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Social Processes in Work Groups: A Model of the Effect of Involvement, Credibility, and Goal Linkage on Training Success

Catherine S. Clark
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To the Graduate Council:

I am submitting herewith a dissertation written by Catherine S. Clark entitled "Social Processes in Work Groups: A Model of the Effect of Involvement, Credibility, and Goal Linkage on Training Success." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Industrial and Organizational Psychology.

Gregory Dobbins, Major Professor

We have read this dissertation and recommend its acceptance:

Joyce Russell, John Lounsbury, Michael Rush

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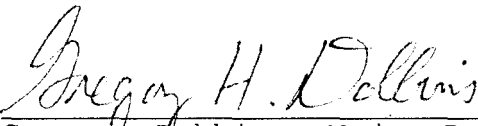
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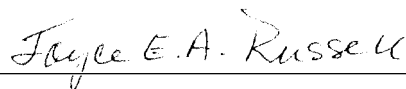
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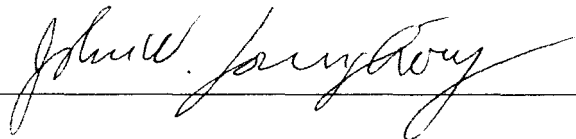
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Gregory Robbins, Major Professor


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and recommend its acceptance:







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Vice Provost
and Dean of The Graduate School

SOCIAL PROCESSES IN WORK GROUPS:
A MODEL OF THE EFFECT OF INVOLVEMENT, CREDIBILITY,
AND GOAL LINKAGE ON TRAINING SUCCESS

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

Catherine S. Clark

December 1990

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DEDICATION PAGE

This dissertation is fondly and gratefully dedicated to my family and friends, who supported me spiritually, emotionally and physically throughout my years in graduate school. My husband, Chuck, and my children, Suzanne and Meredith, put up with a wife and mother who was often preoccupied with studies.

My parents, Eleanora and "Q" Smith, were always ready with encouragement. Their support and example throughout my life gave me a model for perseverance and excellence that allowed me to continue until the work was completed. My in-laws, Leora and Charles Clark, generously opened their home to my children over the last summer so that I could work full time on writing.

Finally, I would like to thank the members of my prayer group, Dan and Pat Porzio, and Pat Laurer, as well as others, who prayed for me throughout, reminding me that "I can do all things through Christ who strengthens me."

ACKNOWLEDGEMENTS

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Special thanks also go to Dr. Tom Ladd, Mike O'Neal, and several other consultants in the UTCC User Services. Although Tom was not a member of my committee, he taught me what I know of LISREL, and helped me over the rough spots I encountered in programming and interpreting the results. I would also like to thank the organizations that allowed me to gather data from their employees. Finally, I would like to thank my husband, Chuck Clark, who spent literally days preparing spread sheets, figures and tables that went into feedback to participating organizations and also into the body of the dissertation itself.

ABSTRACT

The effect of social processes in the work group on training has not been systematically studied. A model is proposed that considers the influence of pre-training social processes and supervisor credibility on expected training utility, training motivation and learning.

Survey data were collected before and after training in organizations from a large southern metropolitan area. Social process variables include group goal linkage, expected supervisor and work group training transfer climates, and involvement in training decision. In addition, job involvement and supervisor credibility were assessed. Dependent variables included expected job and career utility of training, motivation to take training, and learning. Trainee subjects ($n = 245$) represented different kinds of organizations, types of training, and levels within the organizations.

LISREL analysis of the model suggested that social processes in a work group exerted an influence on learning new skills. For instance, involvement in the training decision increased the trainee's perception of job utility of training. Job utility was also predicted by the training transfer climate provided by the supervisor. In addition, supervisor credibility increased the perceived job utility of training. Finally, perceived job utility of training

predicted training motivation, which in turn, predicted training success.

The findings of this research suggest that organizations should increase trainees' involvement in the decision to be trained, train supervisors to provide support for training transfer, and encourage perceptions of supervisor credibility.

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CHAPTER I

INTRODUCTION

More organizations are recognizing the importance of training for the company's well-being. Training is conducted to increase the performance of the workforce and as a means of fulfilling its responsibility to its employees. Given the amount of resources that are spent annually on public and private sector training, there has been comparatively little research done in the field of training (Goldstein, 1986). The bulk of the research has been focused on discovering the best way to arrange the training content, the most effective training techniques, and the effect of various kinds of individual differences on learning. Often, this research is carried out in contexts far removed from situations that trainees will encounter in real organizations. Practitioners often ignore research carried out in laboratories, and often rely on their own intuition (or the marketing appeal of slick prepackaged training materials). A glance at the content of practitioner journals clearly indicates that training and development of employee resources are faddish. The lack of research articles and the preponderance of anecdotal testimonies (e. g., Gayeski, 1989; Geber, 1989; Ladd, 1989)

leads one to suspect that much of organizational training may also be ineffective.

More recent researchers have recognized that the trainee will not necessarily use the new skills and knowledge upon return to the work place (Baldwin & Ford, 1988; Noe, 1986.) Training transfer is indeed the real measure of training success. Training transfer must take place before any effect on the organization can be felt (Camp, Blanchard & Huszycz, 1986). Despite its crucial importance, little research has studied what creates a poor or good climate for training transfer.

One problem that has plagued training transfer climate research is the lack of a theoretical framework to unify the contextual and individual difference variables that have been proposed as factors in training transfer and training transfer climate. Noe (1986) proposes a number of motivational factors that affect learning and transfer, including reaction to the skill assessment feedback, career and job attitudes, and environmental favorability. Baldwin and Ford (1988) add the requirement of opportunity to use the training in the work environment. Neither of the above models acknowledges the influence of training decision involvement or specifies characteristics of the work group and their effect on the training and transfer process.

For this study, a model is developed which includes factors neglected by past research. These variables include training decision involvement, decision source credibility, and expected training transfer climate. In addition, the effect of the work group on the training transfer climate is specifically addressed. Although past research has studied these variables in a piecemeal fashion, little research has systematically studied their mutual or interactive effect on training. The present study is an initial step to integrate the effects of social process into a model of training transfer.

Model Overview

Even before beginning training, an employee may have expectations about how easily he or she will be able to use the new training on the job and whether the training will be useful to reach performance or career goals. These expectations might affect the motivation to take the training and to learn the course material. This motivation should affect the degree of training success achieved by the employee. Once the trainee returns to the work context, training success and the training transfer climate actually experienced determine how much of the training can be transferred. Whether the training had utility for the

employee depends on the consequences of using that training (see Figure 1).

The bulk of the previous literature on training transfer has focused on training content validity and the effect of various training methods on training transfer. (See Ford and Wroten, 1984, for a recent innovation in assessing training content validity, and Burke and Day, 1986, for a meta-analysis of managerial training techniques.) Models of training transfer have rarely specified the conditions that facilitate training transfer. In contrast, this study proposes several perceptual and situational variables as antecedents to training transfer. This model is different from previous models of training transfer for two reasons. First, it explicitly recognizes the importance of both formal and informal conditions that exist in the work group context. The characteristics of this work group context are captured by the construct of goal linkage (cooperative, independent, or competitive behavior between group members). Second, it recognizes that several factors contribute to the perception of utility. Third, it recognizes that the trainee's pre-training expectation of job and career utility of training is important to motivation to learn and later motivation to transfer. The antecedents to training transfer and training

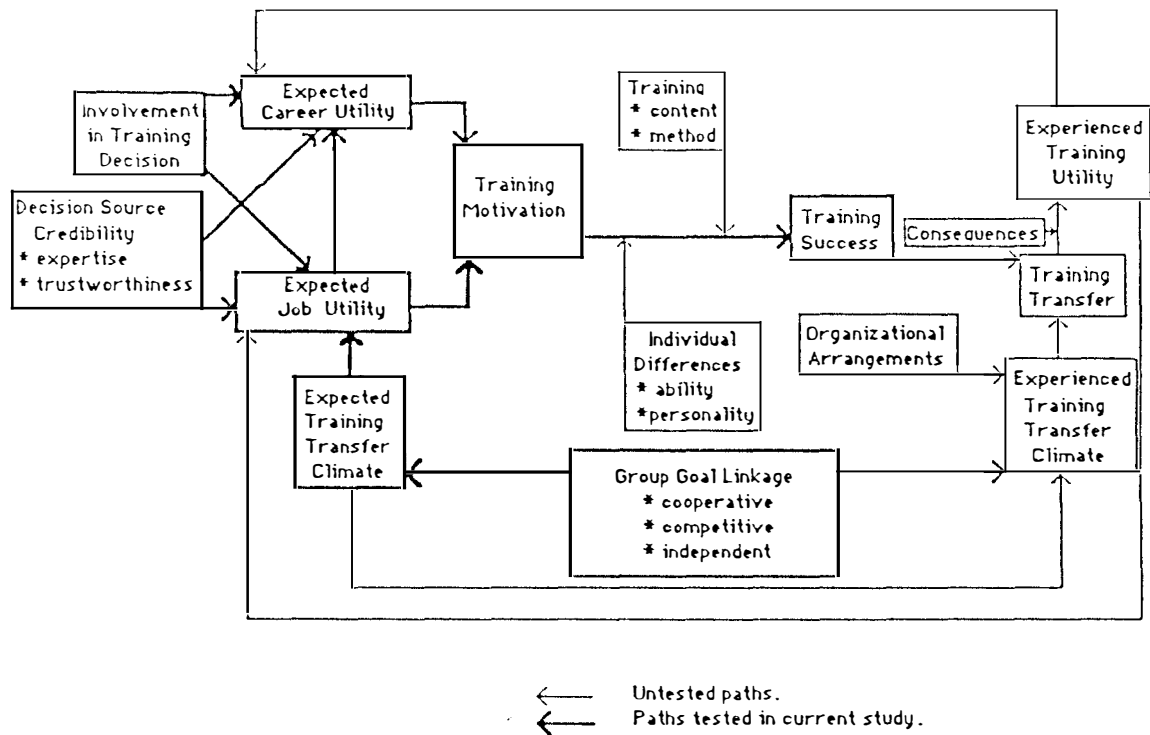


FIGURE 1. MODEL OF THE INFLUENCE OF SOCIAL PROCESSES OF THE WORK GROUP ON TRAINING TRANSFER CLIMATE, TRAINING TRANSFER AND TRAINING UTILITY.

utility are briefly defined below as the model relationships are outlined. Detailed rationale for each of the links are provided in Chapter II.

1. The model proposes that antecedents of expected training transfer climate are formal structural arrangements of the work group and informal social arrangements. Formal structural arrangements include the reward and task structures. Informal arrangements include dependence relationships between group members, quality of past interactions, and norms and attitudes towards working with each other. Together, the formal and informal characteristics of the work group combine to form a cooperative, competitive, or independent goal linkage. More detailed descriptions of these three goal linkage conditions and hypotheses of their effect on expected training transfer climate will follow in a later section.

2. Expected training utility combines career and job utility, and addresses the trainee's perception of whether the training will provide skills that will improve job performance or chances for career advancement. Career utility is the perceived usefulness of the training course to facilitate attainment of career goals, such as getting a raise or a promotion, or taking a more fulfilling job. Job utility is the perceived usefulness of the training course to facilitate goals associated with the current job, such as

increased productivity, reduced errors, or better problem solving skills.

Two antecedents of career and job utility are proposed: credibility of the source of the training decision and involvement in the training decision. Job utility is additionally affected by the expected training transfer climate. The credibility of the person who decides that the group member must attend training depends on the perceived expertise and trustworthiness of the source. The model proposes that expectations of training utility will be positively correlated with source credibility, involvement in the training decision, and favorable expected training transfer climate. More detailed descriptions of these antecedents and hypotheses of their effect on expected training utility will follow in a later section.

3. Training motivation depends on the trainee's job involvement and perception of how useful the course will be in attaining job and career goals.

4. Training success depends on motivation, individual ability, and training content and methods. Individual ability and training content and methods will not be measured. Instead, this study will look at the link between motivation and training success. Successful training can be demonstrated by favorable reactions to training, changes in attitude, and increases in knowledge/skill. (Generalization

of trained behaviors to the job, normally considered the acid test of training success, is considered separately under training transfer, below.)

5. Experienced training transfer climate is the support and constraints to using learned behavior/knowledge on the job. It depends on the goal linkage within the work group and organizational arrangements. Goal linkage has been discussed earlier and refers to cooperative, independent, or competitive goal linkage that occurs between the work group members. Organizational arrangements cover a variety of factors that act as constraints or supports for the new training. These include conditions originating outside the work group, such as resource availability and rewards for using training.

6. Training transfer occurs when knowledge and behaviors learned in training are generalized to the job. It depends both on the level of knowledge and skill gained in training and on the favorability of the experienced training transfer climate.

7. Experienced training utility occurs when training is instrumental in improving job performance or advancing career goals. It depends upon the level of training transfer and the consequences of exhibiting the trained behavior.

8. Both experienced training utility and training transfer climate are likely to feedback to expectations for utility and transfer climate. For instance, if the trainee encounters support from coworkers when experimenting with new behaviors, this is likely to reinforce or increase expectations of favorable training transfer climate for future training. If the trainee's attainment of future and current job goals are affected by the training, then expectations for career and job specific utility of future training is also likely to be affected.

In summary, this model of training transfer climate and training utility explicitly recognizes that group goal linkage affects expected and experienced training transfer climate. Expected career and job utility of training have a causal effect on motivation to take training and to learn. Motivation to learn is one of three factors important in training success, which is a prerequisite for training transfer and experienced training utility. Feedback loops are proposed to modify future expectations for training utility and transfer climate.

The purpose for this study is to test predictions from the first half of the model, and in doing so, begin the integration of social processes into training research.

CHAPTER II

LITERATURE REVIEW

This chapter reviews selected areas of the body of training and related research. Of particular interest is the research that pertains to social processes that go on within groups and between prospective trainees and their supervisors. Using variables that past research has suggested might be important, the training model outlined in the previous chapter is developed step by step. The following sections cover each variable in greater detail, supporting each link with previous research or theoretical arguments. In the process, hypotheses are proposed for those links that will be tested.

Expected Training Utility

Training utility may be defined as the relevance of the training content to current and future job demands. It includes components of training content (job relatedness to current or future jobs) and training difficulty (appropriateness to employee's current skill level). The model conceptualizes training utility as two kinds of utility: job utility and career utility. Job training

utility refers to expectations that the training will be useful for the current job. Career utility refers to expectations that the training will be useful to attain or succeed in a foreseeable job. A training course may also have utility if it addresses personal interests, despite having little relationship to a trainee's current or foreseeable job. However, for the purposes of this study, only training utility related to current or foreseeable jobs will be considered.

The model proposes that three factors contribute to expected training utility: involvement with training decision, training decision source credibility, and expected training transfer climate. However, expected training transfer climate is proposed to affect only job utility. Job utility of training, is then expected to affect career utility.

The next section deals with the effect that employee involvement in the decision to be trained might have on the expected utility of the training.

Involvement in Decision To Be Trained

In general, researchers accept that volunteers are more committed to their decisions, and as a result, are more motivated to succeed than non-volunteers (Kiesler, 1971; Salancik, 1977). The degree of involvement in the training

decision may vary widely between and within organizations. Involvement may include deciding whether to take any training, choosing one course over another, or choosing a time to take the training. Individual or group decisions are also options. Group decisions may be advantageous to allow work and training schedules that minimize disruption of group productivity. The subordinate may also be given some choice in when training is taken and helped to set goals for training completion.

Two studies have examined the relationship between participation in training decision and training outcome. Hicks and Klimoski (1987) manipulated participation in training decision for a management training program. Results suggested that voluntary rather than required participation in training was associated with stronger belief that the course was appropriate, more commitment to the decision to be trained, higher motivation to learn, more satisfaction with training, higher self report of learning, and higher scores on an achievement test. In the second study, Ryman and Biersner (1975) found that choice in training decision is positively related to training success and negatively related to voluntary decision to withdraw from training. The effects reported in these two studies may have occurred because voluntary training resulted in higher perceived utility for job or career goals.

Given that involvement is associated with higher commitment than noninvolvement (Anthony, 1978; Coch & French), individuals are likely to view training decisions favorably if they participated in the decision. The model proposes that involvement in the training decision should result in higher expected training utility. The following hypothesis is proposed.

H.1a. Higher levels of perceived training decision involvement will be associated with higher expected job utility.

H.1b. Higher levels of perceived training decision involvement will be associated with higher expected career utility.

Training Decision Source Credibility

The credibility of the training decision source may well have a bearing on the expected training utility. Ilgen, Fisher and Taylor (1979) proposed that credibility of the decision source is seen as being made of two components: expertise and trustworthiness. These two factors are critical to acceptance of feedback. A perception of expertise occurs when an individual believes that another person has knowledge of the job requirements, competence of the individual, and training content. Knowledge of career paths in the organization may also be a factor. A

perception of trustworthiness occurs when an individual believes that another person is characteristically honest, open, and fair when dealing with the individual.

Throughout the following sections on expertise and trustworthiness, performance appraisal feedback research is cited. This body of research is used to support the idea that training decision source credibility is important to an individual's perception of training course utility.

Expertise

Training taken as a result of an expert source's decision may be viewed as having utility for the prospective trainee because it is based on a knowledge of the job requirements and the individual's abilities and desires. Sometimes the decision to give training is made at the corporate or departmental level. Blanket decisions that everyone must receive the same training may not be viewed as being based upon high levels of expertise, because the trainee may believe that the information base is insufficient. However, decisions that originate close to the employee may be seen as being based on knowledge of particular job demands and actual job performance, as well as knowledge of the individual's career goals. (Perceived expertise of the source, not which source influences the decision, is the issue here. The influence of source, or

involvement in the training decision, has already been covered in the previous section.)

Expertise is gained through job knowledge, opportunity to observe a representative sample of the job performance, and knowledge of the individual's goals. Several examples of performance appraisal research suggests that opportunity to observe performance is especially important in an individuals' willingness to accept and respond to feedback. For example, Tuckman and Oliver (1968) report that teachers were more likely to show improved performance in response to feedback from their students than from supervisors. The researchers proposed that performance improved because the teachers accepted students' feedback due to their greater opportunity to observe the teachers' classroom performance. Greenberg (1986) surveyed middle managers and found that one of the factors affecting perceptions of performance appraisal fairness was the rater's familiarity with the ratee's work. Similar findings by Ilgen and Barnes-Farrell (1984) and Landy, Barnes, and Murphy (1978) further support the importance of opportunity to observe as an important factor in feedback acceptance.

Few comparisons have been made of the expertise of various sources who make training decisions. However, there is some indirect evidence that expertise may have an effect on the perceived utility of training courses. In two

studies mentioned earlier (Hicks & Klimoski, 1987; Ryman & Biersner, 1975), voluntary participation in training programs resulted in positive outcomes. A possible interpretation of these results may be that the trainee viewed him or herself as having more expertise than the organization concerning training needs.

There seems to be ample support for acceptance of job performance feedback from well informed sources. In addition, leadership research suggests that expertise in technical and organizational knowledge is associated with increased acceptance of suggestions to improve performance (Katz & Kahn, 1978). Student (1968) found that employee response to supervisors who used expert power resulted in higher quality and reduced cost performance. Similar patterns of acceptance of feedback and suggestions from expert sources are also likely to influence the training process. The model proposes that training decision source expertise results in higher expected training utility. Expert sources are likely to be viewed as knowing what training would be useful for an individual to meet job and career goals. This leads to the second hypothesis.

H.2a. High expertise sources of training decisions will be positively correlated with expected job utility of training.

H.2b. High expertise sources of training decisions will be positively correlated with expected career utility of training.

Trustworthiness

In addition to feedback source expertise, trust in the intentions of the source are thought to be important to credibility (Ilgen et al., 1979). When a source is viewed as being characteristically honest, open, and fair with the individual, he or she is likely to be seen as being trustworthy. Again, the performance appraisal literature offers insights into the importance of trustworthiness of the source of feedback. If an individual feels that the rater has ulterior motives for giving a low rating, trust in the rater is low (Dobbins, Platz, & Cardy, in press). Distrust in the accuracy of ratings may be justified. Interviews with executives giving performance appraisals illustrates that ratings often are purposely distorted (Longenecker, 1987).

Trustworthiness seems to be one of the conditions needed to build willingness to act on information about skill deficiencies. As an example where trust was lacking in the motives of the source giving feedback, Hogan, Fisher, and Morrison (1974) report that players in the Prisoner's Dilemma game refused to respond to performance feedback

given by competitive opponents, but did respond to cooperative opponents.

An employee may suspect the motives of someone who sends them to training, particularly when the employee does not agree with feedback that they need training. The model proposes that the trust in the source of training will affect job and career utility. To the extent that the employee does not trust the motives behind a decision that they must take training, belief that the training will have job or career utility will be low. The employee must be confident that the decision is based on concern for the employee's future, not ulterior motives on the part of the decision maker.

Hypotheses 3a and b are based on the rational that in order for the training course to be seen as having job or career utility, the employee must be convinced that the decision source is trustworthy.

H.3a. Trust in the source of the training decision will be positively correlated with greater expected job utility of training.

H.3b. Trust in the source of the training decision will be positively correlated with greater expected career utility of training.

A brief summary of what has been proposed so far may be useful at this point. First, it is proposed that employee

perceptions of expected training utility include the usefulness of the training for attaining desired career and job goals. Second, involvement in the training decision will increase expected training utility by allowing choice of more goal-related courses. Third, the expected utility of the training course may depend on the perception that the decision source has taken the individuals' needs and desires for training into account. A credible source would be perceived as having expertise and being trustworthy. Expertise increases with job knowledge and ample opportunity to observe the job performance. These would allow the source to assess training needs accurately. Trust in the feedback source is developed during an extended relationship in which cooperative motives are perceived.

The final factor, expected training transfer climate, directly affects only job utility of training. It is covered in the next section. First training transfer climate will be defined, and then the concept of goal linkage is developed as a factor in training transfer climate.

Expected Training Transfer Climate

Training transfer climate may be defined as the support or constraints to generalization of trained behavior at the work site (Baldwin & Ford, 1988). One of the factors that

determines whether an employee expects a training course to be useful may be whether he/she expects to be helped or constrained from using the training upon return to the job. Organizational arrangements of physical and financial resources to use the training are obviously helpful, if not necessary for training transfer. However, of more interest to this study is the effect of the interdependence between work group members. The concept of goal linkage is used to summarize three sets of beliefs about the formal and informal interdependence between work group members. Goal linkage originates in the nature of the task and reward interdependence and is expressed in the attitudes, values, and interaction norms of the group members. Each type of goal linkage is hypothesized to have differing effects on the nature of the expected training transfer climate. Goal linkage is a rather "fuzzy" concept. Therefore, before addressing goal linkage itself, a reasonably detailed discussion of task and reward interdependence will be presented. This will be followed by a discussion of the three kinds of perceived goal linkages that result. This section will conclude with hypotheses about the effects of goal linkage on expected training transfer climate.

Task Interdependence/Workflow

Research has demonstrated that the character of the interactions between individuals in a work group is affected

by the type of interdependence between them. Task interdependence is created by a task design that requires one of four workflow patterns. Workflow is an exchange of materials, information, and service between coworkers.

Workflow can be defined by the pattern of the flow of services, materials, and information through a work group (Thompson, 1967, p 54-65; Van De Ven, Delbecq, & Koenig, Jr., 1976). Workflow patterns have been categorized as independent, sequential, reciprocal, and team (Van De Ven et al., 1976). Figures two through five present graphic representations of these workflow patterns.

Independent workflow is characterized by services, materials, and information entering and leaving the work group, with the final work product being the work of one person. No interaction with other work group members is required. The work of bank tellers is an example of independent workflow.

Sequential workflow is characterized by services, materials and information entering and leaving the work group, with a series of additions made to the work product by each worker in succession. The unfinished product travels through the work group in one direction only. Assembly lines are the classic example of sequential workflow.

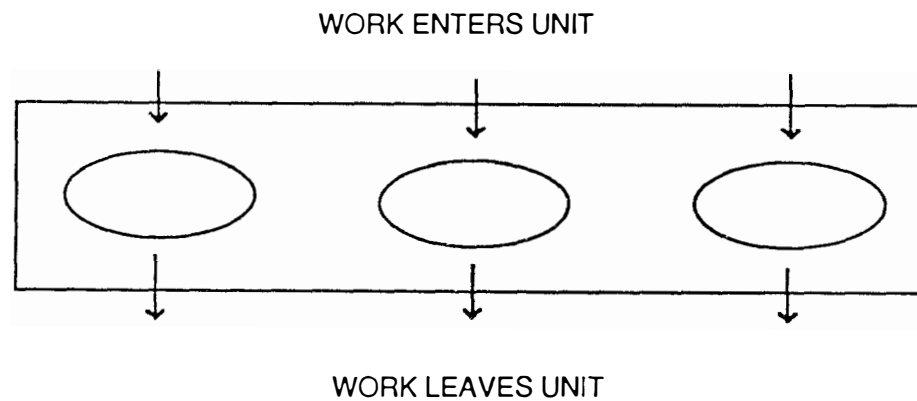


FIGURE 2. INDEPENDENT WORK FLOW.

From "Determinants of Coordination Models Within Organizations" by A. H. Van De Ven, A. L. Delbecq and R. Koenig, Jr., 1976, American Sociological Review, 41, pp. 334, 335.

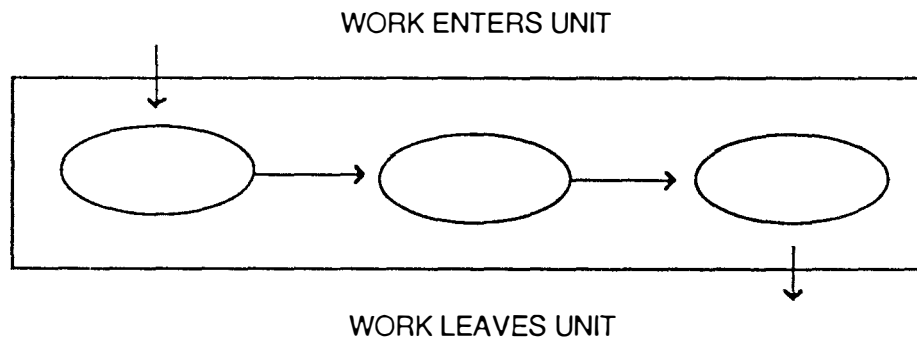


FIGURE 3. SEQUENTIAL WORK FLOW.

From "Determinants of Coordination Models Within Organizations" by A. H. Van De Ven, A. L. Delbecq and R. Koenig, Jr., 1976, American Sociological Review, 41, pp. 334, 335.

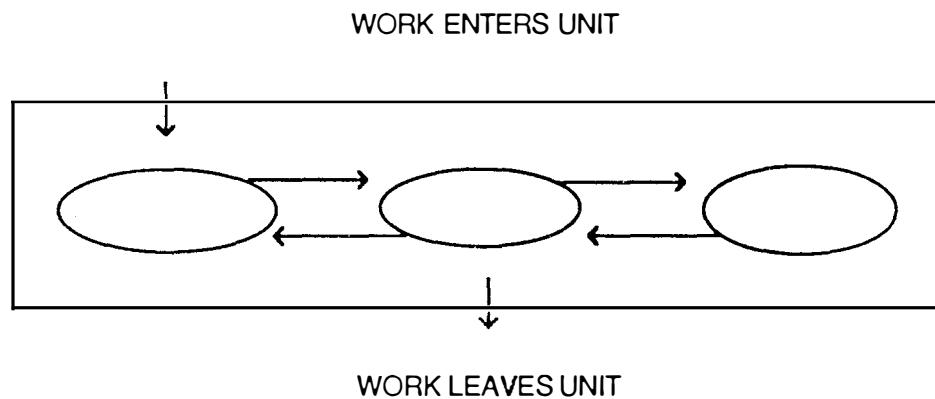


FIGURE 4. RECIPROCAL WORK FLOW.

From "Determinants of Coordination Models Within Organizations" by A. H. Van De Ven, A. L. Delbecq and R. Koenig, Jr., 1976, American Sociological Review, 41, pp. 334, 335.

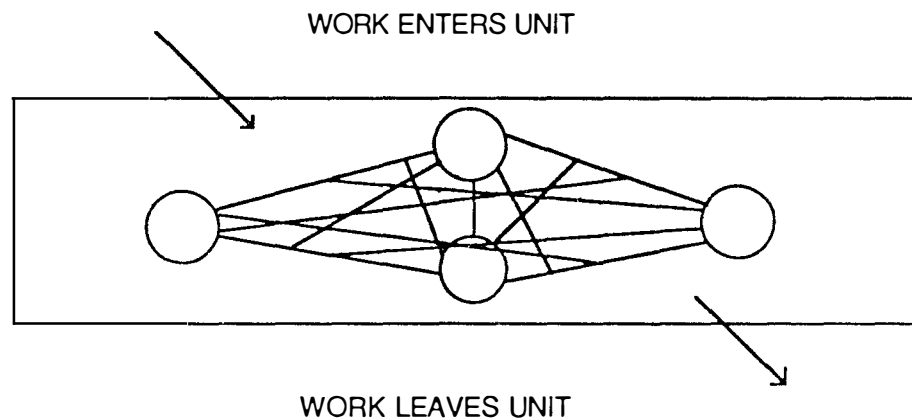


FIGURE 5. TEAM WORK FLOW.

From "Determinants of Coordination Models Within Organizations" by A. H. Van De Ven, A. L. Delbecq and R. Koenig, Jr., 1976, American Sociological Review, 41, pp. 334, 335.

Reciprocal workflow is characterized by an exchange of services, materials, and information among work group members to provide a final work product. The unfinished work may be passed back and forth between members several times before finally passing out of the work group area. Research papers that are the product of several authors are often an example of reciprocal workflow.

Team workflow is characterized by work being done jointly by work group members. Problem diagnosis, problem solving, or collaboration occurs when the group meets together, with the group dealing with the work all at the same time rather than individually, sequentially, or reciprocally. Sports events and surgical operations are examples of team workflow.

Reward Interdependence

The nature of the workflow limits the kinds of reward structures that are feasible for the group. The more complex the workflow, the more difficult it is to separate each individual's contribution to the group effort. Thus independent workflow is likely to be rewarded on the basis of individual productivity, while team workflow is more likely to be rewarded for total team productivity. Performance appraisal criteria and reward structures signal to work group members what kinds of behaviors will result in favorable outcomes. Ample support exists to demonstrate that

helping behavior increases for group based rewards and decreases for individual and competitively based rewards (Johnson & Johnson, 1978).

Deutsch (1949) proposed one of the first theories of the effects of cooperation and competition on small group functioning. According to Deutsch, promotive interdependence (cooperation) occurs when one member of the group attains a goal only if all other members of the group attain theirs. Helping other members makes goal attainment more likely for all. Hindering other members makes goal attainment less likely for all. Conversely, contriently interdependence (competition) occurs if one member's goal attainment prevents any other members from attaining it. Helping other members attain the goal makes it less likely that the individual will attain the goal. Hindering other's goal attainment will make the individual's goal attainment more likely.

Deutsch established a series of testable hypotheses regarding motivation, communication, group productivity, and interpersonal relations with other members. These have been the seed of much of the social psychology body of research on interdependence carried out since then. Of particular interest to this investigation are the hypotheses related to helping/hindering behaviors in competitive and cooperative goal situations. Deutsch proposed that helping behaviors

are seen as goal promotive in cooperative goal situations, while hindering behaviors are seen as goal promotive in competitive goal situations. Generally, research seems to support these hypotheses (Johnson, Maruyama, Johanson, Nelson, & Skon, 1981)

Deutsch's theory and hypotheses provided the framework for categorizing the goal linkage that develops in a group. This construct is developed in the next section.

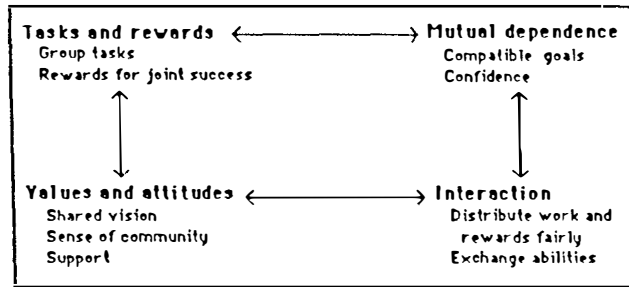
Perceived Goal Linkage

Goal Linkage Theory (Tjosvold, 1984, 1986a, 1986b) explains the effect of different perceptions of task interdependence and reward structure on the behavior of individuals in organizations. These perceptions are based on both formal and informal factors. Formal structural arrangements are a product of task design and the reward system. Workflow patterns allow group members an opportunity to affect the goal attainment of others in the group through helping or hindering behavior. Reward structure serves as a cue for whether helping, hindering, or independent behavior is most likely to result in goal attainment for an individual in the work group. The task and reward characteristics of the work group situation tend to encourage some behaviors, attitudes, and values, and discourage others. These values and attitudes, mutual dependence, and past interactions characterize the informal

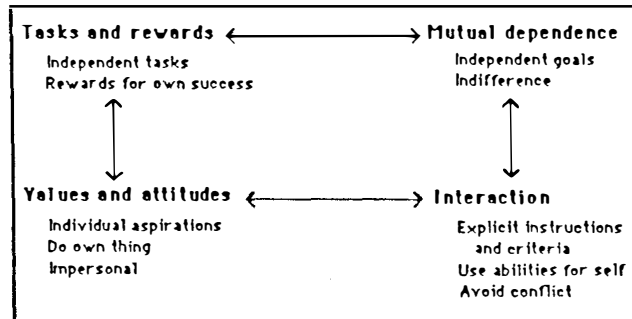
social arrangements. These formal and informal factors influence each other and result in three possible perceptions of goal linkage between work group members: cooperative goal linkage, independent goal linkage, and competitive goal linkage (see Figure 6).

Cooperative Goal Linkage is associated with formal structural arrangements that are based on group tasks and rewards for joint success. Informal social arrangements are characterized by perceptions of shared vision, a sense of community, support norms, compatible goals, and confidence and trust in coworkers. This results in expectations that work and rewards will be distributed fairly, abilities will be exchanged, and that conflict will be dealt with productively (see Figure 6a).

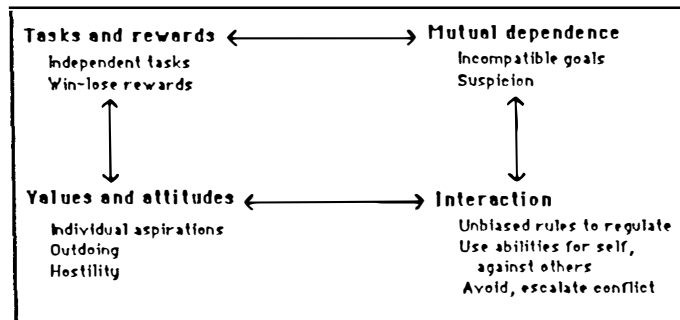
Independent Goal Linkage is associated with formal structural arrangements that are based on independent tasks and rewards for individual success. Informal social arrangements are characterized by perceptions of individual goals, impersonal dealings with coworkers, and indifference to coworker goals. This results in expectations of explicit instructions and criteria for performance, using abilities for one's own benefit, and an avoidance of conflict (see Figure 6b).



a Cooperative Goal Linkage



b Independent Goal Linkage



c Competitive Goal Linkage

FIGURE 6 COOPERATIVE, INDEPENDENT AND COMPETITIVE GOAL LINKAGE.

From "The Dynamics of Interdependence in Organizations" by D. Tjosvold, 1986, Human Relations, 6, pp. 527, 528.

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Competitive Goal Linkage is associated with formal structural arrangements based on independent tasks and win-lose rewards. Informal social arrangements are characterized by perceptions of individual goals, and norms of hostility and outdoing one another, suspicion about the motives of others, and incompatible goals. This results in a desire for formal rules to regulate work and rewards, using abilities for one's own benefit and against others, and either an escalation or avoidance of conflict (see Figure 6c).

Dean Tjosvold and his associates have done extensive work on goal linkage theory and have explored the usefulness of the theory to explain behavior in organizations (Tjosvold, Andrews & Jones, 1983; Tjosvold 1984, 1986a, 1986b, 1988). Cooperative goal situations were associated with positive feelings about past and future success, sharing resources, low embarrassment, improved relationships with peers and supervisors, collaboration between departments and higher productivity (when compared with competitive goal situations.) Independent goal situations had conditions similar to competitive goal situations, except with lower levels of embarrassment and hostility (Tjosvold 1986, 1988). These results support previous research on the relative effectiveness of a variety of goal structures. A meta analysis of 122 studies found that

cooperative goal structures were more effective than either competitive or individual goals, and that there was no significant difference between independent and competitive goal structures (Johnson, Maruyama, Johnson, Nelson & Skon, 1981).

Expected training transfer climate may be affected by goal linkage. Work situations are likely to favor transfer of training when coworkers are willing to share knowledge and help recent trainees. A more detailed discussion of the effect of goal linkage on training transfer climate follows.

Effect of Goal Linkage on Expected Training Transfer Climate

Training transfer climate can provide support or constraints to the generalization of trained behavior at the work site (Baldwin & Ford, 1988). Its antecedents have not been systematically studied. However, training research literature does show a few examples of studies examining the theoretical or empirical relationship of training transfer climate to learning. There is wide speculation that environmental favorability (Baldwin & Ford, 1988; Goldstein, 1986; Noe, 1986) affects training transfer. The Noe model speculates that environmental favorability influences motivation to learn, retention, and motivation to transfer training. These, in turn, influence the generalization and maintenance of trained behavior actually acquired by the trainee. Although Noe emphasized the importance of

environmental favorability for training outcomes, the Noe and Schmitt (1986) empirical study of his training motivation model did not include a test of the effect of environmental favorability. Similarly, the Baldwin and Ford (1988) training transfer model has not been specifically tested.

The climate for training transfer is thought to be closely related to the same conditions that affect organizational learning climate (Goldstein, 1986). Support or constraints may come from supervisors and peers. In addition, the opportunity to use the training must be present before it can be exhibited (Baldwin & Ford, 1988). The practitioner literature has emphasized the importance of positive transfer climate (Allen, 1987; Allen & Silverzweig, 1976; Bahn, 1973; Sims Jr., & Manz, 1982).

Baumgartel and Jeanpierre (1972) studied the transfer of technical training for Indian managers after they returned to their home office. Climate factors associated with positive training transfer were organizational approval of innovation and training content, expressed encouragement from the organization for the managers to use their technical training, and open communication among managers. These effects were particularly apparent for lower level managers who might not have had status to overcome

resistance to the technological innovations taught in the management classes.

Much of the literature has focused on negative rather than positive training and transfer climates (Bahn, 1973; Salinger, 1973). For instance, Salinger lists 10 disincentives to effective employee training and development. These include macro issues of top management's lack of understanding and involvement in defining the objectives of training, reward systems that do not reward managers who effectively train/develop subordinates, and lack of budgetary support for systematic training. Training is often carried out on a hit or miss basis, with little thought as to whether training advances organizational goals. This signals to managers and supervisors that subordinate training and development is not really an important part of their jobs.

In addition, the more micro factors of the training/transfer climate encountered at the work group level are biased against employee development. Employees may find that workload is not adjusted during and after training, notice of required training is received too late to effectively plan work schedules, limited coaching in new skills is available, and attempts to use new skills are met with impatience. In addition, the course content often bears no resemblance to what is actually needed in the work

place, and may even promote work methods that are counterproductive to work procedures currently in use. This is the result of little management involvement in the needs analysis, if one was in fact carried out.

It has long been recognized that group norms and attitudes play a big part in socializing and controlling behavior of members (Cartwright & Zander, 1968; Festinger, Schachter & Back, 1968). More recently, it has been recognized that group norms play an important part in increasing or decreasing training transfer to job site behavior (Allen, 1987; Allen & Silverzweig, 1976). Norms signal to recent trainees what parts of training are accepted by the work group as the way things are "really done." When work group norms coincide with training procedures, skilled members serve as models for the trainee, thus reinforcing the new behaviors. Supervisors may also play a part in the modeling and coaching process (Byham, Adams & Kiggins, 1976; Sims Jr & Manz, 1982). Discussion of supervisors' expectations before and after training, goal setting sessions, and other indications of supervisor support for training transfer have been shown to be effective in increasing generalization of new behavior (Ehrenberg, 1983; Marx, 1982; Michalak, 1981; Reber & Wallin, 1984; Wexley & Baldwin, 1986). Thus, both

intentional and unintentional actions on the part of the supervisor and group members shape the trainee's behavior.

Coworker and supervisor resistance to training may be a real challenge to training transfer. One author has suggested that in some circumstances, counter-training is a problem that actually nullifies efforts to introduce new behaviors in the work place (Bahn, 1973). Countertraining is defined as an informal force that "involves molding of knowledge, skills and attitudes related to the job that are contradictory to those taught in formal company training" (Bahn 1973, p. 1069). Bahn suggests that one powerful underlying reason that countertraining may occur is resistance arising from the existence of formal and informal rewards for habitual behavior patterns. For instance, company orientation training may emphasize teamwork, but reward structures may be perceived as rewarding competitive behavior. Employees may refuse to assist trainees, and may even go so far as to sabotage trainee efforts to reach performance and career goals.

Goal linkage theory, discussed earlier, provides a theoretical framework for explaining many of the factors involved in supervisor and peer support for training transfer. Perceived goal linkage is likely to have a strong effect on the training transfer climate of a work group via the structure of reward contingencies and the associated

valence of helping behavior toward other work group members. In cooperative goal linkage, a group member could view helping behavior (i.e., assuming part of the workload during and after training, answering questions about new skills/knowledge, coaching early attempts to use training, etc.) to be instrumental to his/her reward attainment. Competitive goal linkage would be predicted to lead to hindering behaviors in order to maximize goal attainment. The effect of an independent goal linkage will be more similar to competitive reward structure.

To date, supervisor support for training transfer has been more extensively studied than work group support (e.g., Bahn, 1973, Baumgartel & Jeanpierre, 1972; Salinger, 1973; Sims, Jr & Manz, 1982). This is perhaps appropriate where work group tasks are principally independent of each other. However, as the group tasks become more and more interdependent (as in reciprocal and team workflow), it is important to consider the effect of work team behavior on training transfer. Hence the focus of this research will be on identifying work group rather than supervisor support for training transfer.

Goal Linkage Theory makes several predictions about the conditions under which helping behaviors might be exhibited by work group members. Cooperative goal linkage should be associated with expectations of helping behaviors rather

than hindering behaviors from other team members. Competitive goal linkage will be associated with expectations of few helping behaviors and more hindering behaviors from other team members. Independent goal linkage, of itself, should neither encourage nor discourage helping behaviors. However, heavy workloads will discourage knowledge sharing and helping behavior (since it interferes with assigned duties), so the net effect will be to discourage sharing and helping behaviors. Therefore, independent goal linkage will also be associated with expectations of fewer helping behaviors from other team members. The hypotheses that follow are based on these predictions about behaviors likely to be associated with training transfer climate.

H.4 Cooperative goal linkage will be positively associated with expected training transfer climate.

H.5 Competitive goal linkage will be negatively associated with expected training transfer climate.

H.6 Independent goal linkage will be negatively associated with expected training transfer climate.

Effect of Expected Training Transfer Climate on
Expected Job Utility of Training

The model being proposed suggests that the third factor in expected job training utility is the employee's expectations of favorable or unfavorable training transfer climate. The work group member may believe that there will be support from peers when they attempt to generalize the training to the job. On the other hand, work group members may believe that no one will be willing to help them or be receptive to initial experiments in using the training on the job. Some training (especially interpersonal training) requires cooperation with other people in order to make effective generalization possible. If the trainee believes that there will be no opportunity to use the training because other work group members resist its use, their training may not be seen as having job utility. However, if the training transfer climate is seen as conducive to using the training, then training should result in a high job utility.

H.7 Expected training climate will be positively correlated with expected job utility of training.

Effect of Expected Job Utility of Training on Expected
Career Utility of Training

Expected career utility of training is the extent to which one believes that completing training will affect career-oriented goals. The model proposes that trainees are likely to reason that job training will lead to improved performance and subsequent management recognition, which will then result in higher salary, promotion, more interesting job assignments, or job prospects as a result of attainment of skills valued on the job market. Thus, job utility of training should be a predictor of career training utility.

H. 8 Expected job utility of training
will be positively correlated with high expected
career utility of training.

Training Motivation

The relationship of training motivation to the learning process has been viewed in a VIE framework (Noe, 1986). If training is seen as facilitating job and career goal attainment, this should lead to motivation to be trained and to learn, assuming work-related goals have a high valence for the individual. Little empirical research has been reported that studies training motivation. Noe and

Schmitt (1986) tested a model of training motivation but found little evidence of a relationship between either job involvement or career planning and pre-training motivation. The link between pre-training motivation and learning was also unsupported.

Although existing research does not support the link between training motivation and either job involvement or career awareness (Noe & Schmitt, 1986), it seems inescapable that something must motivate the willingness to be trained and to learn. If a trainee thinks that a particular training course will advance personal/career goals, then the trainee should have greater motivation to be trained and to learn.

The following hypotheses are proposed to capture the effect of training utility on the individual's motivation to be trained and to learn. Note that motivation to be trained and to learn is combined under the construct of training motivation.

H.9a High expected job utility of training will be positively correlated with training motivation.

H.9b High expected career utility of training will be positively correlated with training motivation.

Training Success

Training success is demonstrated by favorable trainee reactions to the training, changes in attitude congruent with course objectives, and increases in knowledge or skill. These are generally measured by post-training surveys, tests, and job simulations. Training transfer (using the trained knowledge and skills at the work site) is the acid test of training success. However, for the purposes of this study, generalization of the training to the work site will be covered later, since it is affected by a different set of factors.

This model agrees with previous research and theoretical models (e. g., Baldwin & Ford, 1988; Goldstein, 1986; Noe, 1986; Wexley & Latham, 1981) that view training success as a function of three factors:

(1) trainee motivation to take training and to learn; (2) individual differences (ability, personality); and (3) the training itself (content, presentation methods, principles of learning, sequencing, and reaction to trainer). The antecedents to training motivation were covered in the last section. The last two factors (individual differences and the training itself) have been extensively researched. Since they are not the focus of this study, the interested

reader is directed to several recent reviews and texts on the topic of training. In particular, Baldwin and Ford (1988), Burke and Day (1986), Goldstein and Gessner (1988), and Latham (1988) are helpful.

This study will explore the link between training motivation and training success. Past empirical research has had mixed success in finding a relationship between training motivation and training success. Noe and Schmitt (1986) tested a model that proposed a sequential relationship between training utility, training motivation, and training success. Results were not as predicted, however. Instead, the study provided support for a strong relationship between job involvement and learning. Surprisingly, pre-training motivation had no significant effect on learning.

Support for the motivation-training success link can be found in two earlier studies (Eden & Ravid, 1982; Ryman & Biersner, 1975). Ryman and Biersner surveyed military trainees and found that items assessing motivation to be trained and to learn were correlated with later training success in three training samples. Items assessing expectation of training success were also correlated with training success.

Although the results from these three studies are mixed, there does seem to be a strong indication that

various aspects of training motivation are associated with training success. The model proposes that higher motivation to be trained and to learn will result in greater learning. Since both kinds of training motivation are expected to positively affect training success, motivation to be trained and to learn are combined.

H.10 Training motivation will be positively correlated with training success.

Testing of the model will conclude with this hypothesis concerning the relationship between training motivation and training success. However, the model delineates additional hypotheses which should be tested in future research.

Experienced Training Transfer Climate

Once the employee has completed training and returned to the work group, he or she experiences both support and constraints to using the new behavior and knowledge. These come from two principle sources: organizational arrangements and the goal linkage that exists in the group at the time that training transfer will be attempted. Although the employee may have anticipated some of these constraints and supports for transfer even before taking the training, the reality of the situation may be somewhat different. Discussion of organizational arrangements will be brief,

with a more detailed review of the goal linkage that exists within the work group. Following this review, hypotheses about the effect of the three types of goal linkages on the experienced training transfer climate will be proposed. As noted before, these hypotheses will not be tested in the present study.

Organizational arrangements may be defined as constraints and supports to using the new training that originate outside the immediate work group. Examples of constraints might be lack of material and economic resources needed to put training into effect, requirements to interact with other departments that resist efforts to use the training, and an organizational culture that is incongruent with the values advanced by the training. Organizational support may be shown by the presence of resources needed to use the training, interdepartmental procedures that are congruent with the training, and an organizational culture that encourages use of the training. There has been much speculation about what organizational factors support and constrain training transfer (Baumgartel & Jeanpierre, 1972; Baumgartel, Reynolds & Pathan, 1984; Baumgartel, Sullivan & Dunn, 1978; Goldstein, 1986; Salinger, 1973).

Goal linkage, as suggested by Tjosvold (1984, 1986a, 1986b), originally develops as a result of the task design

and reward structure within a work group. Group tasks may require independent or cooperative work by the work group members. Formal and informal reward systems may reward individual or group performance. The nature of the group tasks results in the development of relationships that may or may not encourage sharing of expertise and knowledge. The attitudes/values and the nature of the dependent relationships determine the kinds of interactions likely to occur between group members. All four of these factors (task/reward structures, attitudes/values, dependent relationships, and interactions) combine to create three distinctive ways of working with other work group members. These ways of working together are summarized below.

Cooperative goal linkage occurs when task design requires interaction and interdependence between work group members and when successful group performance is used to award valued resources. Social arrangements are characterized by perceptions of shared vision, a sense of community, support norms, compatible goals, and confidence and trust in coworkers. This results in expectations that work and rewards will be distributed fairly, abilities will be exchanged, and productive conflict will occur.

Independent goal linkage occurs when task design encourages solitary work and rewards are given for individual success. Informal social arrangements are

characterized by perceptions of individual goals, impersonal dealings with coworkers, and indifference to coworker goals. This results in expectations of explicit instructions and criteria for performance, using abilities for one's own benefit, and avoidance of conflict.

Competitive goal linkage occurs when task design encourages solitary work and individual task performance is used to award limited resources. In these circumstances, informal social arrangements are characterized by perceptions of individual goals, norms of hostility and outdoing one another, suspicion about the motives of others, and incompatible goals. This results in a desire for unbiased rules to regulate work and rewards, using abilities for one's own benefit and against others, and either an escalation or avoidance of conflict.

It is generally recognized that the relationship between the trainee and the supervisor plays a part in how easily a trainee learns new roles (Dansereau, Graen, & Haga, 1975). In many cases, the relationship between the employee and the supervisor may be of primary importance in training transfer, especially in work groups where interdependence is low. However, there is a rising recognition of the importance of the work group in all aspects of work life. The work group members have more opportunity to influence each other as tasks become more interactive. Consequently,

the group goal linkage that is experienced by the trainee after his/her return from training will very likely affect the success of training generalization to the job. This area has been largely ignored, and would be a fruitful area of future research.

Under favorable conditions, a favorable training transfer climate will exist. In such a climate, group norms will allow experimentation without condemnation of mistakes, help will be available to lighten work loads, and coaching in the use of the new behaviors will occur spontaneously. These are likely to occur only when goal linkage is cooperative. Competitive and independent goal linkage are more likely to result in unfavorable training transfer climates because such helping behaviors are not seen as productive. In fact, in competitive situations, hindering behaviors are likely to be seen as goal productive. Research by Tjosvold (1986b; 1988; Tjosvold, et al., 1988) indicates that these two goal linkages result in similar levels of hostility. Based on these assumptions, the following hypotheses are proposed (but will not be tested.)

H. 11 Cooperative goal linkage is positively correlated with favorable experienced training transfer climate.

H. 12 Independent goal linkage is negatively correlated with favorable experienced training transfer climate.

H. 13 Competitive goal linkage is negatively correlated with favorable experienced training transfer climate.

Training Transfer

Training transfer is the actual generalization of trained behaviors and knowledge to the work place. According to the model, training transfer depends on the level of learning that originally took place and the nature of the training transfer climate. Support for the effect of training transfer climate comes from Baumgartel and Jeanpierre (1972). They reported that several characteristics of the organization allowed returning management trainees to make use of new techniques. Chief among these climate characteristics was open communication between managers and their peers, expressed encouragement from the organization to use technical training, and approval for innovation and the training content. Research by Noe and Schmitt (1986) showed strong support for the link between learning and transfer as measured by performance ratings.

It is hypothesized that both training success and a favorable training transfer climate are needed to allow training transfer. The following hypothesis is proposed but will not be tested.

H. 14 When both training success and a favorable training transfer climate are experienced, training transfer will occur.

Experienced Training Utility

Experienced training utility results when training allows personal, job, and career goals to be reached. Some of these goals will be reached soon after training is completed, while others may not be attained for years. In particular, career-related goals may require a long time to be fulfilled.

The model proposes that experienced training utility is a function of training transfer moderated by the consequences associated with transfer. For example, the individual would rarely experience training utility if using the trained behavior resulted in consistent negative consequences. On the other hand, if the consequences of using the training were consistently favorable, there should be a positive relationship between training transfer and experienced training utility.

Training utility depends in large part on whether training-dependent goals are met. Some goals (e. g., career goals) are not likely to be met within a short time after the completion of training. Measuring goal attainment with a completion date of several years would be necessary to evaluate career utility of training. Experienced job specific utility might conceivably be measured, but is also well beyond the scope of this study.

Training transfer, consequences, and experienced training utility will not be assessed in the present study. However, the model proposes that there is a relationship between training transfer climate and the training utility that the individual experiences, moderated by the consequences of using the training. Specifically, favorable consequences for using the training will result in a positive relation between training transfer and experienced training utility. Likewise, unfavorable consequences for using the training will result in a negative relation between training transfer and experienced training utility. Thus, the following hypothesis is proposed.

H. 15 Consequences for using the training moderate the relationship between training transfer and experienced training utility.

To complete the model, feedback loops are proposed. Since they will not be measured in this study, their

existence will only be outlined. As an individual undergoes cycles of training and training generalization, experienced training transfer climate feeds back to influence expected training transfer climate. In the same way, experienced training utility feeds back to influence expected job and career utility of training.

Study Summary

This study examines the interrelationships between training success and a several situational variables. Training success requires that trainees be motivated to learn. Motivation should be influenced by an expectation of training utility. Expected training utility is a product of three factors: personal involvement in the decision to be trained, decision source credibility, and expected training transfer climate. Expected training transfer climate is affected by the nature of interdependencies (goal linkage) between work group members. The specific hypotheses that will be tested are listed below.

H.1a. Higher levels of perceived training decision involvement will be associated with higher expected job utility of training.

H.1b. Higher levels of perceived training decision involvement will be associated with higher expected career utility of training.

H.2a. High expertise sources of training decisions will be associated with higher expected career utility of training.

H.2b. High expertise sources of training decisions will be associated with higher expected job utility of training.

H.3a. Trust in the source of the training decision will be positively correlated with expected career utility of training.

H.3b. Trust in the source of the training decision will be positively correlated with expected job utility of training.

H.4 Cooperative goal linkage will be associated with favorable expected training transfer climate.

H.5 Competitive goal linkage will be negatively associated with expected training transfer climate.

H.6 Independent goal linkage will be negatively associated with expected training transfer climate.

H.7 Expected training transfer climate will be positively correlated with expected job utility of training.

H.8 Expected job utility of training will be positively correlated with expected career utility of training.

H.9a Expected job utility of training will be positively correlated with training motivation.

H.9b Expected career utility of training will be positively correlated with training motivation.

H.10 Training motivation will be positively correlated with training success.

Survey data were collected before training in order to evaluate hypotheses one through nine. Then training success measures of learning were collected at the conclusion of training to evaluate hypothesis ten. Objective training success measures (post-training test scores) were collected when available. Trainee subjects were recruited from local employers, and represented different kinds of organizations, types of training, and levels within the organizations.

CHAPTER III

METHOD

Participants

Organizations likely to have active training programs were approached to participate in the research. Initial contact was made by phone to companies that had over 100 employees according to the 1988 Chamber of Commerce Employer List in a southern metropolitan area of 500,000. Of approximately 35 employers contacted from the Chamber list, only 18 had training programs that were active. Of these, two medical centers were unwilling to participate, due to restructuring or resistance to training that would have made employees unwilling to participate in the study. In addition, two manufacturing organizations initially agreed, but later found that they could not participate and withdrew. In one case, the head office planned corporate-wide surveys and did not wish to have both investigations going on at once. In the other case, data were actually gathered and mailed by the sponsoring organization, but were not received by the researcher. Followups to the company contact failed to determine what had happened to the data once it left his hands.

Eight organizations (organizational development or training consultants, management development agencies, and quasi-governmental training agencies) whose primary mission was to provide training for clients were also contacted. Of these, five agreed to participate.

Targeted training sessions included those for employees taking company sponsored training classes where participation was strongly encouraged or required of the participants. Participants included trainees who were attending because of strong influence from their employer, and who had been on the job for at least 3 months. A total of 245 trainees participated by filling out one or both questionnaires. These participants represented 15 training groups sponsored by 12 organizations.

Table 1 presents a summary of the characteristics of the organizations, training, and participants. Detailed descriptions of each group and the conditions associated with data collection can be found in Appendix A.

Across the training groups, there was wide variance in rank of the trainees, type of organization, source of trainer, duration of training, type of training, source of influence to take training, and gender. Eighty participants supervised two or more people, and 116 indicated that they supervised no one (49 did not respond). Participants came from organizations classified as manufacturing (85), public

TABLE 1. SUMMARY OF TRAINING/RESPONDENT CHARACTERISTICS

SPONSORING ORGANIZATION	TYPE OF TRAINING	LENGTH OF TRNG	SITE OF TRAINING	WHO PAID FOR TRNG	WHO WAS TRAINER	RESPONSE RATE	TRANEE CHARACTERISTICS	GENDER M/F	RANK S/N/S?	MEAN JOB TENURE
GOVT TRANS FACILITY	MANAGEMENT	10 DAYS	HOTEL	EMPLOYER	CONSULTANT	10/12-0.83	SUPERVISORS MIXED DEPTS	9/1/0	8/0/2	14.1
GOVT TRANS FACILITY	COMMUNICN SKILLS	5 DAYS	HOTEL	EMPLOYER	CONSULTANT	40/45-0.89	HOURLY MIXED DEPARTMENTS	20/18/2	0/35/5	4.40
MEDICAL CTR #1	MANAGEMENT	2 DAYS	WORK SITE	EMPLOYER	TRNG DEPT	18/38-0.46	MIXED DEPTS & LEVELS	2/16/0	16/2/0	5.0
MEDICAL CTR #2	CORONARY REFRESHER	12 DAYS	WORK SITE	EMPLOYER	TRNG DEPT & SUPVR	10/11-0.91	NURSES MIXED LEVELS	1/9/0	2/8/0	7.80
MEDICAL CTR #2	CPR	3 HRS	WORK SITE	EMPLOYER	TRNG DEPT	5/7-?	MIXED DEPTS & LEVELS	4/1/0	2/3/0	2.50
MEDICAL CTR #3	MANAGEMENT	4 HRS	WORK SITE	EMPLOYER	TRNG DEPT	5/7-?	SUPERVISORS MIXED DEPTS	3/2/0	3/0/2	11.75
GOVT TRNG AGENCY	PLANNING & ORGANIZ'G	6 HRS	HOTEL	EMPLOYER	CONSULTANT	11/25-0.44	GOVT EMPLOYEES MIXED DEPTS & LEVELS	6/4/1	7/0/2	7.55
GOVT TRNG AGENCY	LEADER STYLES	6 HRS	HOTEL	EMPLOYER	CONSULTANT	10/20-0.50	GOVT EMPLOYEES MIXED DEPTS & LEVELS	5/5/0	7/1/2	7.82
MANAGEMENT DEVELOPMNT FIRM #1	COMMUN'N SKILLS	25 DAYS	WORK SITE	EMPLOYER	CONSULTANT	12/25-0.48	MANAGEMENT DEVELOPMENT STAFF	3/5/4	6/1/5	3.90
MANAGEMENT DEVELOPMENT FIRM #2	FINANCE	1 DAY	CONF CENTER	EMPLOYER	CONSULTANT	17/20-0.85	MIXED LEVELS FROM SEVERAL ORGANIZATIONS	3/8/0	13/4/0	3.46
UNIVERSITY	WORKPROCS & DBASE	12 HRS	WORK SITE	EMPLOYER	TRNG DEPT	12/26-0.60	HOURLY FROM MIXED DEPTS	0/12/0	1/7/4	4.66
MULTIBRANCH BANK	DATA RETRIEVAL PRODUCT KNOWLEDGE	5 DAYS	CORP HQ AND WORK SITE	EMPLOYER	TRNG DEPT	10/12-0.83	CUSTOMER SERVICE REPS	0/10/0	0/10/0	6.61

TABLE 1 (CONTINUED)

SPONSORING ORGANIZATION	TYPE OF TRAINING	LENGTH OF TRNG	SITE OF TRAINING	WHO PAID FOR TRNG	WHO WAS TRAINER	RESPONSE RATE	TRAINEE CHARACTERISTICS	GENDER M/F?	RANK SWS?	MEAN JOB TENURE
CHEMICAL MANUFACTURER	STATISTIC PROCESS CONTROL	5 DAYS	WORK SITE	EMPLOYER	CONSULTANT & SUPERV	31/32 = 0.97	MANAGERS & ENGINEERS FROM SEVERAL COS #	24/6 =	8/13/10	2.76
HOME MANUFACTURER	SALES TRAINING	5 DAYS	CORPORATE OFFICE	EMPLOYER	TRNG DEPT	31/33 = 0.94	RECENTLY HIRED SALESPeOPLE	25/6 =	1/29 =	1.63***
JAPANESE ELECTRONIC MANUFACTURER	"TRAIN THE TRAINER"	25 DAYS	WORK SITE	EMPLOYER	CONSULTANT & SUPERV	23/30 = 0.76	SUPERVISORS & LINE WORKERS	12/11 =	6/7/16	1.69

SWS? SUPERVISOR/ NONSUPERVISOR/ NOT SPECIFIED

MED CENT2 TRAINING DEPARTMENT SENT OUT UP TO 50 COPIES OF QUESTIONNAIRES TO ADVANCE REGISTERED PARTICIPANTS WITHOUT KEEPING RECORDS. MANY PARTICIPANTS PREREGISTERED, BUT COULD NOT ATTEND AND THEREFORE DID NOT COMPLETE QUESTIONNAIRES. AS A RESULT, RESPONSE RATE CANNOT BE CALCULATED, BUT MAY BE AS LOW AS 0.10.

MED CENT3 TRAINING DEPARTMENT HAD UP TO 50 QUESTIONNAIRES AVAILABLE FOR PARTICIPANTS TO PICK UP IF THEY WISHED TO PARTICIPATE. NO RECORDS WERE KEPT OF NUMBER OF QUESTIONNAIRES TAKEN OR UNUSED, AND ONLY FIVE WERE RETURNED. AS A RESULT, RESPONSE RATE CANNOT BE CALCULATED, BUT MAY BE AS LOW AS 0.25, ESTIMATING 20 QUESTIONNAIRES DISTRIBUTED.

? Denotes no response.

Two-thirds of trainees from sponsoring organization, one-third from other companies.

* Remove one outlier, average tenure equals 3.00 years.

** Remove one outlier, average tenure equals 3.82 years.

*** Remove two outliers, average tenure equals 2.22 years.

**** Remove three outliers, average tenure equals 0.41 years.

sector (71), university or university-related settings (41), medical (36), and banking (10). Training was delivered by outside consultants for 33% of the participants, by the training department for 30% of the participants, and by a combination of consultant and company for 37% of the participants. The course length ranged from two hours to half day sessions spread out over five months. Management training was taken by the largest number of participants (71), followed by communication skills (52), sales (31), statistical process control (31), "Train the Trainer" (23), computer/product knowledge skills (22), and medical (15). The principle source of influence to take the training was evenly divided between the individual employee (33%), supervisor (32%), and someone over the immediate supervisor (32%). There were 123 males, 114 females, and 8 of unspecified gender. The return rate for 2 organizations is unknown, since these organizations copied and distributed the questionnaires without keeping records of how many were distributed. However, for the remaining 13 groups, the average response rate was .73, with a range of .44-.97.

Procedure

Subjects were administered two questionnaires. The first questionnaire was mailed or personally delivered by

the investigator during the week prior to training. Those that were mailed included a cover letter from the participating organization. The pre-training questionnaire contained scales designed to assess decision involvement, decision source credibility, goal linkage, expected training transfer climate, expected training utility, job involvement, and training motivation.

The second questionnaire was administered by the trainer at the end of the training. This measure consisted of a self-report measure of training topic knowledge before and after the training. Pre-training knowledge was measured retrospectively because respondents may not have known enough about the training content prior to training in order to accurately establish their pre-training knowledge. Both sets of questionnaires were either picked up at the training site or returned by mail after the completion of training.

Instrument Development

Before the current study, the instruments were submitted to three Industrial/Organizational Psychology graduate students and two professors from the same department to solicit suggestions for improvements. In this first pilot, these experts commented on the clarity of items, constructs, and instructions. Revisions were made in

the original questionnaires to take advantage of these suggestions.

A second pilot study was conducted to gather responses from a convenience sample of 23 people who more closely resembled the target population. Volunteers from the researcher's neighborhood and church were approached to complete the pilot questionnaire. Following item analysis, revisions to the questionnaire were made on the basis of the contribution of each item to the overall alpha for each construct included in the questionnaire. The alphas for each revised construct, based on pilot data from 23 participants, are reported in Tables 2-9. Since the pilot analysis is of only tertiary interest to the purpose of the entire study, there will be no further discussion of its analysis.

Instruments

Twelve measures were used in the present study: Training Decision Involvement; Decision Source Credibility (Trustworthiness and Expertise); Career Utility of Training; Job Utility of Training; Expected Training Transfer Climate; Cooperative Goal Linkage; Independent Goal Linkage; Competitive Goal Linkage; Training Motivation; Job Involvement, and Learning Success. Except as noted, items from each of the instruments have the following five

TABLE 2. TRAINING DECISION INVOLVEMENT (a = .88).

Variable	Question
NVLN1 *	Someone above my supervisor required that I take this training.
NVLN2 *	My supervisor required that I to take this training.
NLVN3	I enrolled in this training course because of my desires for training.
NLVN4	I was able to make suggestions about what training course I would take.
NLVN5	My supervisor listened to my preferences regarding my participation in this training course.
NLVN6	I was involved in the decision regarding my enrollment in this training course.

*** denotes reverse scored item**

TABLE 3. CREDIBILITY OF DECISION MAKER ($\alpha = .91$).

Variable	Question
THIS SOURCE:	
CRED1	is knowledgeable enough to know if I should take this training.
CRED2	knows what is involved in my job.
CRED3	is aware of my level of job performance.
CRED4	is aware of what training I need to improve my job performance.
CRED5	is aware of what I would like to achieve in my job/career.
CRED6	is aware of what training I need to attain my career goals.
CRED7	knows about the content of this training course.
CRED8	knows what is needed to get ahead in this organization.
CRED9	can be counted on to give me honest feedback on how I am doing.
CRED10	has always dealt fairly with me.
CRED11 *	I have to be careful what I say around this source.
CRED12	I have a high degree of trust in this source's intentions toward me.

* denotes reverse scored item

TABLE 4. JOB INVOLVEMENT (a = .69).^a

Variable	Question
JOBINVOL1	I am very much personally involved with my work.
JOBINVOL2	I live, eat, and breathe my job.
JOBINVOL3	The most important things which happen to me involve my work.

^aSource: Lodahl, T & Kejner M. (1965). The definition and measurement of job involvement. Journal of Applied Psychology, 49, 24-33.

TABLE 5. UTILITY OF TRAINING

Variable	Question
JOB SPECIFIC UTILITY OF TRAINING (a = .84)	
	I BELIEVE THIS TRAINING WILL:
TNGUSE1	help me do higher quality work.
TNGUSE2	help me improve performance in my current job.
TNGUSE3	focus on an area of my job where I need improvement.
TNGUSE9	be important for my job duties.
TNGUSE10	help me increase my productivity on this job.
TNGUSE11	enable me to do my job more effectively.
TNGUSE12	help me to reduce my job stress.
CAREER UTILITY OF TRAINING (a = .90)	
	I BELIEVE THIS TRAINING WILL:
TNGUSE4	make me more eligible for a promotion.
TNGUSE5	make me more eligible for a wage increase.
TNGUSE6	make me more eligible for a more desirable job assignment in this company.
TNGUSE7	improve my chances to get a better job with another company.
TNGUSE8	increase my future job prospects and opportunities.

TABLE 6. TRAINING TRANSFER CLIMATE

Variable	Question
WORK GROUP TRAINING TRANSFER CLIMATE ($\alpha = .75$)	
	WHEN I RETURN FROM TRAINING, I BELIEVE:
TFCLI1 *	that the people I work with most often will be impatient if I try out new skills.
TFCLI2 *	my coworkers will allow me to get accustomed to using my new skills on the job.
TFCLI3	my using the training course procedures will be resisted by my coworkers.
TFCLI4	my coworkers will accept me making mistakes on the job as a necessary part of trying out new skills.
TFCLI5 *	my coworkers will not cooperate with me in using the skills taught in the training course.
SUPERVISOR TRAINING TRANSFER CLIMATE ($\alpha = .82$)	
	WHEN I RETURN FROM TRAINING, I BELIEVE:
TFCLI6*	my supervisor will be impatient if I try out my new skills.
TFCLI7	my supervisor will allow me to get accustomed to using new skills on the job.
TFCLI8	my supervisor will help me get started using my training skills.
TFCLI9 *	my supervisor will prevent me using the procedures taught in the training course.

TABLE 6. (CONTINUED)

Variable	Question
TFCLI10 *	my supervisor will accept me making mistakes on the job as a necessary part of my trying out new skills.
TFCLI11	my supervisor will not be tolerant of any changes in how things are done.
TFCLI12	my supervisor is already using the skills taught in this course.

* denotes reverse scored item

TABLE 7. GROUP GOAL LINKAGE.^a

Variable	Question
COOPERATIVE GOAL LINKAGE ITEMS (a = .97)	
GL1	I learn a lot from working with the typical person in my work group.
	THE TYPICAL MEMBER OF MY WORK GROUP:
GL6	enjoys working on tasks that require cooperation.
GL9	willingly shares information with coworkers.
GL11	passes on important information to me.
GL12	is pleased when I succeed.
GL14	shows as much concern for my goals as for his/her's.
GL17	helps me find ways to achieve my objectives.
GL20	gives high priority to my goals.
GL23	helps me grow and develop on the job.
GL26	takes pride in my accomplishments.
GL29	shares ideas and resources with me.
GL31	structures things for our goals.
GL33	is interested in what I want to accomplish.
GL35	helps me do a good job.

TABLE 7. (CONTINUED)

Variable	Question
COMPETITIVE GOAL LINKAGE ITEMS (a = .94)	
CONCERNING THE TYPICAL MEMBER OF MY WORK GROUP,	
GL2	When he/she achieves goals, it makes it more difficult for me to achieve mine.
GL4	His or her goals are incompatible with mine.
GL5	His or her success comes at the expense of mine.
THE TYPICAL MEMBER OF MY WORK GROUP:	
GL7	conceals or misrepresents information that would be helpful to others in my work group.
GL15	withholds important information from me.
GL18	likes to demonstrate his/her superiority.
GL21	restricts my attempts for improvement.
GL24	is disturbed by my accomplishments.
GL27	structures things to favor his/her goals.
GL30	tries hard to look better than I.
GL32	feels threatened when I learn new skills and knowledge.
GL34	structures things his/her way and ignores my interests.
GL36	works to make me look ineffective.
GL37	likes to show that he/she knows more than I.
GL38	is too busy to be interested in what I want.

TABLE 7. (CONTINUED)

Variable	Question
THE TYPICAL MEMBER OF MY WORK GROUP:	
GL36	works to make me look ineffective.
GL37	likes to show that he/she knows more than I.
GL38	is too busy to be interested in what I want.
GL39	goes out of his/her way to undercut my efforts.
GL40	gets in the way of my growth and development.
GL41	is committed to his/her objectives and unconcerned about mine.
GL42	wants me to do poorly.
INDEPENDENT GOAL LINKAGE ITEMS ($\alpha = .73$)	
GL3	We work separately.
THE TYPICAL MEMBER OF MY WORK GROUP:	
GL8	prefers to work alone.
GL10	is indifferent if I attain my goals.
GL13	is uninterested in the flow of information.
GL16	doesn't know what I want to accomplish.
GL19	looks out for his/her own welfare rather than that of the group.
GL22	prefers to work alone rather than with me.
GL25	is unconcerned whether I get ahead in the organization.

TABLE 7. (CONTINUED)

Variable	Question
GL28	likes to get rewards through his/her own individual work

^aSource: Modified from Tjosvold, D. (1986). Organizational test of goal linkage theory. Journal of Occupational Behavior, 7, 77-88.

TABLE 8. TRAINING MOTIVATION ($\alpha = .86$).

Variable	Question
LNGMOT1	I will try to learn as much as I can from this training course.
LNGMOT2	I will make a special effort to complete all assignments.
LNGMOT3	I will put forth considerable effort in learning the skills taught in this class.
LNGMOT4	I am looking forward to attending this training course.
LNGMOT5 *	I plan on putting out a minimum of effort in this course.
LNGMOT6	I am willing to focus all my attention on learning the material presented in this course.
LNGMOT7	I plan to use this course to learn a new way of doing things.
LNGMOT8	I plan to really get involved in learning the material presented in this training course.
LNGMOT9	I am willing to use my own time to prepare for class by reading, practicing skills, doing assignments, etc.

* denotes reverse scored item

TABLE 9. SELF-REPORT TRAINING KNOWLEDGE ($\alpha = .78$).

Variable	Question			
PRE-TRAINING KNOWLEDGE (a = .70)				
PRETRNG1	I could have shown or explained most of what was taught in this training course even before I took the training.			
PRETRNG2 *	At the beginning of this course, I understood nothing about the subject area taught in this course.			
PRETRNG3 *	Before training, I used to <u>incorrectly</u> perform some of the skills taught in the course.			
PRETRNG4	How much of the material taught in the training class did you <u>already know</u> ?			
Almost None 1	Very Little 2	Some 3	Quite A Bit 4	Almost All 5
PRETRNG5 *	Before you took this course, how easy would it have been for you to apply what was later taught in the course?.			
Extremely Difficult 1	Very Difficult 2	Moderately Difficult 3	Quite Easy 4	Extremely Easy 5

TABLE 9. (CONTINUED)

Variable	Question
POST TRAINING KNOWLEDGE (a = .85)	
PSTTRNG1	Based on what I learned, I am very confident that I will know how to use the skills taught in the course when I return to the job.
PSTTRNG2	If the opportunity presents itself during the first month I return to the job, I am very certain that I will remember enough to use the training.
PSTTRNG3	I am confident that I have a solid understanding of the material presented in the training course.
PSTTRNG4	Now if someone asked me, I am confident that I could show or explain what was taught in the training course.
PSTTRNG5	How much of the material taught in the training class did you know <u>at the end of the training?</u>
Almost None	Very Little Some Quite A Bit Almost All
1	2 3 4 5

* denotes reverse scored item.

anchors: Strongly Disagree = 1, Somewhat Disagree = 2, Neutral = 3, Somewhat Agree = 4, and Strongly Agree = 5. Higher scores represent a higher position on the construct continuum being measured. Each of the instruments are described below in greater detail (see the Appendix B for the complete text of the pre-training and post-training questionnaires).

Training Decision Involvement

Training decision involvement was measured by six likert-type items constructed for this study. These are presented in Table 2. Four items were designed to measure the employee's perception of his/her influence on the decision to take training. Two other items measured the extent of influence of other sources of the training decision.

Decision Source Credibility

The Ilgen, Fisher and Taylor (1979) feedback model views feedback source credibility as a function of expertise and trustworthiness. The scale items that were constructed to measure credibility are presented in Table 3. Seven expertise items addressed the decision source's knowledge of the individual's job requirements, performance level, job/career goals, knowledge of the training course content,

and company advancement opportunities/requirements. Five trustworthiness items assessed the participants's opinion of the decision source's motives, fairness, and willingness to facilitate the participant's goal attainment. The items on this instrument were answered with respect to the single person (other than themselves) who had the most influence on the training decision. Instructions asked the participant to consider only this source for the balance of the items.

Job Involvement

The Job involvement items are presented in Table 4. This measure was added after the pilot test. Due to the number of items already in the pre-training questionnaire, length was a primary consideration. The job involvement instrument was taken from the Michigan Organizational Assessment Questionnaire. As originally developed, this three-item scale used a seven anchor scale to measure employees' identification with their jobs (Lodahl & Kejner, 1965). However, in keeping with the format of the rest of the questionnaire, only five anchors were used for this research.

Expected Training Utility

The expected training utility instrument was constructed to independently assess two kinds of training

utility: job utility and career utility of training (see Table 5). Job utility was measured by seven items which assessed the extent to which the training course was expected to facilitate goal attainment for the current job. Items addressed areas such as quality, productivity, efficiency, learning job skills, and stress reduction.

Career utility was measured by five items which assessed the extent to which the training course was expected to facilitate goal attainment for career development. Items addressed career goals like gaining a promotion, obtaining a raise or more desirable job assignment, and improving future job prospects.

Expected Training Transfer Climate

This 12 item measure (see Table 6) assessed the expected support for using the training in the work setting. All items were constructed by the researcher. Five items addressed how the work group might generally be expected to respond to the employee returning from training. These items assessed the support that the individual expected from coworkers when he or she returned from training; e.g., tolerance for mistakes, experimentation, and resistance to the use of the new skills. Seven similar items assessed what the individual expected from the supervisor.

Goal Linkage

Three instruments have been developed by Tjosvold and used in various forms in studies involving leader-subordinate and group member relationships (Tjosvold, Andrews, & Jones 1983; Tjosvold, 1986). The items measure perceived goal linkage and the quality of group member interaction that is associated with each goal linkage. A modification of the group form (Tjosvold, 1986) is used in the present research. The original form directed subjects to fill out each questionnaire twice, once each for the least and most effective coworkers in the subject's work group. The current study consolidated all three instruments into one questionnaire (see Table 7, page 68). The modifications were made to get a more representative idea of the group goal linkage. While the content of the items was similar to the original questionnaire, the target was a "typical" or "average" member of the work group. This provided the same information but used only half the number of items. Since the entire pre-training questionnaire was already very long, reducing the burden on the participant was a primary concern. Several additional likert-type items (GL2, GL6-GL10 and GL22) were included to address areas that the original items neglected. Measurement model analysis (discussed later, indicated that GL2 and GL8 should be dropped from the competitive goal linkage scale. Therefore,

these two items do not appear in Table 7. In contrast to the balance of the questionnaire, goal linkage items were rated using five frequency anchors ranging from Almost Never = 1 to Almost Always = 5.

Cooperative Goal Linkage

The cooperative goal linkage measure contained 14 items. Twelve items were taken directly from Tjosvold and two (GL6 and GL9) were constructed for the study.

Competitive Goal Linkage

The competitive goal linkage measure contained 19 items, with 18 taken directly from Tjosvold plus one additional item, GL7.

Independent Goal Linkage

The independent goal linkage measure contained nine items. Six items were taken directly from Tjosvold and three items were constructed for the study.

Past research has demonstrated that cooperative linkage is highly correlated with Independent Linkage ($r = -.84$) and competitive linkage ($r = -.85$). competitive and independent linkages are also highly correlated ($r = .78$). In addition, factor analyses indicate that the factors are not very "clean" (Tjosvold, 1983). All items have low to moderate loadings on two of the three factors, with moderate to high weights on the remaining factor. Nevertheless, according to Tjosvold, the factors are distinguishable. Consistent with

past research, pilot data also indicated that correlations between the three goal linkages were high. competitive and independent linkage correlated .88, competitive and cooperative linkage correlated -.81, and cooperative and independent linkage correlated -.81.

Training Motivation

Nine likert-type items were constructed to assess motivation to be trained (see Table 8). Items measured the intention to learn the course material, put forth effort, get actively involved in the course, complete assignments, and work on course material outside class. The items were based on previous research, with several items being slight modifications from Noe and Schmitt (1986).

Training Success

The independent measure, training success, was a trainee's self-report of pre and post-training knowledge. It used 10 likert-type items to assess the trainee's perception of his/her knowledge of the course material before and after training (see Table 9). The first five items measured their pre-training knowledge by asking subjects to indicate their pre-training ability to show or explain the course material, ease of applying knowledge or skill, and proportion of the course content already known.

The last five items measured post-training knowledge by assessing the participants' confidence in their ability to show or explain what was taught, estimates of how well material would be remembered in one month, and proportion of course content that was well learned. Scores from the pre-training section of the training success instrument were used as a measure of pre-training knowledge. During the analyses, effects of the other variables on post-training knowledge were tested while simultaneously controlling for pre-training knowledge.

Objective post-training test scores were requested but available for only a few participants. Out of the total sample of 245, only 15 had complete sets of data for objective score, pre and post-training knowledge. These represented two training groups, one for specialized medical training, and one for updating computer data retrieval/product knowledge skills. The tests were tailored to course content by the instructor. At least for this small sample, having both self-report and objective learning scores allowed criteria measures corresponding to Kirkpatrick's (1959) first two levels of training criteria, i.e., reaction and learning.

CHAPTER IV

RESULTS

Analysis of the research data were conducted in two stages using LISREL. First, measurement model analyses evaluated the contribution of each item to the construct (latent variable) being measured by the instrument. Items that did not contribute to the construct or loaded on more than one factor were deleted, and the instrument was revised accordingly. Then, the structural model was tested to determine the strength of the hypothesized relationships between the constructs. On the basis of these analyses, the structure of the model was revised. A more detailed discussion of each phase follows.

Measurement Model

Before measurement model analysis began, item frequency distributions and kurtosis were examined. The frequency distributions of all but a few of the items were acceptable. However, a couple of items had a high kurtosis (over two) indicating that LISREL may have difficulty in estimating a solution because of lack of variance in the item responses.

Descriptive analysis also produced a correlation matrix for use in LISREL. Since not all participants completed all of the items for the pre and post questionnaires, the matrices used in the LISREL analysis were produced using only data from questionnaires with no missing responses. There were 239 complete sets of data for the pre-training constructs and 212 complete sets of data for post-training constructs. Of these, 176 respondents completed all items on both pre and post-training constructs. The correlation matrix for the entire measurement model is thus based on 176 respondents.

Initial Measurement Model

Before assessing the entire measurement model, each scale was tested and refined separately. The LISREL measurement model for each construct was used to verify or modify the a priori factor structure. In the process, each construct measure was fine-tuned by deleting items when modification indices indicated loading on more than one factor. Pre-training items 30, 42, 48, 49, 54, 74 and post-training items 3,4 and 10 were dropped for this reason. In addition, pre-training item 7 (other than yourself, who was the most important influence on your participation in training) was dropped. Its purpose was to get the participant to keep one particular training decision

influence in mind as they answered questions about decision source credibility, and was never intended to be included in the analysis of the model. These initial analyses reduced the total number of items for both the pre and post training scales from 107 to 97. This revised 97-item measure provided the version of the questionnaire that was used in the final measurement model.

Final Measurement Model

The overall fit of the 97 items to the a priori constructs was determined with a comprehensive measurement model. Starting values for the lamda matrix were specified based on confirmatory factor analysis of each latent variable. Since the initial measurement model had already refined each latent variable, items were forced to load on their associated a priori factors. All latent variables in the phi matrix were allowed to intercorrelate. The final version of the questionnaire was associated with a chi squared statistic of 8454.23 (4504, $n=176$, $p < .01$) and a chi squared ratio of 1.88. Although there is no universally accepted critical value for accepting or rejecting the fit of a LISREL model, chi squared ratios ranging between two and three are considered acceptable (Bollen, 1989). Joreskog, one of the originators of the index, seems to place the cut off around 2 (Loehlin, 1987). Thus, with a

chi squared ratio of 1.88, the measurement model had an excellent fit.

The lamda values (factor loadings), standard errors, and t-values for the items included in the final measurement model can be found in Table 10. Chronbach alphas, item means and standard deviations for each scale can be found in the same table. The phi matrix (correlations between the latent variables) is presented in Table 11. Specific findings from the measurement model are presented below.

Training Decision Involvement

All six items from the original scale were kept.

Decision Maker Credibility

The LISREL analysis of the Credibility measure verified two highly correlated latent variables ($r = .87$), expertise and trustworthiness. Because of the high correlation between variables, expertise and trustworthiness were combined into a single measure. All items from the original scale were retained.

Job Involvement

All three items from the original scale were kept.

Expected Training Utility

Initial analysis indicated that one item (TNGUSE8, questionnaire item 30) did not load cleanly and was dropped. Two correlated factors were verified ($r = .55$), job and career utility of training. These were measured with seven

TABLE 10 MEASUREMENT MODEL

ITEM NAME	MEAN	STANDARD DEVIATION	LAMBDA	LAMBDA STANDARD ERROR	LAMBDA T VALUES
KSI 1 = GROUP TRAINING TRANSFER CLIMATE (ALPHA = .82)					
TFCLI1	3.7420	1.1250	0.6249	0.0717	8.7194
TFCLI2	3.7100	0.9780	0.7143	0.0688	10.3776
TFCLI3	3.7740	1.0880	0.8058	0.0655	12.2975
TFCLI4	3.1940	1.1090	0.5591	0.0735	7.6068
TFCLI5	3.8060	1.1450	0.8195	0.0650	12.6050
KSI 2 = JOB SPECIFIC TRAINING USEFULNESS (ALPHA = .90)					
TNGUSE1	3.7340	0.9970	0.7893	0.0640	12.3255
TNGUSE2	3.8710	0.9100	0.8762	0.0604	14.5083
TNGUSE3	3.7900	1.0540	0.6617	0.0685	9.6633
TNGUSE9	3.8870	1.0220	0.8348	0.0622	13.4220
TNGUSE10	3.6210	1.0710	0.8573	0.0612	14.0006
TNGUSE11	3.7180	0.9840	0.8598	0.0611	14.0671
TNGUSE12	3.4240	1.1290	0.4685	0.0734	6.3852
KSI 3 = CAREER TRAINING USEFULNESS (ALPHA = .83)					
TNGUSE4	3.1690	1.1670	0.8584	0.0625	13.7231
TNGUSE5	3.0730	1.1420	0.8824	0.0616	14.3140
TNGUSE6	3.0650	1.1240	0.8519	0.0628	13.5678
TNGUSE7	3.3390	0.9270	0.3641	0.0766	4.7544
KSI 4 = TRAINING MOTIVATION (ALPHA = .88)					
LNGMOT1	4.6070	0.9050	0.3880	0.0763	5.0876
LNGMOT2	4.5740	0.6910	0.7277	0.0675	10.7841
LNGMOT3	4.5160	0.6710	0.7523	0.0666	11.2981
LNGMOT4	3.8360	1.1880	0.7236	0.0676	10.7015
LNGMOT5	4.1070	1.2780	0.3992	0.0761	5.2475
LNGMOT6	4.2620	0.9250	0.7134	0.0680	10.4939
LNGMOT7	4.2050	0.8020	0.5799	0.0721	8.0466
LNGMOT8	4.2050	0.7490	0.8341	0.0634	13.1611
LNGMOT9	3.9330	1.0640	0.6280	0.0707	8.8814

TABLE 10 (CONTINUED)

ITEM NAME	MEAN	STANDARD DEVIATION	LAMBDA	LAMBDA STANDARD ERROR	LAMBDA T VALUES
KSI 5 = POST-TRAINING KNOWLEDGE (ALPHA = .92)					
PSTKNOW1	4.0270	0.8250	0.8274	0.0625	13.2380
PSTKNOW2	4.1080	1.0210	0.8460	0.0617	13.7051
PSTKNOW3	3.9010	1.0000	0.9380	0.0577	16.2554
PSTKNOW4	3.7030	1.0670	0.8951	0.0596	15.0110
KSI 6 = GROUP GOAL LINKAGE (ALPHA = .97)					
GL1	3.3230	0.9760	0.5332	0.0708	7.5310
GL6	3.5200	1.1190	0.6456	0.0679	9.5034
GL9	3.9270	1.0950	0.6168	0.0687	8.9744
GL11	4.0160	1.1010	0.6768	0.0670	10.0997
GL12	3.8700	1.1090	0.8265	0.0618	13.3810
GL14	3.2200	1.2450	0.7800	0.0636	12.2728
GL17	3.2750	1.1400	0.7154	0.0658	10.8732
GL20	2.8700	1.2140	0.6728	0.0671	10.0208
GL23	3.2930	1.1580	0.7320	0.0652	11.2181
GL26	3.2680	1.2420	0.7691	0.0640	12.0259
GL29	3.6720	1.0790	0.7522	0.0646	11.6521
GL31	3.3280	1.0400	0.6423	0.0680	9.4422
GL33	3.3200	1.2280	0.7931	0.0631	12.5746
GL35	3.6310	1.0220	0.8217	0.0620	13.2617
GL4	2.2660	1.1830	0.3911	0.0735	5.3195
GL5	1.6340	0.9940	0.4827	0.0719	6.7159
GL7	1.7400	0.9310	0.6705	0.0672	9.9765
GL15	1.7150	0.9790	0.7032	0.0662	10.6238
GL18	2.5040	1.1690	0.6101	0.0689	8.8531
GL21	1.8130	1.0030	0.7401	0.0650	11.3899
GL24	1.8700	1.0000	0.7538	0.0645	11.6861
GL27	2.7300	1.1570	0.5724	0.0699	8.1921
GL30	2.2620	1.0590	0.7179	0.0657	10.9235
GL32	2.1480	1.1400	0.7467	0.0647	11.5319
GL34	2.2050	1.1990	0.7627	0.0642	11.8835
GL36	1.7950	1.0280	0.7187	0.0657	10.9413
GL37	2.0820	1.1250	0.7889	0.0632	12.4782
GL38	2.1970	0.9850	0.5996	0.0692	8.6663

TABLE 10 (CONTINUED)

ITEM NAME	MEAN	STANDARD DEVIATION	LAMBDA	LAMBDA STANDARD ERROR	LAMBDA T VALUES
GL39	1.6390	0.9450	0.7552	0.0645	11.7175
GL40	1.5980	0.9330	0.7488	0.0647	11.5782
GL41	2.1150	1.1300	0.7447	0.0648	11.4892
GL42	1.5370	1.0090	0.7026	0.0662	10.6112
GL10	2.6720	1.3010	0.4298	0.0729	5.8969
GL13	2.0160	1.0860	0.3544	0.0741	4.7830
GL16	2.5740	1.0440	0.4353	0.0728	5.9803
GL19	2.6260	1.2110	0.6660	0.0673	9.8913
GL22	2.5930	1.1370	0.4802	0.0719	6.6764
GL25	2.5200	1.2830	0.6162	0.0687	8.9627

KSI 7 = SUPERVISOR TRAINING TRANSFER CLIMATE (ALPHA = .73)

TFCLI6	3.8540	1.2330	0.6338	0.0743	8.5307
TFCLI7	4.0810	0.9590	0.6709	0.0732	9.1617
TFCLI9	4.2110	1.0880	0.7406	0.0712	10.4075
TFCLI10	3.3150	1.2390	0.4979	0.0778	6.4016
TFCLI11	3.7580	1.2840	0.6374	0.0742	8.5924
TFCLI12	3.3950	1.0960	0.3288	0.0809	4.0627

KSI 8 = JOB INVOLVEMENT (ALPHA = .69)

JBINVLV1	4.1770	0.9110	0.5111	0.0796	6.4213
JBINVLV2	2.6370	1.2900	0.7951	0.0761	10.4469
JBINVLV3	2.6290	1.3220	0.7346	0.0764	9.6114

KSI 9 = TRAINING DECISION INVOLVEMENT (ALPHA = .81)

NVLV1	1.9020	1.2090	0.6127	0.0719	8.5194
NVLV2	2.2240	1.1630	0.3926	0.0768	5.1120
NVLV3	3.0240	1.4000	0.7490	0.0678	11.0419
NVLV4	2.2560	1.3130	0.5434	0.0737	7.3722
NVLV5	2.7520	1.3180	0.6132	0.0719	8.5269
NVLV6	2.3680	1.4000	0.9081	0.0625	14.5345

TABLE 10 (CONTINUED)

ITEM NAME	MEAN	STANDARD DEVIATION	LAMBDA	LAMBDA STANDARD ERROR	LAMBDA T VALUES
KSI 10 = CREDIBILITY OF TRAINING DECISION MAKER (ALPHA = .91)					
CRED1	3.9350	1.1460	0.7537	0.0653	11.5452
CRED2	4.0480	1.1390	0.8075	0.0632	12.7721
CRED3	3.8290	1.2330	0.8342	0.0621	13.4256
CRED4	3.8550	1.1670	0.8539	0.0613	13.9316
CRED5	3.4310	1.2220	0.7867	0.0641	12.2819
CRED6	3.5560	1.1850	0.7685	0.0647	11.8708
CRED7	4.1940	0.9250	0.3421	0.0754	4.5356
CRED8	4.2740	0.8680	0.5499	0.0714	7.6984
CRED9	4.0650	1.0570	0.8055	0.0633	12.7224
CRED10	3.9840	1.2490	0.7022	0.0671	10.4687
CRED11	3.1300	1.3550	0.4679	0.0733	6.3871
CRED12	3.7100	1.2010	0.6730	0.0680	9.8937
KSI 11 = PRE-TRAINING KNOWLEDGE (ALPHA = .75)					
PREKNOW1	2.2610	1.2040	0.7550	0.0901	8.3797
PREKNOW2	3.6960	1.1060	0.3852	0.0857	4.4971
PREKNOW5	3.0450	0.9280	0.7026	0.0886	7.9320

TABLE 11. CORRELATIONS BETWEEN LATENT VARIABLES

	KSI 1	KSI 2	KSI 3	KSI 4	KSI 5	KSI 6
KSI 1	1.0000					
KSI 2	0.3827	1.0000				
KSI 3	0.2457	0.5490	1.0000			
KSI 4	0.4511	0.6717	0.3833	1.0000		
KSI 5	0.1142	0.1144	0.0953	0.1084	1.0000	
KSI 6	0.6747	0.3121	0.2700	0.2751	0.2267	1.0000
KSI 7	0.5949	0.4601	0.2952	0.4225	0.0673	0.4123
KSI 8	0.0444	0.4585	0.3314	0.3544	0.0289	0.2011
KSI 9	0.2939	0.4841	0.2115	0.3934	0.0588	0.1257
KSI 10	0.4156	0.5157	0.4650	0.4081	0.1965	0.4628
KSI 11	-0.2332	-0.2366	-0.1058	-0.3251	0.0912	-0.2617

	KSI 7	KSI 8	KSI 9	KSI 10	KSI 11
KSI 7	1.0000				
KSI 8	-0.0347	1.0000			
KSI 9	0.3446	0.2263	1.0000		
KSI 10	0.4276	0.2869	0.2993	1.0000	
KSI 11	-0.2042	-0.0025	-0.2443	-0.2229	1.0000

* p > 0.05 2-tailed test

KSI 1 Group Training Transfer Climate
 KSI 2 Job Utility of Training
 KSI 3 Career Utility of Training
 KSI 4 Training Motivation
 KSI 5 Post-Training Knowledge
 KSI 6 Group Goal Linkage
 KSI 7 Supervisor Training Transfer Climate
 KSI 8 Job Involvement
 KSI 9 Training Decision Involvement
 KSI 10 Credibility of Decision Maker
 KSI 11 Pre-Training Knowledge

and four items, respectively. LISREL analysis indicated that the two factor solution fit the data better than a one-factor solution. The fit of the training utility measurement model with two factors (job and career utility) revealed a chi squared statistic of 257.76 (53, $n = 176$), while the fit of corresponding single factor measurement model revealed a chi squared statistic of 496.25 (54, $n=176$). The difference between the two chi squared statistics (chi squared difference = 238.49, 1 df) was significant ($p<.01$). Thus, the two factor solution was used in the present study.

Even though the two factor solution was significantly better than the single factor, the dual factor chi squared ratio of 4.86 was still higher than desired. However, further fitting of the solution did not improve the fit without dropping items that appeared important to capture the construct. Therefore, the seven and four item scales were used without further fitting.

Training Transfer Climate

One item (TFCLI8, item number 42) did not load cleanly and was dropped, leaving a total of 11 items. The analysis verified 2 correlated factors ($r = .60$), work group and supervisor training transfer climate. LISREL analysis indicated that the two factor solution fit the data better than a one factor solution. The chi squared for the

training transfer climate measurement model with two factors (group climate and supervisor climate) was 114.65 (43, $n = 176$), while the chi squared of the corresponding single factor measurement model was 267.63 (54, $n = 176$). The difference between the two chi squared statistics (chi squared difference = 152.98, 11 df) was significant ($p < .01$).

Goal Linkage

On the basis of past research, three goal linkage factors should have been retained. However, the analysis failed to support the original three correlated factors advanced by Tjosvold (1983). There was the possibility, however, that the cooperative and competitive goal links were really one continuum, with independent goal linkage on a separate continuum. LISREL analysis of one versus two factors revealed an excellent fit for both solutions. The two factor solution (cooperation-competitive and independent) provided a slightly better fit than the best single factor solution (achieved by dropping 4 items). Since the 2 factors were highly correlated ($r = -.87$), the single factor solution was accepted.

Since the original competitive and independent items loaded negatively on this single factor, these items were reverse-scored and combined with the original cooperative items to comprise a single goal linkage scale with 38 items. Henceforth, this construct was referred to as "goal

linkage", with cooperative goal linkage referring to higher values of the construct. GL2, GL3, GL8 and GL28 (questionnaire items 48, 49, 54 and 74) were dropped from the original 42 item goal linkage scale because they loaded on other factors and had low goal linkage loadings. In Table 7, the first 14 Goal Linkage items were originally cooperative items, the next 18 were competitive, and the final 6 were independent.

Training Motivation

All nine items from the original scale were retained.

Knowledge of Training Content

An excellent fit was achieved by dropping PRETRNG3, PRETRNG4, and PSTTRNG5 (items 2, 3 and 10 from the post-training questionnaire). The analysis verified two slightly correlated factors ($r=.09$), pre-training knowledge and post-training knowledge. The pre-training knowledge scale had three items and the post-training scale had 4 items.

As mentioned earlier, a small sample ($n = 15$) of objective post training scores was collected after the participants completed the self-report measure of job knowledge. Since the two sets of scores were on different metrics, scores were standardized within groups to allow comparison across the different training courses. Objective performance was correlated with the self-report measure of post training knowledge ($r = .43$), although limited sample

size prevented a significant relationship ($p > .05$). Despite the nonsignificant results, the size of the correlation provides some support for the validity of the self-reports of learning measures.

Structural Equation

Phase two analysis began once a satisfactory fit for the measurement model was obtained. The original structural model (see Figure 7) was modified slightly on the basis of the measurement model analysis (see Figure 8). The modification included separating training transfer climate into two factors, group and supervisor training transfer climate, combining trustworthiness and expertise of training decision source into a single factor, and combining cooperative, competitive, cooperative and independent goal linkage into a single factor. Thus, the structural model will test the following paths.

RH.1a. Higher levels of perceived training decision involvement will be associated with higher expected job utility of training.

RH.1b. Higher levels of perceived training decision involvement will be associated with higher expected career utility of training.

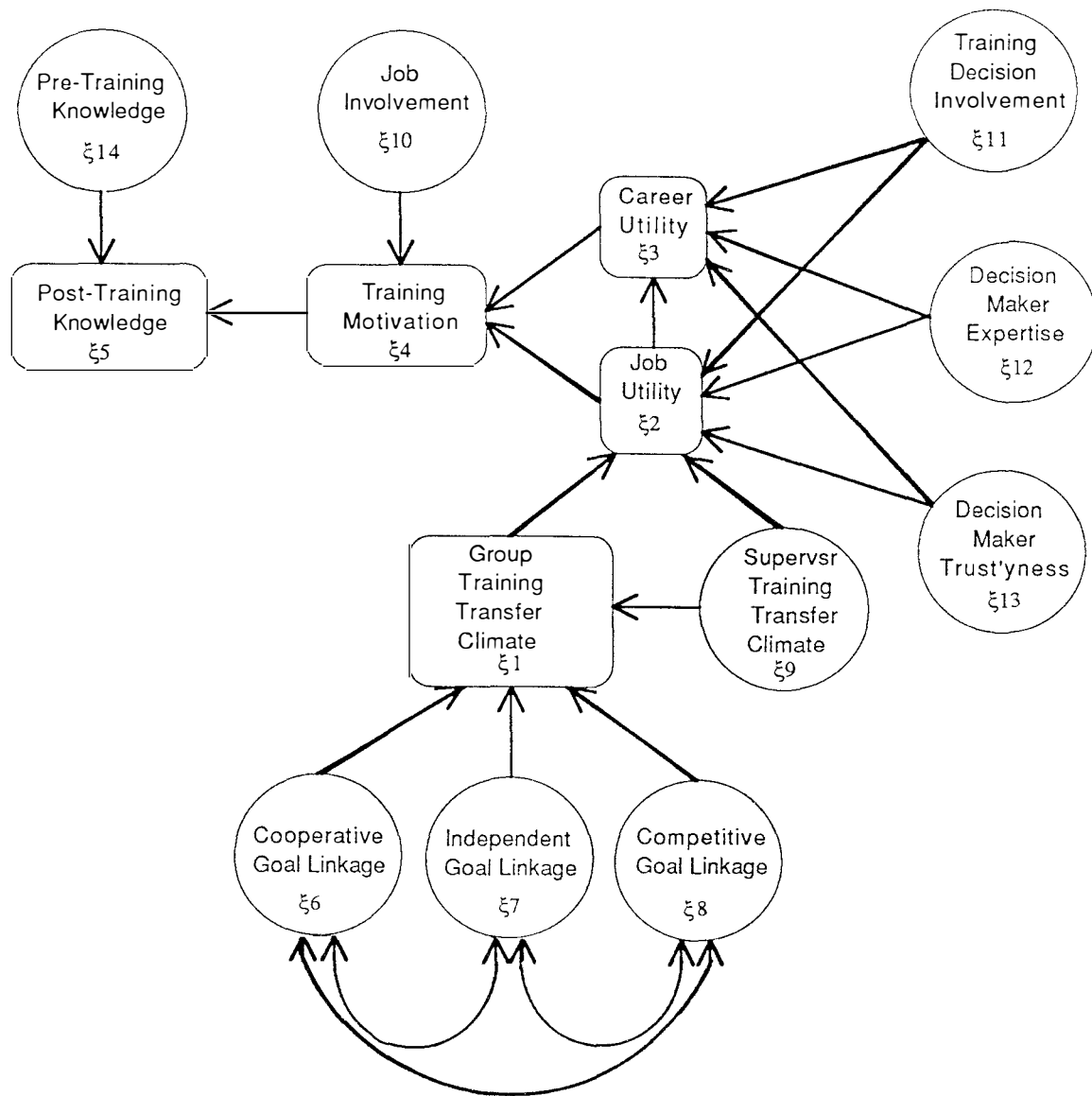


FIGURE 7. STRUCTURAL MODEL OF THE RELATIONSHIPS THAT WILL BE TESTED IN THE MODEL.

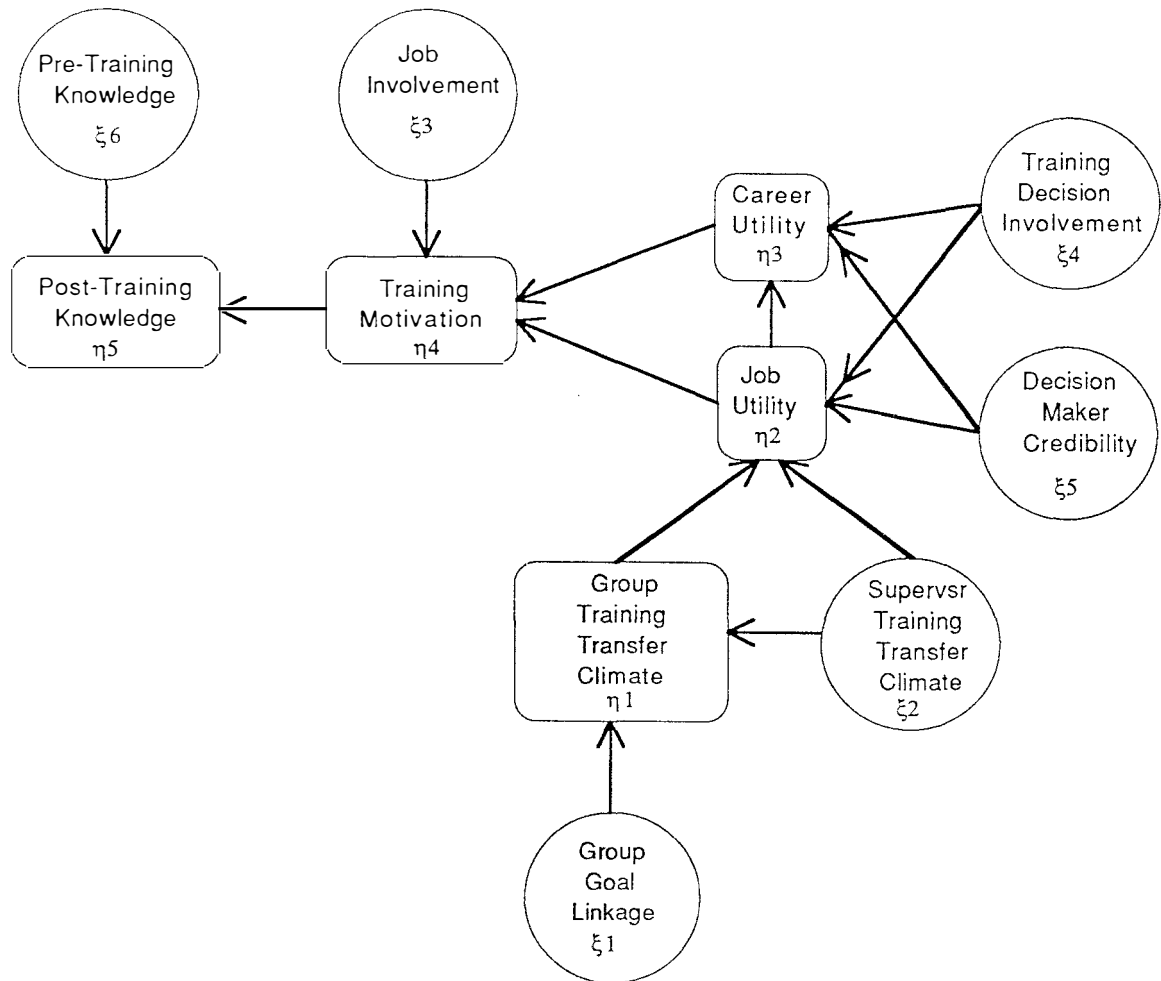


FIGURE 8. INITIAL STRUCTURAL MODEL AFTER THE MEASUREMENT MODEL ANALYSIS.

RH.2a. High credibility sources of training decisions will be associated with higher expected career utility of training.

RH.2b. High credibility sources of training decisions will be associated with higher expected job utility of training.

RH.3 Group goal linkage will be associated with favorable expected group training transfer climate.

RH.4a Expected group training transfer climate will be positively correlated with expected job utility of training.

RH.4b Expected supervisor training transfer climate will be positively correlated with expected job utility of training.

RH.5 Expected supervisor training transfer climate will be positively correlated with expected group training transfer climate.

RH.6 Expected job utility of training will be positively correlated with expected career utility of training.

RH.7a Expected job utility of training will be positively correlated with training motivation.

RH.7b Expected career utility of training will be positively correlated with training motivation.

RH.8 Job involvement will be positively correlated with training motivation.

RH.9 Training motivation will be positively correlated with post-training knowledge.

RH.10 Pre-training knowledge will be positively correlated with post-training knowledge.

LISREL analysis requires that the boundaries of the model be specified (James, Mulaik, & Brett, 1982). Preliminary examination of the structural model indicated that this requirement was fulfilled.

Structural Model

The structural analyses were limited to the 122 participants who indicated in the biodata that someone other than themselves was the primary influence on their participation in training. Some of the participants self-selected into the training sessions. For the purpose of evaluating the impact of the training decision maker's credibility on training utility, voluntary trainees' responses to items about their own credibility were thought to be uninterpretable. Therefore, only data from those who indicated in the biodata that others were the principle

reason for attending were included in the structural analysis.¹

The structural analysis was conducted with factor loadings fixed at the measurement model's standardized solution. Unlike the measurement model, the phi, beta, and gamma matrices were fixed at zero, except for the hypothesized paths. A total of 14 paths were tested in the structural model. The results of the structural analysis are summarized in Figure 9. Unsupported paths are indicated by dashed lines. Table 12 presents the path coefficients, standard errors, and t-values for the structural model. The overall fit for the model was excellent, as demonstrated by a chi squared ratio of 1.92, based on a chi squared statistic of 8915.45 (4637, n=122).

Eleven out of 14 predicted paths were supported. Career and job utility of training were significantly affected by decision source credibility. Group training transfer climate was significantly affected by group goal linkage and by supervisor training transfer climate. Job utility was significantly affected by decision maker credibility, training decision involvement, and supervisor training transfer climate. Career utility of training was

¹ Even with this limitation, there was sufficient variance in participation to determine the relationship between training decision involvement and career and job utility of training.

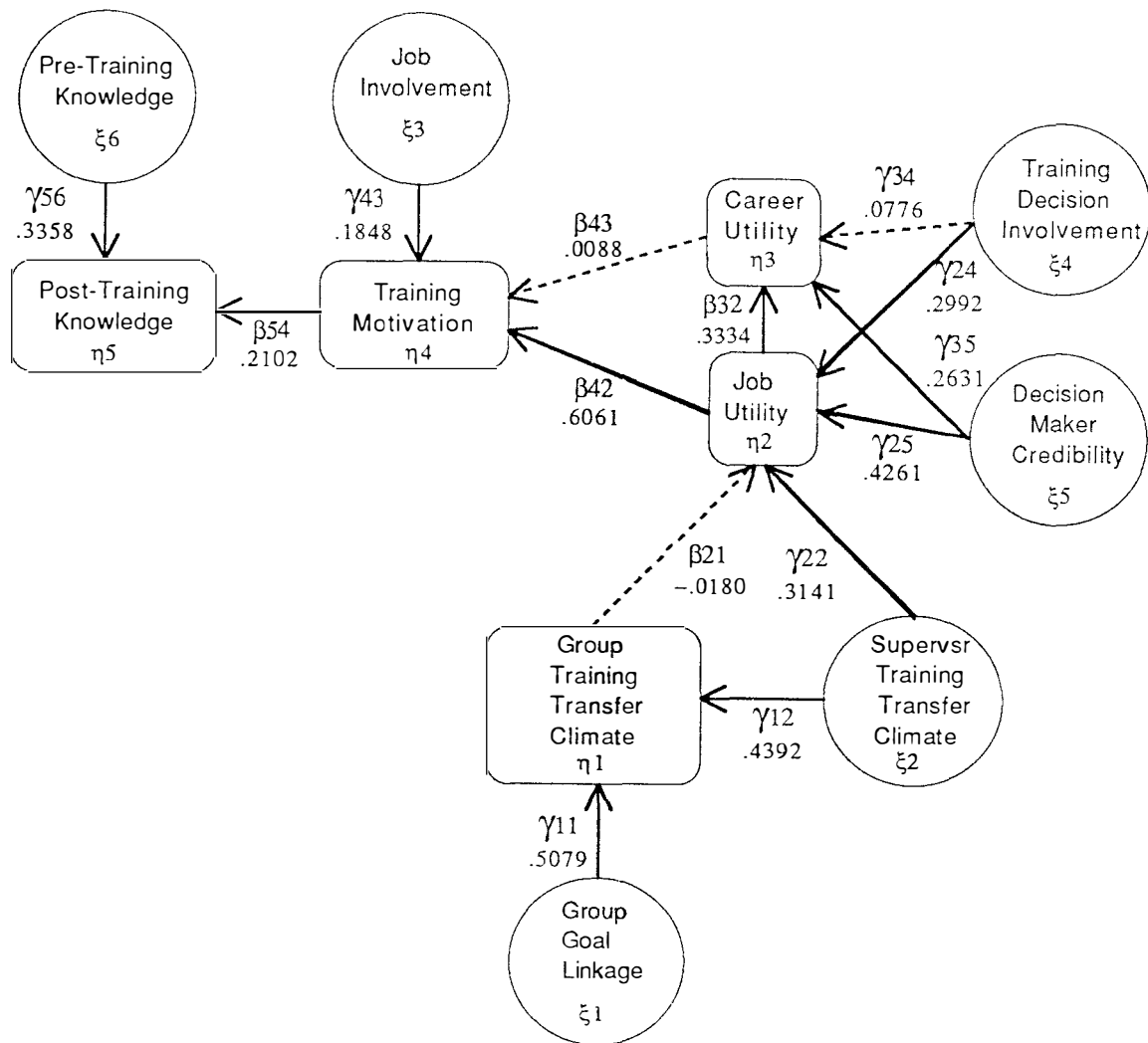


FIGURE 9 STRUCTURAL MODEL FINDINGS.

TABLE 12. RESULTS OF STRUCTURE MODEL ANALYSIS

	PATH COEFFICIENT	STANDARD ERROR	T VALUES
BETA MATRIX			
BE ₂₁	-.0180	.1018	-0.1798
BE ₃₂	.3334	.1105	3.1985***
BE ₄₂	.6061	.0976	6.3574***
BE ₄₃	.0088	.0928	0.0920
BE ₅₄	.2102	.0987	2.2428**
GAMMA MATRIX			
GA ₁₁	.5079	.0754	6.1271***
GA ₁₂	.4392	.0835	4.7829***
GA ₂₂	.3141	.0946	3.0776**
GA ₂₄	.2992	.0782	3.5438***
GA ₂₅	.4261	.0754	5.2374***
GA ₃₄	.0776	.0938	0.8127
GA ₃₅	.2631	.0961	2.6909**
GA ₄₃	.1848	.0852	2.0582*
GA ₅₆	.3358	.1065	3.1514**
Overall: Chi ² = 8915.45, df = 4637; Chi ² ratio = 1.9227			

* p<.05; ** p<.01; *** p<.001 (1-tailed test)

significantly affected by decision maker credibility. Training motivation was significantly affected by job involvement and job utility of training. Post-training knowledge was significantly predicted by pre-training knowledge and training motivation. Thus, RH.2a, 2b, 3, 4b, 5, 6, 7a, 8, 9, and 10 were supported.

Three paths were not supported. As can be seen in Figure 9, two of three of these unsupported paths involved career utility of training. Specifically, career utility was not a predictor of training motivation, and was not affected by training decision involvement. In addition, the path between group training transfer climate and job utility of training was not significant. Thus, RH.1b, 4a, and 7b were not supported.

Several alterations to the structural equation were suggested by high modification indices for the Beta, Gamma, and Phi matrices. (The Beta matrix defines the correlations between latent endogenous variables, the Gamma matrix defines correlations between latent endogenous and exogenous variables, and the Phi matrix indicates relationships between latent exogenous variables.) These indices pointed to strong loadings of goal linkage on decision maker credibility (28.08) and on supervisor training transfer climate (17.00).

Supervisor training transfer climate also had a high modification index for decision maker credibility (19.73). Smaller modification indices existed for goal linkage and post-training Knowledge (12.20), and training decision involvement and decision maker credibility (11.88).

Modifying the structural model solely on the basis of modification indices, and then running the revised structural with the same data runs the risk of capitalizing on chance. In the words of one scholar who recognized the inadvisability of making inferences on the basis of refitting a model with the original data, the results are "baloney" (Cureton, 1950). With this in mind, additional modeling of the data were not conducted.

CHAPTER V

DISCUSSION

The purpose for this study was to explore possible causes of perceived training usefulness, and then investigate causal paths from training usefulness to training motivation and on to training success. The structural model supported ten out of thirteen a priori links. Specific findings are discussed below.

Social Processes within Work Groups

Several hypotheses addressed the social processes that go on within the work group and between the employee and the supervisor. The goal linkage among work group members was predicted to affect expected training transfer climate, which in turn, would affect the perceived job utility of training. Measurement model analyses indicated that the three goal linkage measures were assessing one construct. Furthermore, training transfer climate was verified to be composed of two factors: group training transfer climate and supervisor training transfer climate. The structural analysis indicated that, as predicted in RH.3,

cooperative group goal linkage was associated with expected support for training transfer from group members. This finding suggests that cooperative goal linkage between group members leads to expectations of tolerance and helping behaviors from other group members when trainees return to the work site and start using their newly acquired skills. In addition, employees seem to expect that the supervisor's tolerance and helping behaviors will affect the behaviors that the work group members exhibit toward the returning trainee.

These findings are consistent with previous theory and research. Deutsch (1949) predicted cooperative interdependence among group members would lead to increased sharing of information and assistance. Tjosvold's work (1984, 1986a) indicates that cooperative goal linkage led to more coordination and productivity. Other researchers have found that supportive group behaviors are critical for training transfer (Baldwin & Ford, 1988; Baumgartel & Jeanpierre, 1972; Bahn, 1973). Furthermore, past researchers have found that supervisors play an important part in providing a favorable climate for training transfer (Sims Jr. & Manz, 1982; Byham, Adams, & Kiggins, 1976).

Two other hypotheses about training transfer climate received mixed support. Consistent with RH.4b, high levels of expected supervisor training transfer climate were associated with high levels of expected job utility of training. However, group training transfer climate did not significantly influence job utility of training. Thus, in this sample, the supervisor's support for training was associated with the trainee's view of whether the training would be useful for the current job, while the work group's support for training had no significant effect.

Characteristics of the sample may explain the pattern of findings for group and supervisor training transfer climate. The majority of the organizations included in the sample used traditional top-down management. With the types of workflow that typically characterize these types of jobs, the supervisor would be the primary determinant of the extent to which newly learned behaviors could be generalized to the work setting.

In contrast, in a more team-oriented environment, task workflow might be characterized by more self-management by the work group, and a proportionately smaller emphasis on the supervisor providing the principle source of direction. In team oriented

environments, workflow patterns are reciprocal and team, as opposed to independent and sequential (Van De Ven et al., 1976). Independent and sequential workflow would give little opportunity for the work group members to facilitate or interfere with each other (Thompson, 1967; Van De Ven, Delbecq, & Koenig, Jr., 1976). On the other hand, jobs that involve substantial interdependence between employees would give more opportunity for interference or cooperation. Perhaps only in jobs characterized by reciprocal and team workflow would the effect of the group training transfer climate be strong enough to influence the perceived job utility of training.

A supplemental analysis was conducted to explore the possibility that the training transfer climate of work groups characterized by team and reciprocal interaction would influence the job utility of training. Reciprocal and team interdependence would most likely be experienced by workers who felt that working with peers was an integral part of their job. Therefore, data used for the previous structural analyses were limited to the respondents who indicated in their biodata that working with others at the same level in their organization involved "Most" or "A Large Part" of their work. For this supplemental analysis,

the same structural equation (Figure 8, page 96) and item factor loadings were used. Unfortunately, due to small sample size ($N = 73$), the procedure failed to converge. Furthermore, partitioning the data set on the basis of one biodata response probably fails to accurately identify respondents experiencing team and reciprocal workflow in their jobs. It is likely that many of the respondents who said that peerwork was important had jobs characterized by independent or sequential workflow. A replication of the research with a larger sample of participants holding jobs characterized by team or reciprocal workflow would provide a better test of the proposed path between group training transfer climate and job utility.

The validity of the job utility scale as a measure of utility for an interdependent job may also be in question, as the items measuring job utility focused more on individual, rather than group outcomes. Hence, the levels of analysis of the group training transfer climate and the job utility of training measures were not the same, and as a result, the analysis may have failed to detect a relationship between the two.

Training Decision Involvement

As predicted in RV.1a, higher levels of perceived training decision involvement were associated with high job utility of training. This result is consistent with previous research that suggests that participation in the training decision is associated with a stronger belief that the training is appropriate (Hicks & Klimoski, 1987), and with self selected trainees being less likely to leave a training course early than those taking required training (Rymer & Biersner, 1975). This finding is also consistent with performance appraisal and leadership research, which has found that involvement is correlated with increased acceptance, satisfaction, and behavioral changes. For example, French, Kay and Meyer (1966) found that participation in the performance appraisal system was associated with more acceptance of the goal and satisfaction with the appraisal system.

Decision Maker Credibility

As predicted by RH.2a and 2b, decision maker credibility was positively associated with job and career utility of training. These results are consistent with past theory and research on credibility. Ilgen, Fisher and Taylor (1979) view

credibility as a combination of expertise and trustworthiness. Expertise, particularly organizational knowledge, has been associated with acceptance of suggestions (Katz & Kahn, 1978). Stone, Gueutal, and MacIntosh (1984) found that subordinates were more willing to accept feedback from supervisors when they felt that supervisors were knowledgeable about the subordinate's job. Past research also supports the role of trust in the source of feedback as a necessary condition to acting on performance feedback (Hogan, Fisher & Morrison, 1974).

Career Utility of Training

Only one other factor besides decision maker credibility was associated with career utility of training. As predicted by RH.6, expected job utility was positively associated with expected career utility. In this sample, respondents saw a clear link between taking training to improve current job performance and taking the training to advance their career. This may have been the result of expectations that improved job performance because of the training would be noticed and rewarded with desired career outcomes.

Two paths involving career utility of training were not supported. Given the abundance of research

establishing relationship between involvement and decision acceptance (Anthony, 1978; Yukl, 1981), it is somewhat surprising that involvement in the decision did not predict career utility. In addition, the path between career utility and training motivation was not supported.

The lack of support for the career utility paths may have been caused by several factors. First, the career utility measure may be unreliable or lack construct validity. While the effects of unreliability are removed by LISREL analysis, the construct validity of the measure may be questionable. Career utility was defined as facilitating a promotion, raise, desirable job assignment, or increased job marketability. However, it might also be defined as securing a job that did not interfere with non-work activities, job security, and offering satisfying relations with coworkers. Thus, career utility is a complex concept, and may not have been adequately assessed in the present study.

The manner in which respondents were selected may also present possible explanations for the lack of support for the career utility links. First, career utility may predict training motivation only with particular training topics that were not adequately

represented in the current study. For example, more general developmental courses (i.e., public speaking) may be viewed as providing participants with skills needed for higher positions, thus resulting in a significant path between career utility and training motivation.

Second, the link between career utility and training motivation may occur only in organizations that develop and promote from within, have clear skill specifications for promotable positions, and practice career pathing for their employees. Many companies lack a clear career progression for all levels of employees, and may hire from outside rather than develop and promote from within.

The lack of support for the decision involvement--career utility link may be an artifact of the sample, which was limited to those who indicated in the biodata section that they took training due to influence from others (i. e., their direct supervisor or management higher than their supervisor). Job specific training is more likely to be required or recommended by supervisors or the organization than career-oriented training. Perhaps the companies represented in the sample did not link participation in this training with career advancement. In this case, the salience of

career utility of the training might result in the career utility scale having a low mean, with limited variance due to basement effect. However, a comparison of the job utility and career utility means and standard deviations revealed few differences. The mean score for career utility was 3.36 (SD = .89), while the mean for job utility was 3.88 (SD = .86). Thus, the variance in career utility does not appear to be restricted.

It is also possible that the career utility--training motivation link does not occur in the general population, since many people may value training as a means to create a more impressive resume, and not value learning the content itself. In this case, the training would have career utility, but not be associated with motivation to exert effort in learning.

Training Motivation

The model predicted that job and career utility of training would predict training motivation. These hypotheses received mixed support. As predicted by hypothesis 8a, the path between job utility and training motivation was significant. The corollary hypothesis, that career utility of training predicted training motivation, was not supported. The failure to

find a significant link between career utility and training motivation is consistent with results found by Noe and Schmitt (1986). The results found in the current study are also somewhat consistent with the adult training literature, in that adult learners have been found to be more motivated to take training that will have an immediate application for their current job situation (Knowles, 1987).

Training Knowledge

The model predicted that Training Motivation would predict training success. In contrast to past training research, which has seldom demonstrated the predicted link between motivation and learning (Noe & Schmitt, 1986), this study showed a significant relationship between the two. Furthermore, this result is consistent with past theories that view training success as function of training motivation, individual differences, and the training itself (Wexley & Latham, 1981; Goldstein, 1986; Noe, 1986; Baldwin & Ford, 1988). Although the latter two factors were not explored in the current study, the wide variety of training courses, instructors, and respondents should serve to reduce any systematic effect of individual differences and the training itself. This lends

credence to the idea that training motivation was the primary factor in explaining post training knowledge in the current study. Furthermore, the substantial correlation between objective test scores and self-reports of training knowledge suggests that the participants were able to report their own learning with some accuracy. This increases the chance that the relationship between learning and training motivation was not produced solely by method variance. However, the motivation-learning link is still confounded by the self-report issue, and there is no way to resolve the issue with the measures used in this study.

Limitations

Most authorities do not recommend relying on only one source of data, especially when gathered by the same method (Brinberg & McGrath, 1985; Isaac & Michael, 1987). Relying on self-report questionnaire data may leave the researcher unable to separate the effects of social desirability and method variance from whatever "true" effects exist. In addition, social desirability was probably reduced by insuring confidentiality and also carefully constructing items to avoid obvious demand cues.

The seriousness of the single source bias problem depends on the experimental question. In the present study, perceptions are of theoretical interest and thus single source bias may not be a serious issue. Trainee perceptions are integral to the model. For example, the model proposes that the group member's perception of decision involvement, not decision involvement per se, is the critical factor in predicting training utility. Furthermore, the small sample correlation between objective learning and self-report learning suggests that subjects could accurately report their learning during training.

Despite the above arguments, method variance could still be affecting the findings of the present study. Future research should replicate these findings and explore related issues using multiple sources of data, particularly for the learning measure.

A final issue deals with the inferences that may be drawn from this study. Although LISREL allows the simultaneous testing of all the links in a model, it has limitations. Since the data were cross-sectional, the direction of causality cannot be definitely established. While causal inferences about some of paths may be supported with past research (e.g., decision involvement influencing acceptance might

support causal inferences between decision involvement and perceived training utility), other links may represent relationships that involve ambiguous causal direction. Causal paths involving supervisors and work group members are particularly ambiguous, especially since past leadership research indicates that "leadership and followership are linked concepts; neither can be comprehended without the other" (Heller & Van Til, 1982, p 405). For example, Crockett (1981) suggests that subordinates who actively seek support and performance reviews increase the frequency of feedback from their supervisors.

Implications

The findings of the current study suggest that companies might increase employees' perceptions of job utility of training by increasing the trainee's personal involvement in the decision to take the training, improving the perception of the training decision maker's credibility, and increasing the trainee's expectations of support for training transfer from the supervisor.

Supervisor Training Transfer Climate

One of the most novel aspects of the model in the current study is its recognition of the effect of expectations of training transfer climate from the supervisor on job utility of training. Even before training, the individual may consider whether the supervisor will support efforts to transfer trained skill from the classroom to the job. The finding of the present study suggests that increasing supervisor support for training transfer will lead to higher expected job utility of training, more learning motivation, and greater training success.

How might the training transfer climate provided by the supervisor be improved? Management should build a climate where experimentation with the new skills is allowed, and provide new trainees with assistance from supervisors during the critical reintroduction of the trainee to the work site. It is essential that supervisors use skills in ways that are compatible with what is taught during training. In recognition of the extra demands this might entail, the organization should encourage supervisors' coaching by making it an integral part of the job description and performance appraisal system, thus providing organizational consequences for the supervisor.

Decision Maker Credibility

For the most part, training models have ignored the credibility of the those who influence the decision to participate in training. The findings of the present study suggest that companies may want to consider how their employees view their supervisor's credibility. Special efforts at insuring that the decision source has the necessary information may be beneficial. These might include insuring that the supervisor has sufficient knowledge to properly match the training course to the job requirements and career goals of the individual. In addition, the supervisor will need to build up a reputation for trustworthiness based on fairness and concern for those supervised.

The information needed to allow the supervisor to effectively coach employees may not be available. This may be a very common situation across many organizations, especially those that do not have effective human resource development policies and established career ladders. Organizations may be advised to increase the amount and quality of information available to supervisors, including current information about career ladders, position vacancies and requirements, plus realistic training descriptions. This information may allow supervisors to make more

informed decisions about training. Employee performance appraisal systems that provide information about subordinate skill levels needed for various aspects of their jobs will also allow the supervisor to coach more effectively.

Decision Involvement

A final way in which training utility might be increased involves increasing trainee involvement in the decision to take training. Some organizations do not have a norm of self-improvement via voluntary training participation. Instead, employees take training only when required by the company. Company policies that support a norm of continuous self-development should be implemented. For instance, supervisor's should receive training in coaching and in conducting participative performance appraisal interviews. Giving work teams opportunity to influence working conditions and diagnose/solve productivity and quality problems would encourage a norm of taking responsibility for continuous improvement. Clarifying a direct relationship between training/development and organizational rewards would likely help to build a climate in which employees would voluntarily take training. This would reduce the need to mandate

training, and increase readiness to perceive positive training utility.

Future Research

Future research should investigate the effects of task interdependence, management level, and career pathing on the model. First, as noted earlier, the importance of group vs supervisor training transfer climate may depend on task interdependence. This might be investigated using employees representing a range of tasks from traditional to group-oriented jobs. Second, the relative importance of perceived career vs job utility may change with level in the organization. A third question is closely related to the effect of organizational rank on perceived career utility, and would offer an alternative explanation to a link between rank and career utility of training. Traditionally, career development practices, when present, have focused on managerial rather than hourly employees. Many companies have no career development programs at all. The lack of clear career paths in some organizations may prevent employees from seeing a clear link between training and career advancement. Ambiguous career progression paths could explain why

neither this study nor Noe and Schmitt (1986) found a significant relationship between career awareness and training motivation. The possible impact of career management programs might be studied using participants from companies having a variety of career development strategies. Given the growing trend of career management in organizations (Gutteridge, 1986), an investigation of the possible effect career development programs on variables in the model should be interesting to researchers and practitioners alike.

Not all of the links in the training transfer model were investigated in the present study. Future research should investigate the effects of other links in the model. Specifically, research should determine if supervisor support for training transfer predicts post-training behavior changes exhibited by the returning trainee. Additionally, expected training utility and expected support for training transfer are likely to change with repeated exposure to organizational training. Investigation of these links would shed light on whether the corporate training function is fulfilling expectations to deliver a quality product to its clients in the organization. Finally, longitudinal designs of trainee success in transferring the skills would allow a fuller view of

the influence of these impressions on the effectiveness of the training function in organizations.

Summary and Conclusion

In summary, the finding of the present study suggests that social processes in a work group exert an influence on many behaviors of its members, including learning new skills. The proposed model explicitly considers these social processes. The results of the present study suggest that involvement in the training decision may increase the trainee's perception of job utility of training. Job utility is also predicted by the training transfer climate provided by the supervisor. In addition, supervisor credibility may increase the perceived job utility of training. Finally, perceived job training utility predicts training motivation, which in turn predicts training success.

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APPENDICES

APPENDIX A

TRAINING AND PARTICIPANT CHARACTERISTICS

Data gathering, training and participant characteristics for organizational training from fourteen groups are summarized below. All participants responded to the items using a computer scan form, except for biodata items, which were answered on the pre-training questionnaire. The scan forms and questionnaires were returned in sealed envelopes to the researcher for scanning and data entry. Response rates reflect the number of participants who completed at least half of the questionnaire items. All training was paid for by the employer.

Government Transportation Facility
Management/Communication Skills, N = 10

Management/communication skill training was given to all supervisors of a service organization maintaining a municipal facility. Twenty half day training sessions, presented over five months, were given at nearby hotel meeting facilities by outside training/organizational development consultants. The participants, nine men and one woman, were supervisors from all departments of the organization. The average job tenure was 14.1 years, with two participants having only three months of experience. Under strong encouragement from the management and the consultants, who wanted the data for program evaluation, the pre-training questionnaire was filled out the day before the beginning of the training. Post-training data were gathered one month after the last session. One important circumstance about this data is that the training was the first that many of these participants had ever been offered by the employer, and was part of an organizational development effort. The course had been designed on the basis of an organization needs analysis performed by the consultants. Supervisors completed the training before the employees started their training in communication skills. Ten of twelve supervisors completed the questionnaires, for a response rate of .83.

Government Transportation Facility

Communication Skills, N = 40

This same organization also required all its non supervisory employees to take related communication training, given for 5 days over 2 months. The consultants held the training sessions at nearby hotel meeting facilities. The participants, twenty men, eighteen women and two unspecified employees, came from all departments in the organization, and had an average job tenure of 4.4 years. Pre-training questionnaires were given out two days before the training started, and post-training questionnaires were completed two weeks after the last class. From 45 trainees, 40 participated, for a response rate of .89.

Medical Center #1

Management Training, N = 18

Management training was offered to managers in this medical center. Two consecutive days of training were given by members of the training department and subject matter experts. This training was part of a continuing program to develop management potential in staff members. The participants, sixteen women and two men, held lower and middle level management positions from a variety of departments in the hospital. About 1/2 were directly involved in patient care or treatment. The average job tenure was five years in the current position, although two people were very new (less than three months). The participants filled out the pre-training portion before coming to the training, and the post-training questionnaire at the conclusion of the course or within a few weeks of completion. From 39 participants contacted to complete the questionnaires, eighteen responded for a response rate of .46.

Medical Center #2

Cardiology Care, N = 10

Medical training (Cardiology) was given to participants of this medical center who desired to work in the Critical Care Unit of the hospital. Twelve days of training over four weeks were given on site by the subject matter expert from CCU. The participants, nine women and one man, were all nurses or nurse supervisors (two) from various departments. The average job tenure was 7.8 years. Both parts of the questionnaire were administered by the researcher. The participants filled out the pre-training portion in the first hour of the course, and the post-training questionnaire on the last day of the course, before taking a final objective test on the course work. From eleven participants in the course, ten filled out the questionnaires for a response rate of .91.

Medical Center #2

CPR, N = 5

CPR training was given to participants from this medical center as part of an annual inservice training day. The three hour CPR section was scheduled during the morning and took place in the seminar rooms of the training department. The trainer was a member of the training department. The participants, one women and four men, came from various departments and levels in the hospital. Two of the five were supervisors. The average job tenure was 2.5 years. The training department sent out an unknown number of questionnaire packets with a cover letter to all participants who advance registered. Many who preregistered did not attend training. Those who preregistered and agreed to participate filled out the pre-training portion before coming to the inservice training, then completed the post-training portion at the end of the CPR unit. The response rate is unknown, but may have been as poor as .10.

Medical Center #3
Management Training, N=5

Management training (strongly encouraged but not required) was given to participants as part of an ongoing management development program. Two 1/2 day training units were given at the work site by members of the training department. The participants, three men and two women, were managers from various departments and levels. All were staff as opposed to medical supervisors, with an average tenure of 11.75 years. (However, one participant had 35 years tenure, leaving the other four with an average tenure of three years.) The training department sent out memos requesting cooperation in the study. Those who were willing to participate were requested to come by the training/development office to pick up a copy of the questionnaire to fill out before coming to the seminar. The post-training questionnaire was filled out at the end of the second session. The response rate is unknown, but may have been as poor as .25.

Government Training Agency

Planning/Organizing, N = 11

Management training was given to government employees as part of a series of 8 management seminars in a certificate program offered by a quasi-governmental development agency. The six hour unit on "Planning and Organizing" on a single occasion at a resort meeting sight by a training consultant. The participants, six men and four women, were civil servants from various city and county departments. Six were managers. The average tenure was 7.55 years. The week before training, questionnaire packets were sent with a cover letter from the agency director explaining the research and requesting participation. Pre-training questionnaires were filled out before coming to the seminar, and post-training questionnaires were filled out at the end of the session. The morning session had noise and visual interference, and some of the participants left before turning in their questionnaires. Based on the number who attended the seminar and also completed the questionnaires, the response rate was approximately .44.

Government Training Agency

Leadership Styles, N = 10

Management training was given to government employees as part of a series of eight management seminars in a certificate program offered by a quasi-governmental development agency. Most attended voluntarily. The six hour unit on "Leadership Styles" was presented on a single occasion at a resort meeting sight by a training consultant. The participants, five men and five women, were civil servants from various city and county departments. Seven were managers. The average tenure was 7.82 years, but if one person with over 40 years tenure was removed, the remaining participants had an average of 3.82 years tenure. The week before training, questionnaire packets were sent with a cover letter from the agency director explaining the research and requesting participation. Pre-training questionnaires were filled out before coming to the seminar, and post-training questionnaires were filled out at the end of the session. Based on the number who attended the seminar and also completed the questionnaires, the response rate was approximately .50.

Management Development Firm #1

Communication Skills, N = 12

Communication skills training was given as part of annual inservice training to the entire staff of a management development center associated with a southern university. The staff customarily receives annual onsite inservice training. This three day seminar was given by an outside consultant frequently used by the agency to deliver communication skill training to its clients. The participants, five women, three men and four unspecified, had an average tenure of 3.90 years. Six were supervisors. The questionnaire packets were given out to all trainees three days before the training began. Pre-training questionnaires were filled out before coming to the training, and post-training questionnaire was completed by most participants two hours before the end of the last day. Two participants completed theirs the week after training ended. The response rate was .48.

Management Development Firm #2

Finance Basics, N = 17

Finance training (strongly encouraged by the participant's company) was given to participants at a management development center associated with a large south eastern university. Participants were drawn from a variety of local businesses for a one day seminar on finance, one of a series of eight units being offered as part of a management development sequence. Thirteen participant were supervisors or managers from various levels in their respective organizations, four were nonsupervisors. There were nine men, eight women, with an average job tenure of 3.46 years (2.22 years if two participants with unusually long tenures were removed). A copy of the questionnaire and ample scan forms were sent to the development center. They copied and mailed them to the participants the week before the seminar. Participants filled out the pre-training portion before coming to training, and completed the post-training portion at the end of the seminar. Completed questionnaires were mailed back to the researcher. Seventeen out of an estimated twenty trainees completed the questionnaire for a response rate of .85.

University Employee Development

Word Processing/Database, N = 12

Computer software training was given to employees from various departments of a large southern university. The training was conducted by an in-house trainer. For this research, data from participants taking either of two computer courses were combined. Some participants were required to come, others came voluntarily. All participants were women with an average tenure of 4.66 years. Seven were non supervisory, one was a supervisor, and four did not specify. Twelve hours of Wordperfect training over eight days, or nine hours of dBase training over three days was given at an employee development computer lab. Twenty pre-registered participants were contacted by phone to see if they were willing to participate, and 15 agreed. Questionnaire packets were hand delivered. Schedule changes occurred that prevented several from coming as originally planned. Twelve returned completed questionnaires to the training department, for a return rate of .60. The researcher retrieved the surveys from the development office.

Multisite Banking Institution

Computer Data Retrieval/Product Knowledge, N = 10

Mandatory training was given to customer service representatives of this multi-branch banking institution. A total of five days of training, each topic given one month apart, covered Retail Credit (two days), Product Sales (two days) and CRT (one day). The training was conducted by the training director. At the conclusion of each unit, an objective 100 point test was given. The average of the three tests ranged from 96 to 100 points, with 98 being the mean. Ten consumer service representatives, all women, participated, with an average job tenure of 6.61 years. Participants were mailed the questionnaires three days before the first day of training, and completed the post training portion at the end of the last day. Ten of twelve trainees responded by completing the questionnaire for a response rate of .83.

Chemical Manufacturer

SPC Training, N=31

Statistical Process Control training was given to trainees at a chemical manufacturer located in north central region of the U.S.. This training consisted of five days of training conducted by a training consultant and subject matter experts from the host organization. Two thirds of the trainees came from the sponsoring organization, with the balance from other manufacturers in the area. Most trainees had been sent by their supervisors and had an average job tenure of 2.76 years. The participants, 24 men and six women and one unspecified, were primarily engineers, with some project managers. The sponsoring company mailed the questionnaires to pre-registered participants the week before the training began. Of the number who attended training, 31 of 32 returned questionnaires. The questionnaires were completed before coming to the first day of training. The post-training questionnaire was filled out the last few minutes of the SPC seminar, and then mailed back to the researcher.

Home Manufacturer
Direct Sales, N = 31

Mandatory sales training was given to recently hired employees sales people of a multistate housing manufacturer. The five day training course was given at the corporate headquarters by the training director. Six trainees were women, 24 were men, and one was unspecified. Eight were supervisors and thirteen were nonsupervisors, with an average job tenure of 1.63. If three unusually long tenures were taken out, the average tenure of the remaining 28 trainees was .41 years. Pre-training questionnaires were filled out at the beginning of the first day of training, and the post-training questionnaire was filled out at the end of the last day. Two of the trainees missed the first day of training. Of the 33 taking the course, 31 completed the questionnaire, for a response rate of .94.

Japanese Electronic Manufacturer

Train the Trainer, N = 23

Mandatory "Train the Trainer" training was given to line supervisors and workers of a Japanese owned electronics manufacturer. The training was designed and team presented by a consultant connected with a local university and a subject matter expert (supervisor). The two and a half day training was given onsite to twelve men and eleven women. Six participants were supervisors, one was a nonsupervisor, and sixteen did not specify whether they were supervisor or not. The average job tenure was 1.69 years. The company distributed the questionnaires three days before training began so that the participants could complete the pre-training portion prior to class. The post-training questionnaires were completed the last few minutes of class. Of thirty people taking the course, 23 participated, for a response rate of .76.

APPENDIX B

PRE-TRAINING AND POST-TRAINING QUESTIONNAIRES

The consent forms and items from the questionnaires follow.

QUESTIONNAIRES (CONTINUED)

INFORMED CONSENT

I want to find out what kinds of things affect how well people learn in training courses. Please look over this study summary of how you can help and what I will be doing with the information you give me.

YOU WILL BE ASKED TO FILL OUT TWO QUESTIONNAIRES. One before training begins (about 40 minutes) and another after you have completed training (about 5 minutes). Depending on your organization, you may also be tested or asked to demonstrate your knowledge of what is taught in the training. There are no known risks involved with this research.

YOUR IDENTITY WILL BE KEPT CONFIDENTIAL. Your individual responses will be sent to me for research purposes only. I will record them onto a computer for analysis. All data will be kept in a university computer file. No one from your organization will be able to connect your survey responses to you. Your responses will be in sealed envelopes that will be put in a box and given to me. Only summary results from all participants will be available to your organization to assist them in training evaluation.

Your identification number will be used to match both parts of your survey so it is important to use the same one for both parts. The combined information will be used to discover how life in your company or organization affects how much is learned in training courses.

If you have any questions about the study, either now or later, please contact:

CATHY CLARK
413 STOKELY MANAGEMENT CENTER
UNIVERSITY OF TENNESSEE
KNOXVILLE, TN 37996-0545
or call: 615 974-3161

IF YOU ARE WILLING TO HELP, PLEASE FILL OUT THE BOTTOM OF THIS FORM AND THEN COMPLETE THE QUESTIONNAIRE. Once I see that you have given me permission to use your responses, these consent form will be torn off.

PLEASE USE PENCIL ONLY!

NAME (please print) _____

SIGNATURE _____ DATE _____

YOUR HELP IN THIS STUDY IS VOLUNTARY, AND YOU MAY REFUSE TO PARTICIPATE, IF YOU WISH. ALSO, YOU MAY QUIT WITHOUT PENALTY AT ANY TIME BEFORE YOU COMPLETE THE QUESTIONNAIRES.

THANK YOU FOR YOUR HELP....

QUESTIONNAIRES (CONTINUED)

TRAINING SURVEY PART ONE
BIODATA

IDENTIFICATION NUMBER _____ GENDER M__ F__ ORGANIZATION _____

JOB TITLE _____ JOB LEVEL _____

MAJOR JOB DUTIES _____

TIME IN THIS JOB _____ THIS JOB IS FULL__ PART TIME__ P.R.N.____

WHAT PART OF YOUR JOB INCLUDES WORKING WITH PEOPLE AT THE SAME LEVEL IN YOUR ORGANIZATION? (CHECK ONE.) MOST__ LARGE PART__ SOME__ SMALL PART__ NONE__

HOW MANY ARE IN THIS IMMEDIATE WORK GROUP?_____

IF YOU ARE A MANAGER, HOW MANY PEOPLE DO YOU DIRECTLY SUPERVISE? _____

NAME OF TRAINING COURSE _____

BRIEFLY DESCRIBE THE COURSE YOU ARE TAKING:_____

LENGTH OF TRAINING COURSE _____

WHO IS DOING THE TRAINING? (CHECK ONE.)

COMPANY/ORGANIZATION TRAINING DEPARTMENT _____

OUTSIDE CONSULTANT ____ OTHER (SPECIFY)_____

WHICH OF THE FOLLOWING BEST DESCRIBES WHO PAID FOR THIS COURSE: (CHECK ONE.)

NO COURSE FEE ____ COMPANY PAID ____ SPLIT COST ____ I PAID ALL ____

WHICH OF THE FOLLOWING BEST DESCRIBES WHERE THIS COURSE IS BEING TAKEN: (CHECK ONE.)

AT A PUBLIC MEETING SITE (HOTEL, RESORT) ____ UNIVERSITY ____

AT MY WORKPLACE ____ AT ANOTHER COMPANY BRANCH ____ OTHER (SPECIFY)_____

DISTRIBUTE 10 POINTS ACCORDING TO HOW MUCH INFLUENCE EACH HAD ON YOU ATTENDING THIS TRAINING COURSE. MAKE SURE THEY ADD UP TO 10, AND PLEASE USE 0 OR WHOLE NUMBERS. NO HALF POINTS, PLEASE!

YOURSELF _____

OTHER EMPLOYEES (NOT SUPERVISOR) _____

YOUR SUPERVISOR _____

SOMEONE ABOVE YOUR SUPERVISOR _____

OTHER (PLEASE SPECIFY) _____

TOTAL 10 POINTS

QUESTIONNAIRES (CONTINUED)

NOW, ANSWER THE REST OF THIS QUESTIONNAIRE USING THE SCAN FORM. PLEASE FILL OUT THE FIRST 4 SPACES AND COLUMNS OF THE IDENTIFICATION NUMBER AREA WITH THE ID NUMBER ON THE PREVIOUS PAGE OF THIS QUESTIONNAIRE. (THE LAST 6 SPACES WILL BE BLANK.) THEN, AS YOU ANSWER THE QUESTIONS, BE SURE YOUR PENCIL MARKS ARE DARK AND COMPLETELY FILL IN THE NUMBERED CIRCLES. ERASE ANY CHANGES COMPLETELY.

People enroll in training classes for a variety of reasons. Think about how it was decided that you would take this training course. Use one of the following scale anchors to show how much you agree with each of the following statements.

Strongly Disagree 1	Somewhat Disagree 2	Neither Agree Nor Disagree 3	Somewhat Agree 4	Strongly Agree 5
---------------------------	---------------------------	------------------------------------	------------------------	------------------------

1. Someone above my supervisor required that I take this training.
2. My supervisor required that I take this training.
3. I enrolled in this training course because of my desires for training.
4. I was able to make suggestions to my supervisor about what training course I would take.
5. My supervisor listened to my preferences regarding my participation in this training course.
6. I was involved in the decision regarding my enrollment in this training course.

QUESTIONNAIRES (CONTINUED)

7. OTHER THAN YOURSELF, who had the most important influence on your participation in this training course? Choose ONE only. (Your choice will be the training decision SOURCE referred to in the next 12 questions.)

My Workgroup Members	My Supervisor	Someone Above My Supervisor
1	2	3

NOW, THINKING ABOUT THIS ONE SOURCE, PLEASE ANSWER EACH OF THE NEXT 12 QUESTIONS USING THE FOLLOWING SCALE. Mark ONE response for each question.

Strongly Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Strongly Agree
1	2	3	4	5

THIS SOURCE:

8. is knowledgeable enough to know if I should take this training.
9. knows what is involved in my job.
10. is aware of my level of job performance.
11. is aware of what training I need to improve my job performance.
12. is aware of what I would like to achieve in my job/career.
13. is aware of what training I need to attain my career goals.
14. knows about the content of this training course.
15. knows what is needed to get ahead in this organization.
16. can be counted on to give me honest feedback on how I am doing.
17. has always dealt fairly with me.
18. I have to be careful about what I say around this source.
19. I have a high degree of trust in this source's intentions toward me.

QUESTIONNAIRES (CONTINUED)

Think of what it will be like trying to use the new skills or knowledge learned in this course back on your job. Fill in the circle on the scan form that shows how much you agree with the following statements about the conditions in your workgroup. Please use the following scale. Mark ONE response for each question.

Strongly Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Strongly Agree
1	2	3	4	5

WHEN I RETURN FROM TRAINING, I BELIEVE:

35. that the people I work with most often will be impatient if I try out any new skills.
36. my coworkers will allow me to get accustomed to using my new skills on the job.
37. my using the training course procedures will be resisted by my coworkers.
38. my coworkers will accept me making mistakes on the job as a necessary part of my trying out new skills.
39. my coworkers will not cooperate with me in using the skills taught in the training course.
40. my supervisor will be impatient if I try out my new skills.
41. my supervisor will allow me to get accustomed to using new skills on the job.
42. my supervisor will help me get started using my training skills.
43. my supervisor will prevent me from using the procedures taught in the training course.
44. my supervisor will accept me making mistakes on the job as a necessary part of my trying out new skills.
45. my supervisor will not be tolerant of any changes in how things are done.
46. my supervisor is already using the skills taught in this course.

QUESTIONNAIRES (CONTINUED)

For some people, their job is the most important part of their life. For others, their non-work activities are more important to them. Think about how involved you are with your job, and respond to the next three questions with the following scale to show how much you agree with the statements. Mark ONE response for each question.

Strongly Disagree	Somewhat Disagree	Neither Nor Disagree	Agree	Somewhat Agree	Strongly Agree
1	2	3		4	5

20. I am very much personally involved with my work.
21. I live, eat, and breathe my job.
22. The most important things which happen to me involve my job.

Think about how this training course may be useful to you. Then use the following scale to show how much you agree with each of the next 12 statements. Mark ONE response for each question.

Strongly Disagree	Somewhat Disagree	Neither Nor Disagree	Agree	Somewhat Agree	Strongly Agree
1	2	3		4	5

I BELIEVE THIS TRAINING WILL:

23. help me do higher quality work.
24. help me improve performance in my current job.
25. focus on an area of my job where I need improvement.
26. make me more eligible for a promotion.
27. make me more eligible for a wage increase.
28. make me more eligible for a more desirable job assignment in this company.
29. improve my chances to get a better job with another company.
30. increase my future job prospects and opportunities.

I BELIEVE THE SKILLS TAUGHT IN THIS COURSE WILL:

31. be important for my job duties.
32. help me increase my productivity on this job.
33. enable me to do my job more efficiently.
34. help me to reduce my job stress.

QUESTIONNAIRES (CONTINUED)

Think about the group of people that you work with regularly. Now, keeping a typical member of this workgroup in mind, fill in the numbered circle on the scan form that gives the best estimate of how often the following things occur. Use the following scale for all questions, and mark only ONE response for each.

Almost Never	Seldom	Sometimes	Usually	Almost Always
1	2	3	4	5

47. I learn a lot from working with the typical person in my workgroup.

48. When he/she achieves goals, it makes it more difficult for me to achieve mine.

49. We work separately.

50. His or her goals are incompatible with mine.

51. His or her success comes at the expense of mine.

THE TYPICAL MEMBER OF MY WORKGROUP:

52. enjoys working on tasks that require cooperation.

53. conceals or misrepresents information that would be helpful to others in my workgroup.

54. prefers to work alone.

55. willingly shares information with coworkers.

56. is indifferent if I attain my goals.

57. passes on important information to me.

58. is pleased when I succeed.

59. is uninterested in the flow of information.

60. shows as much concern for my goals as for his/her's.

61. withholds important information from me.

62. doesn't know what I want to accomplish.

63. helps me find ways to achieve my objectives.

64. likes to demonstrate his/her superiority.

65. looks out for his/her own welfare rather than that of the group.

66. gives high priority to my goals.

QUESTIONNAIRES (CONTINUED)

THE TYPICAL MEMBER OF MY WORKGROUP:

Almost Never 1	Seldom 2	Sometimes 3	Usually 4	Almost Always 5
67.	restricts my attempts for improvement.			
68.	prefers to work alone rather than with me.			
69.	helps me grow and develop on the job.			
70.	is disturbed by my accomplishments.			
71.	is unconcerned whether I get ahead in the organization.			
72.	takes pride in my accomplishments.			
73.	structures things to favor his/her goals.			
74.	likes to get rewards through his/her own individual work.			
75.	shares ideas and resources with me.			
76.	tries hard to look better than me.			
77.	structures things for our goals.			
78.	feels threatened when I learn new skills and knowledge.			
79.	is interested in what I want to accomplish.			
80.	structures things his/her way and ignores my interests.			
81.	helps me do a good job.			
82.	tries to make me look ineffective.			
83.	likes to show that he/she knows more than I.			
84.	is too busy to be interested in what I want.			
85.	goes out of his/her way to undercut my efforts.			
86.	gets in the way of my growth and development.			
87.	is committed to his/her objectives and unconcerned about mine.			
88.	wants me to do poorly.			

QUESTIONNAIRES (CONTINUED)

Think about this training course and your willingness to learn the skills or knowledge that will be presented. Then, using the following scale, fill in the numbered circle of the scan form that best states how much you agree with the statement. Mark ONE response for each question.

Strongly	Somewhat	Neither	Agree	Somewhat	Strongly
Disagree	Disagree	Nor	Disagree	Agree	Agree
1	2	3	4	5	

89. I will try to learn as much as I can from this training course.
90. I will make a special effort to complete all assignments.
91. I will put forth considerable effort in learning the skills taught in this class.
92. I am looking forward to attending this training course.
93. I plan on putting out a minimum of effort in this course.
94. I am willing to focus all my attention on learning the material presented in this course.
95. I plan to use this course to learn a new way of doing things.
96. I plan to really get involved in learning the material presented in this training course.
97. I am willing to use my own time to prepare for class by reading, practicing skills, doing assignments, etc.

THANKS FOR COMPLETING THIS
QUESTIONNAIRE!

Please bring this questionnaire to your training seminar. At the end of the seminar, you will be asked to fill out a very short survey about how much you feel you have learned. Be sure that you use a separate scan form for the second survey, and that the same identification number is used on both.

When you have finished both parts, put them into the manilla envelope, along with the signed consent form. Then put the envelope into the box.

QUESTIONNAIRES (CONTINUED)

INFORMED CONSENT PART 2

THANKS FOR COMPLETING THE FIRST
QUESTIONNAIRE.

Now that you have completed your training, I would like you to fill out a short questionnaire about how much you think you learned in the training course. If your trainer gave you a test on the training, I will be using that information, too. Record your ID number (see the top of the next page) on your scan form. After you complete the second part of the survey, seal both the first and second parts, the two scan forms, and the consent forms into the manilla envelope and drop it into the box. The entire box will be delivered to me unopened.

USE PENCIL ONLY

PLEASE BE SURE TO USE THE SAME
IDENTIFICATION NUMBER ON BOTH
QUESTIONNAIRES.

Your questionnaire responses will be kept confidential, and no one at the organization will ever find out what you said on it. I will be combining your responses with those of other people, so your answers will not be individually identified.

If you have any questions about the research, either now or later, please contact

CATHY CLARK
413 STOKELY MANAGEMENT CENTER
UNIVERSITY OF TENNESSEE
KNOXVILLE, TN 37996-0545

or call: 615 974-3161

PLEASE FILL OUT THE BOTTOM OF THIS FORM AND THEN COMPLETE THE QUESTIONNAIRE. This sheet will be torn off after I see that you will allow me to use your survey for the research.

NAME (print) _____ DATE _____

SIGNATURE _____

YOUR HELP ON THIS STUDY IS VOLUNTARY, AND YOU MAY REFUSE TO FILL OUT THIS QUESTIONNAIRE IF YOU WISH. HOWEVER, I HOPE YOU WILL AGREE TO ANSWER THESE QUESTIONS, BECAUSE IT WOULD REALLY HELP ME TO BE ABLE TO USE YOUR RESPONSES IN MY RESEARCH. AGAIN,

THANK YOUR FOR HELPING ME IN THIS STUDY!

QUESTIONNAIRES (CONTINUED)

TRAINING SURVEY PART TWO

ID NUMBER _____

* BE SURE THIS NUMBER IS RECORDED ON THE FIRST 4 SPACES OF YOUR SCAN FORM.

Think about how well you learned the material in this course. Completely fill in the numbered circle on the scan form that shows how much you agree with the following statements about what you originally knew and what you learned. USE THE FOLLOWING SCALE ANCHORS TO SHOW HOW MUCH YOU AGREE WITH THE NEXT 3 STATEMENTS. MARK ONE RESPONSE FOR EACH ANSWER.

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1	2	3	4	5

FIRST, THINK ABOUT WHAT YOU KNEW ABOUT THE TRAINING MATERIAL BEFORE YOU TOOK THE TRAINING.

1. I could have shown or explained most of what was taught in this training course even before I took the training.
2. At the beginning of this course, I understood nothing about the subject areataught in this course.
3. Before training, I used to incorrectly perform some of the skills taught in the course.
4. How much of the material taught in the training class did you already know?

Almost None	Very Little	Some	Quite A Bit	Almost All
1	2	3	4	5

5. Before you took this course, how easy would it have been for you to apply what was later taught in this course?

Extremely Difficult	Very Difficult	Moderate Difficulty	Quite Easy	Extremely Easy
1	2	3	4	5

QUESTIONNAIRES (CONTINUED)

Think about how much you NOW know about the training material. Use the following scale to show how much you agree with the next 4 statements. Mark one response for each item.

- | | Strongly
Disagree | Somewhat
Disagree | Neutral | Somewhat
Agree | Strongly
Agree |
|-----|--|----------------------|---------|-------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 |
| 6. | Based on what I learned, I am very confident that <u>I will know how to use the skills</u> taught in this course when I return to the job. | | | | |
| 7. | If the opportunity presents itself during the first month I return to the job, I am very certain that I <u>will remember enough to use the training.</u> | | | | |
| 8. | I am confident that I have a <u>solid understanding</u> of the material presented in the training course. | | | | |
| 9. | <u>Now</u> if someone asked me, I am confident that I could show or explain what was taught in the training course. | | | | |
| 10. | How much of the material taught in the training class did you know <u>at the end of the training?</u> | | | | |

Almost None	Very Little	Some	Quite A Bit	Almost All
1	2	3	4	5

Now put both questionnaires and their scan form, plus the signed consent form into the manila envelope, seal it, and put them all into the box.

THANKS FOR COMPLETING THIS
QUESTIONNAIRE AND HELPING
IN THIS RESEARCH.

VITA

Catherine S. Clark was born in Charleston, West Virginia on January 17, 1949. She attended public schools in Charleston and Parkersburg, West Virginia. Cathy attended Muskingum College in New Concord, Ohio, graduating in 1970 with a BS in Geology and Secondary Education. After teaching four years of high school in Byesville and Zanesville Ohio, the couple moved to Bloomsburg, Pennsylvania. For two years, Cathy was a banquet sales representative for Holiday Inn, until the couple returned to Ohio. At this point she joined her husband in working with the AAA of Southern Ohio. Starting as a travel counsellor, she was named manager of the Gallipolis branch. In addition, she also worked part time in real estate sales, until fall of 1979, when their first child, Suzanne Elizabeth, was born. In 1980 and 1981, Cathy taught Geology at the Rio Grande College. Moving up in responsibilities, Chuck accepted a transfer to Southern West Virginia Automobile Club in Charleston, West Virginia. In the fall 1981, the couple's second child, Meredith Christine, was born. (They moved into a house only two blocks from Cathy's childhood home.) With two small children, all work outside the home stopped. Following career moves of her husband, the couple relocated three times in 1983, from Charleston to Derry, New Hampshire,

Little Rock, Arkansas, and finally to Knoxville, Tennessee in 1984.

In the fall of 1985, Cathy accepted an assistantship in the Industrial and Organizational Psychology program at The University of Tennessee, and began studying toward her Doctorate. Over the next five years, she served as a teaching and research assistant in the Department of Management. In the winter of 1988, she interned at Saturn Corporation in Troy, Michigan on the Human Resources Team, where she completed a comparative analysis of three corporate human resource systems and as well as developmental work for a corporate values survey for Saturn. After returning to Knoxville, she continued to consult with Saturn to validate the values survey. In December of 1990, she received a Ph.D degree in Industrial and Organizational Psychology from The University of Tennessee.

The author is a member of the Academy of Management and American Society of Trainers and Developers. She is currently an assistant professor at the same institution where she taught geology ten years previously, now the University of Rio Grande.