - 1. What kind of options can you think of ahead of time?
 - 2. What kind of possibilities for contingent options might there be? What will the contingencies be?
 - 3. What special characteristics can you appeal to that are non-contingent?
- F. Set your goals.
 - 1. Set difficult, specific goals about what you would like to do or achieve. They should require considerable effort, but still be something you believe you can accomplish.
 - 2. You can set outcome goals about what outcome(s) you wish to attain. Again, be specific!
 - 3. You can set process goal, e.g. goals regarding the number of times you will use a strategy, how many strategies you will use, and/or a minimum time you will negotiate, a minimum number of interests you will put forth, etc.
 - 4. Consider obstacles to meeting your goals and how you will deal with them.
- G. Practice
 - 1. Alone or with a partner.
 - 2. Consider areas you think are weak and determine how you can improve them.
 - 3. Consider areas you think are strong and how you can improve them

APPENDIX C

FACTOR LOADINGS

Factor Loadings for First Factor Analysis – Pretraining State Measures

| | | | | | | |
|---------------------|-----|------|--|--|--|--|
| Invest Effort 1 | .79 | | | | | |
| Invest Effort 5 | .79 | | | | | |
| Invest Effort 4 | .78 | | | | | |
| Invest Effort 3 | .78 | | | | | |
| Desire 1 | .77 | | | | | |
| Desire 3 | .76 | | | | | |
| Invest Effort 2 | .76 | | | | | |
| Desire 6 | .72 | | | | | |
| Desire 2 | .72 | | | | | |
| Desire 5 | .68 | | | | | |
| Desire 4 | .68 | | | | | |
| Confidence 3 | .66 | | | | | |
| Mast. Orientation 2 | .65 | | | | | |
| Confidence 4 | .63 | | | | | |
| Mast. Orientation 4 | .62 | | | | | |
| Mast. Orientation 1 | .61 | | | | | |
| Confidence 5 | .61 | | | | | |
| Mast. Orientation 3 | .60 | | | | | |
| Confidence 6 | .52 | | | | | |
| Mast. Orientation 8 | .52 | | | | | |
| Mast. Orientation 5 | .50 | | | | | |
| Mast. Orientation 7 | .47 | | | | | |
| Mast. Orientation 6 | .42 | | | | | |
| Confidence 2 | .39 | | | | | |
| Anxiety 13 | | .80 | | | | |
| Anxiety 17 | | .77 | | | | |
| Anxiety 9 | | .77 | | | | |
| Anxiety 12 | | .76 | | | | |
| Anxiety 7 | | .71 | | | | |
| Anxiety 14 | | .70 | | | | |
| Anxiety 1 | | -.68 | | | | |
| Anxiety 3 | | .66 | | | | |
| Anxiety 6 | | .64 | | | | |
| Anxiety 4 | | .63 | | | | |
| Anxiety 2 | | -.58 | | | | |
| Anxiety 18 | | .49 | | | | |

| | | | | | | |
|---------------------|--|--|-----|-----|-----|-----|
| Opponent 2 | | | .74 | | | |
| Opponent 4 | | | .74 | | | |
| Opponent 3 | | | .66 | | | |
| Opponent 1 | | | .64 | | | |
| Personality 2 | | | .59 | | | |
| Ability 2 | | | .59 | | | |
| Ability 3 | | | .58 | | | |
| Ability 1 | | | .57 | | | |
| Personality 3 | | | .56 | | | |
| Ability 4 | | | .53 | | | |
| Personality 4 | | | .51 | | | |
| Personality 1 | | | .50 | | | |
| Anxiety 16 | | | | .70 | | |
| Anxiety 15 | | | | .67 | | |
| Anxiety 10 | | | | .64 | | |
| Anxiety 8 | | | | .58 | | |
| Anxiety 11 | | | | .57 | | |
| Anxiety 19 | | | | .56 | | |
| Anxiety 20 | | | | .54 | | |
| Anxiety 5 | | | | .53 | | |
| Strategy 2 | | | | | .75 | |
| Effort 3 | | | | | .66 | |
| Effort 2 | | | | | .66 | |
| Strategy 3 | | | | | .61 | |
| Effort 4 | | | | | .61 | |
| Strategy 4 | | | | | .55 | |
| Effort 1 | | | | | .54 | |
| Strategy 1 | | | | | .51 | |
| Perf. Orientation 4 | | | | | | .71 |
| Perf. Orientation 1 | | | | | | .66 |
| Perf. Orientation 3 | | | | | | .51 |
| Perf. Orientation 2 | | | | | | .50 |

Factor Loadings for Second Factor Analysis – Posttraining State Measures

| | | | | | | |
|---------------------|-----|------|-----|--|--|--|
| Invest Effort 5 | .84 | | | | | |
| Desire 2 | .84 | | | | | |
| Invest Effort 4 | .83 | | | | | |
| Desire 3 | .83 | | | | | |
| Invest Effort 3 | .81 | | | | | |
| Confidence 6 | .79 | | | | | |
| Desire 4 | .78 | | | | | |
| Desire 5 | .76 | | | | | |
| Desire 1 | .75 | | | | | |
| Desire6 | .75 | | | | | |
| Invest Effort 1 | .74 | | | | | |
| Invest Effort 2 | .72 | | | | | |
| Mast. Orientation 3 | .67 | | | | | |
| Confidence 5 | .67 | | | | | |
| Mast. Orientation 4 | .66 | | | | | |
| Confidence 4 | .63 | | | | | |
| Mast. Orientation 6 | .60 | | | | | |
| Confidence 3 | .59 | | | | | |
| Mast. Orientation 1 | .56 | | | | | |
| Mast. Orientation 2 | .53 | | | | | |
| Mast. Orientation 8 | .53 | | | | | |
| Mast. Orientation 5 | .43 | | | | | |
| Mast. Orientation 7 | .39 | | | | | |
| Anxiety 9 | | -.78 | | | | |
| Anxiety 17 | | -.77 | | | | |
| Anxiety 12 | | -.75 | | | | |
| Anxiety 7 | | -.75 | | | | |
| Anxiety 2 | | .74 | | | | |
| Anxiety 6 | | -.70 | | | | |
| Anxiety 14 | | -.69 | | | | |
| Anxiety 1 | | .68 | | | | |
| Anxiety 4 | | -.67 | | | | |
| Anxiety 13 | | -.67 | | | | |
| Anxiety 5 | | -.67 | | | | |
| Anxiety 18 | | -.65 | | | | |
| Anxiety 16 | | .64 | | | | |
| Anxiety 15 | | .63 | | | | |
| Anxiety 3 | | -.61 | | | | |
| Anxiety 10 | | .52 | | | | |
| Opponent 3 | | | .80 | | | |
| Opponent 2 | | | .79 | | | |
| Opponent 4 | | | .78 | | | |
| Opponent 1 | | | .73 | | | |
| Personality 1 | | | .69 | | | |

Factor Loadings for Second Factor Analysis – Posttraining State Measures (Cont'd)

| | | | | | | |
|---------------------|--|--|-----|-----|-----|-----|
| Personality 3 | | | .68 | | | |
| Personality 4 | | | .66 | | | |
| Personality 2 | | | .62 | | | |
| Ability 3 | | | .58 | | | |
| Ability 2 | | | .56 | | | |
| Ability 4 | | | .52 | | | |
| Ability 1 | | | .47 | | | |
| Strategy 3 | | | | .73 | | |
| Effort 2 | | | | .70 | | |
| Strategy 1 | | | | .68 | | |
| Effort 3 | | | | .65 | | |
| Effort 1 | | | | .64 | | |
| Effort 4 | | | | .63 | | |
| Strategy 4 | | | | .61 | | |
| Strategy 2 | | | | .54 | | |
| Anxiety 8 | | | | | .60 | |
| Anxiety 19 | | | | | .58 | |
| Anxiety 20 | | | | | .55 | |
| Anxiety 11 | | | | | .50 | |
| Perf. Orientation 1 | | | | | | .79 |
| Perf. Orientation 4 | | | | | | .71 |
| Perf. Orientation 2 | | | | | | .64 |

Factor Loadings For Third Factor Analysis – Trait Measures and Negotiator Perceptions Scales

| | | | | | |
|---------------------|------|-----|-----|------|--|
| Trait Anxiety 2 | .73 | | | | |
| Trait Anxiety 8 | .70 | | | | |
| Trait Anxiety 15 | .70 | | | | |
| Trait Anxiety 3 | -.68 | | | | |
| Trait Anxiety 20 | .66 | | | | |
| Trait Anxiety 12 | .64 | | | | |
| Trait Anxiety 13 | -.64 | | | | |
| Trait Anxiety 9 | .63 | | | | |
| Trait Anxiety 4 | .62 | | | | |
| Trait Anxiety 18 | .60 | | | | |
| Trait Anxiety 17 | .59 | | | | |
| Trait Anxiety 16 | -.59 | | | | |
| Trait Anxiety 11 | .58 | | | | |
| Trait Anxiety 1 | -.53 | | | | |
| Trait Anxiety 10 | -.53 | | | | |
| Trait Anxiety 5 | .53 | | | | |
| Trait Anxiety 6 | -.49 | | | | |
| Trait Anxiety 7 | -.47 | | | | |
| Trait Anxiety 14 | -.42 | | | | |
| Trait Anxiety 19 | -.38 | | | | |
| Perf. Orientation 4 | | .80 | | | |
| Perf. Orientation 1 | | .75 | | | |
| Perf. Orientation 6 | | .71 | | | |
| Perf. Orientation 3 | | .69 | | | |
| Perf. Orientation 2 | | .68 | | | |
| Perf. Orientation 5 | | .67 | | | |
| Perf. Orientation 8 | | .61 | | | |
| Mast. Orientation 6 | | | .82 | | |
| Mast. Orientation 7 | | | .78 | | |
| Mast. Orientation 4 | | | .76 | | |
| Mast. Orientation 1 | | | .71 | | |
| Mast. Orientation 5 | | | .68 | | |
| Mast. Orientation 3 | | | .61 | | |
| Mast. Orientation 2 | | | .51 | | |
| Mast. Orientation 8 | | | .50 | | |
| Negotiator 4 | | | | -.63 | |
| Negotiator 7 | | | | -.61 | |
| Negotiator 6 | | | | -.60 | |
| Negotiator 2 | | | | -.51 | |
| Negotiator 8 | | | | .49 | |
| Negotiator 3 | | | | .47 | |
| Negotiator 5 | | | | .42 | |
| Negotiator 1 | | | | .40 | |

Factor Loadings For Third Factor Analysis – Continued

| | | | | | |
|--------------------|--|--|--|--|------|
| Locus of Control 8 | | | | | .58 |
| Locus of Control 6 | | | | | .49 |
| Locus of Control 5 | | | | | .46 |
| Locus of Control 9 | | | | | .44 |
| Locus of Control 7 | | | | | -.43 |
| Locus of Control 1 | | | | | -.41 |

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